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CONSTRUCTS AFFECTING CONTINUANCE INTENTION IN CONSUMERS WITH MOBILE FINANCIAL APPS: A DUAL FACTOR APPROACH

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ABSTRACT

This study builds on existing continuance intention literature and theories, and extends theory to include the dual-factor model based on relationship marketing literature and makes recommendations to practitioners based on our findings. The main research question is: What key dedication-based and constraint-based factors drive continuance intention with mobile financial apps by Chinese mobile consumers? A structural equation model built from a survey of 1,176 mobile Chinese consumers shows support for continuance intention to use mobile technologies for financial applications. In general, the hypotheses were supported by variables related to mobile app usage with Chinese consumers, except the path between loyalty and continuance intention. This study contributes to theory by extending the dual-factor model to add three new constructs: perceived enjoyment and personal innovativeness as dedication-based factors and habit as a constraint-based factor, into the model. The study also contributes to theory by linking the dual-factor model with continuance intention. This linkage provides new theoretical insights into continuance intention in the context of mobile financial apps in one of the fastest growing emerging markets. A better understanding of the impact of the key factors will lead managers to more informed decision making pertinent to the design and availability of new financial mobile products and services for fast growing markets. Our study contributes to a more in-depth understanding of the mechanisms surrounding the continuance use intention of emergent mobile technologies and services.

Keywords: Continuance intention, dual-factor model, habit, personal innovativeness, loyalty, satisfaction

INTRODUCTION

Global mobile technology use has grown exponentially, especially in China. Because of poor landline infrastructure in China, mobile phone adoption has been rapid, even saturated, especially in the past several years. The number of mobile phone users in China is growing at a rate of 4% per month, which comes to 46.4% annually [84]. In 2016, China had 1.3 billion mobile subscribers with a penetration rate for mobile telephones of 93.2% [84]. Meanwhile, mobile commerce technologies have been emerging to cater multiple types of consumers who use them for various purposes; there are also many actors participating in changing market configurations in China, including governmental, social, technological, and industrial actors [89]. Notably, the three state-run telecom companies, China Telecom, China

Unicom and China Mobile, were formed by a recent reform and reconstruction launched in 2008, directed by Ministry of Information Industry (MII), Nationals Development and Reform Commissions (NDRC) and Minister of Finance. Since then, all the three companies have gained 3G licenses and engaged in fixed-line and mobile business in China. In July 2016, China Mobile, China Telecom, and China Unicom has market share of 62.8%, 22.5%, and 14.6%, respectively. By December 2015, China Mobile served 776 million subscribers, China Unicom 285.7 million and China Telecom 185 million subscribers [36].

In China, we also witness the exponential growth of mobile applications (apps), started in part by music downloading [2]. The growth of China's mobile apps in the past three years is over 20% annually. Since Google Play is blocked in China, developers are forced to upload their apps on various third party app markets. The basic purpose or utility of top apps in China are fairly similar with what in the United States, but will find many differences in terms of their design and user experiences, as well as some unique features [96]. For example, over 889 million Chinese consumers use WeChat and another 899 million use QQ for social networking.

In the financial sector, over the last five years, China has launched new banks dedicated to mobile wallet apps, such as WeBank. There has also been a rapid increase in online financial services, such as online payments, crowd funding, P2P lending, mobile payment and online payment services [38]. New O2O (online-to-offline) mobile services allow consumers to find and use products online and offline in new ways that support their lifestyles. According to a study by the China Internet Network Information Center, the number of people using mobile payments climbed to more than 217 million by the end of 2015, a jump of 73% from the previous year [20]. The study also found that around 40% of Chinese Internet users pay for products and services using their mobile wallet. The value of Alipay, a mobile wallet, has reached the Chinese version of Amazon. Alipay developed by Ant Financial, which is controlled by Alibaba, provides many digital money functions and allows patients to schedule hospital visits and pay their hospital bills [16]. There has also been a tremendous shift to both contactless and remote mobile payments in China by heavily investing in contactless cards, near-field chips for mobile devices, contactless payment terminals, as well as sophisticated ATMs. Both the recently loosened policy on the release of licenses to third-party payment service providers and the announcement of mobile payment standards has fueled the tremendous growth in mobile wallet in China. In terms of the market share in 2016, Alipay has a dominant mobile wallet market share of 82.8%; Tenpay has 10.6%, Lakala 3.9%, and other smaller mobile wallet companies 2.7% [16, 84]. Banks in China have also been rolling out their own mobile wallet, further contributing the growth of mobile wallet in China. There is expected to be over 300 million mobile payment users in China, contributing to $34 billion in sales by the end of 2016.

Prior research has found that Chinese consumers may be motivated by different factors for their continuous use and shopping behavior. For example, Chinese consumers have been found to be extremely price sensitive [29]. In fact, Mueller [70] found that Chinese consumers are motivated by different factors than American consumers, for example, Chinese consumers were more interested in brand, whether a product has high levels of social approval, and whether a product is fashionable. With regard to mobile apps, high prices of mobile carrier services and mobile wallet application use incentives have led to switching behaviors among Chinese consumers [44, 58]. Many Chinese consumers in the mobile phone service sector are more sensitive to price, which may be consistent with the differences in the living standards between the West and China. Chen, et al. [20] found that to facilitate continuous use, mobile commerce companies need to motivate Chinese consumers by offering incentives, such as offering mobile wallets with no-fee, instant money transferring between different accounts, and multiple accounts including payment accounts, bank accounts, and investment accounts, and so forth [81]. For this reason, Alipay and other mobile wallet companies have started offering incentives to mobile wallet consumers, such as reward points, cash back, supermarket/merchandise discount coupons, and even taxi cash back. In general, to be competitive, mobile wallet in China often provides additional, multiple functions, such as transferring of money to/from the mobile wallet, refilling prepaid mobile/online services, paying daily bills, investing and financing, bookkeeping functionality, and downloading and use incentives.

While the growth of Chinese mobile financial applications (apps) market has been rapid, we know little about why Chinese consumers choose to continually use the mobile financial app they have adopted. Thus, this research investigates factors that motivate Chinese consumers to continuously use financial apps for mobile wallet and online shopping. Such research is critical given the increasing competition among mobile wallet vendors in China, as well as the possible uniqueness of Chinese consumers in such markets. Adopting the dual-factor model of relationship maintenance in consumer research proposed by Bendapudi and Berry [11], the study examines the effects of dedication-based factors including perceived value, perceived enjoyment and personal

innovativeness, and constraint-based factors including switching costs and habit on continuance intention to use mobile financial apps. Past research has found that some drivers attribute to mobile wallet adoption such as affordability, accessibility, compatibility, effort or ease of use, experience, perceived playfulness, perceived usefulness, service quality, safety concerns, social influences and technical support. Each of these drivers describes a different adoption motivation, and appears in multiple studies examining the Internet and mobile technology adoption [6]. From the relationship maintenance point of view, we argue that the drivers such as affordability and perceived playfulness indicate collective values judged by consumers, whereas the drivers such as compatibility, effort and ease of use present the cost of switching for consumers, and the drivers such as experience may contribute to use habit.

In addition, past research found that unique functions of mobile applications drive the success of mobile wallet apps [88]. Especially, in China, leading mobile wallet apps also include social media functions such as mobile web surfing, mobile learning, gaming and entertainment, and online chatting, texting and social networking. Moreover, Smartphones and mobile wallets might be now considered not merely as "technology," but also as fashion items or as necessary tools for daily life in China. Consequently, having fun and trying out new things might also be salient dedication-based factors for Chinese consumers for continually use of their mobile financial apps. Loyalty and satisfaction are two most prominent factors for maintaining customer relationship and consequent repeated purchase in the marketing literature [7, 35, 52, 78]. The two factors are also the central conduit that connects dedication-based and constraint-based factors to repeated consumer behavior or continuous intention. Thus it would be revealing to understand if the two factors can significantly impact continuance intention in the current research context. The key research question addressed in this study is: What key dedication-based and constraint-based factors drive continuance intention with mobile financial apps by Chinese consumers? This research provides a deeper understanding of consumers' continuance intention of mobile wallet apps in China. From a managerial perspective, it is important to understand how specific factors influence the use of mobile technologies, and ultimately consumers' decisions, as business planning in a specific market resulting from such an analysis. From a consumer perspective, it is important to ascertain the specification of consumer factors related to continuance intention with mobile financial apps.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Based upon empirical studies, and in particular information systems and marketing literature, we analyzed the impact of satisfaction and loyalty on the continuance decision of consumers. We have developed a conceptual model, shown in Figure 1, for research based on the dual-factor model. The research model and each of the constructs are discussed below, as well as the hypotheses that were developed. The summary of literature review can be found in Appendix A.

Dual-Factor Model and Continuance Intention

Continuance intention refers to the level of the strength of one's intention to continuously perform a specified behavior. It is a proxy of actual continuous use of an information system or technology. Limayem, et al. [62] defined continuance as a form of post-adoption behavior. In this study, continuance intention with the mobile financial app is defined as the level of strength of an individual's intent to make a purchase repeatedly via a financial mobile app. It is a proxy of actual continuance behavior and the individual's perceptions on the likelihood that he/she will engage in continuance behavior [59, 60]. Hedman and Henningsson [40] and Dahlberg, et al. [32] argue that mobile payments involve a large ecosystem and that an individual consumer's propensity to continuance or continue to use mobile apps that enable mobile purchasing involves a complexity of constructs [43]. Thus, continuance intention is an essential topic in post-adoption research in the context of mobile commerce. In such research, we need to investigate consumers' continuous use behavior after initial adoption [48]. Such research is even revealing in the current research context given mobile financial markets are still emerging and keeping consumers to continuously use the app and not to switch another vendors is challenging [73. 92, 100]. With this attempt, it is critical to look for the factors in relationship maintenance of consumer research since continuance intention involves reasoned and conscious use that requires long-term relationship [14, 15].

The dual-factor model of relationship maintenance in consumer research was proposed by Bendapudi and Berry [11] and further discussed by other scholars [47, 48] to help us understand and manage consumers' post consumption experiences. The dual-factor model suggests both the dedication-based and

constraint-based perspectives to study and explain consumer's loyalty, satisfaction and consequent relationship maintenance, in our case, continuance intention. The dedication-based factors examine consumers' genuine motivations to maintain the relationship. Satisfaction is the center of dedication and commitment, while perceived value is the foundation for such dedication and commitment [11, 48]. However, perceived value only explains extrinsic motivation in relationship maintenance. We thus extend the dedication-based factors to include perceived enjoyment and personal innovativeness that contribute to intrinsic motivation in relationship maintenance with mobile financial apps.

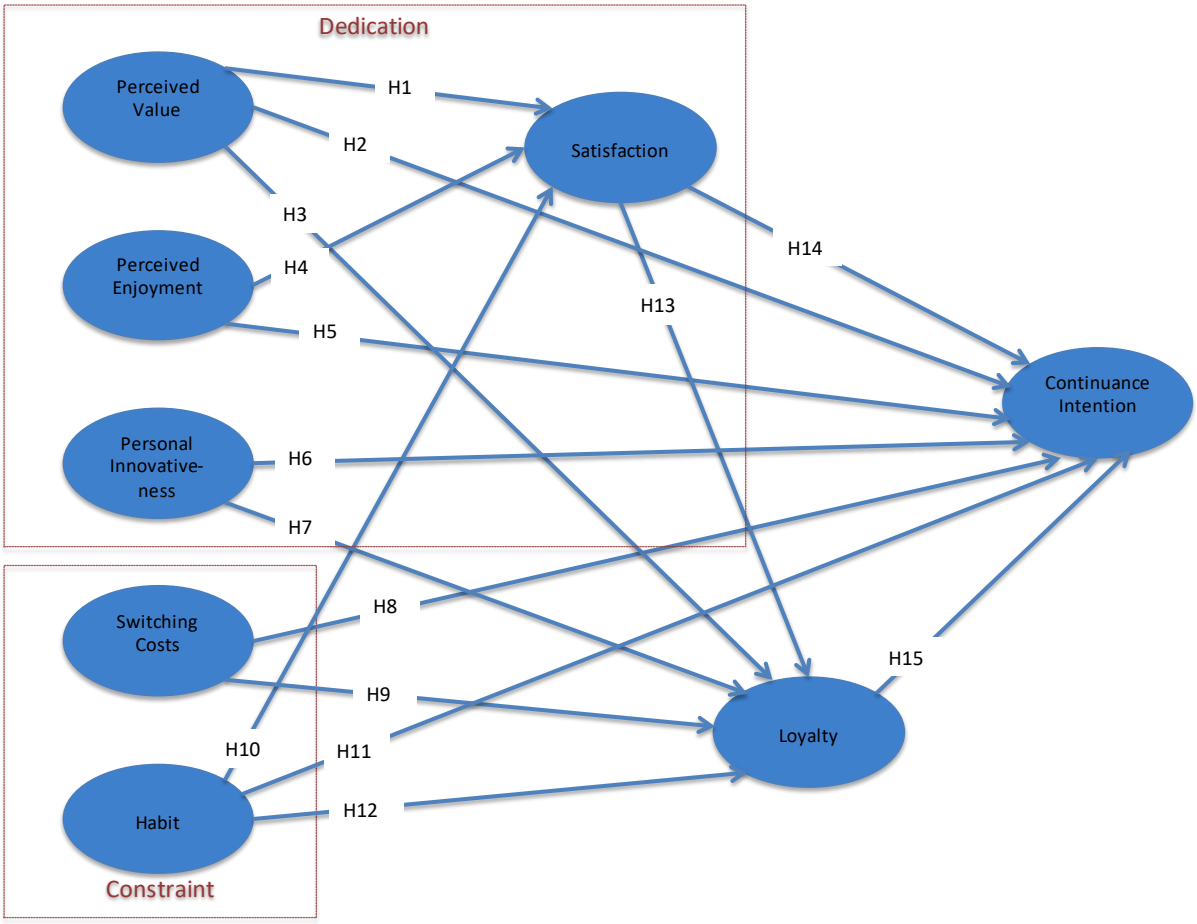

Figure 1: Conceptual Model for Study

The constraint-based perspective of the dual-factor model argues that constraints may prevent consumers from seeking alternatives and keep the status quo [11, 48]. Switching cost is a main constraint discussed in the dual-factor model. We add habit into the constraint-based factors because habit indicates consumers' strong motivations to maintain the status quo and habitual use. Moreover, we also integrate the dual-factor model with the literature concerning continuance intention and apply the model to the context of continuance intention of mobile financial application, as we consider loyalty and continuance intention is a form of relationship maintenance. The constructs and corresponding hypotheses in the research model were further discussed below.

Perceived Value

Perceived value is basically used as an extension of comparative level of alternative relationship factor in social exchange theory and investment models [57].

Perceived value is an aggregated value perception of a consumer who collectively judges the quality value, purchase value, efficiency value, and other extrinsic and intrinsic value of a product or service [74]. Perceived value is a belief that guides actions and judgments across objects and situations. A component of perceived value is usefulness, which is the total value a consumer perceives from using a new app [46]. From the social exchange point of view, perceived value is a consumer's overall assessment of the utility of a product or service based on perceptions of what is received versus what is given. In other words, perceived value is the trade-off between what consumers receive, such as quality, benefits, and utilities, and what they sacrifice, such as price, opportunity cost, transaction cost, time, and efforts [30, 45, 52]. Wu et al. [93] link perceived value to the concept of consumer surplus in economics, expressed as the difference between the highest prices that consumers are willing to pay for a product or a service and the amount practically paid. Zhou and Lu [99], Amoroso and Ogawa [6], and Amoroso and Lim [4] found a strong relationship between perceived value and satisfaction in a study of switching costs' impact on continuance intention. In a study examining the confirmation of perceived value, Lankton and McKnight [54] found a strong relationship to satisfaction, where satisfaction leads to continuance intention. In a study over two time periods, Lowry, et al. [66] found the fulfillment of intrinsic and extrinsic value expectations predicts satisfaction [66]. When it comes to the current research context, financial mobile apps provide various values to consumers, such as time saving, money saving, convenience, and even fun (e.g. Alipay's lucky draw). Some functions of financial mobile apps, such as mobile wallet, give consumers instant gratification. Finding great deals and shopping with financial mobile apps are even fun and give consumers a greater level of satisfaction.

H1: *The greater the degree of perceived value, the greater the consumer satisfaction with using mobile financial apps.*

Value is a driver for continuous intention. Thus, the strong relationship between perceived value and continuous intention to use was found in various technology adoption contexts, e.g. in mobile commerce adoption [33] and in branded apps adoption [74]. Such strong relationships indicate the fulfillment of consumers' overall value perceptions that depend on various types of perceived value, which includes different components: perceived quality value, perceived acquisition value, perceived efficiency value, and perceived emotion value [74]. Such fulfillment facilitates intention. Post-adoption research further points out that such fulfillment is also instrumental in determining continuance intention [14, 77]. Chen, et al. [22] found both hedonic value from entertainment and functional values from usefulness determine users' continuance intention. Recker [80] found a strong direct relationship between perceived usefulness and continuance intention. The strong association between perceived value and continuance intention were also found in various research contexts [14, 39, 46, 77]. For example, Sun et al. [85] found a strong relationship between perceived value and intention to continue, in a longitudinal study of the adoption stage and post-adoption stage. In the current research context, when consumers perceive they gain values from the mobile financial app use, they may want to continuously gain such values via continuous use, e.g. continuously experiencing convenience, money saving, and fun.

H2: *The greater the degree of perceived value, the greater the continuance intention with mobile financial apps.*

Part research also found that perceived value is a salient determinant of customer loyalty since perceived value confirms value expectations of consumers [14, 64]. For example, Anderson and Swaminathan [7] and Deng, et al. [34] found a relationship between perceived value and consumer loyalty. In a study looking at the consumer satisfaction with smartphone apps, Shin [83] found a strong relationship between perceived utility and both satisfaction and customer loyalty. Simply put, high perceived values indicate a high level of confirmation and thus leads to commitment and loyalty. When using a mobile financial app, if consumers' perceptions about its values are confirmed, they have a strong desire to maintain their current relationship with the app, and develop a deep commitment to rebuy via the app.

H3: *The greater the degree of perceived value, the greater the loyalty with using mobile financial apps.*

Perceived Enjoyment

Perceived enjoyment is the degree to which an individual perceives using mobile apps as enjoyable, in addition to utility outcomes related to the use of mobile apps [67]. When consumers feel joy by using financial mobile apps, they are intrinsically rewarded and thus satisfied. Enjoyment indicates an intrinsic motivation that has profound inner impact on consumer satisfaction and continuous intention. When a consumer is intrinsically motivated, he/she tends to repeat the prior behavior in order to re-experience the same joy and satisfaction he/she had before. Good past transaction experience can directly manifests as customer satisfaction. In our context, consumers tend to shop again with the financial mobile apps to have more fun and satisfaction. In a study

examining enjoyment over two time periods, Lowry, et al [65] found a strong relationship between enjoyment and satisfaction. Kim, et al. [47], Cheong, et al. [24], Lee and Shim [56], and Oghuma, et al. [72] also found such a strong relationship between perceived enjoyment and satisfaction. These results indicated that hedonic effect, such as enjoyment, is as critical as utilitarian, performance-related effect, such as perceived usefulness, in influencing consumer satisfaction.

> ***H4:*** *The greater the degree of perceived enjoyment, the greater the consumer satisfaction with using mobile financial apps.*

Consumers generally are more likely to return to a site if their shopping experience is enjoyable. Perceived enjoyment and perceived usefulness were found to be directly related to the consumer intention to return [50]. Prior research also found that enjoyment along with perceived ease of use, perceived usefulness, and subjective norm, has a significant impact on consumers' attitude toward mobile commerce and mobile communication, which in turn has an effect on mobile technology use intention for shopping [46]. Chong found that perceived enjoyment was an important factor for continued use intention and actual m-commerce usage was related to the perceived enjoyment, initial expectation of perceived cost, and trust [27]. They expanded the enjoyment construct by integrating it with TAM and showed that in the context of m-commerce, it is important to move beyond performance-oriented beliefs such as perceived usefulness to include non-performance related beliefs such as enjoyment, pleasure, and fun. Dai and Palvia in a study comparing Chinese and US consumers in their use of mobile commerce adoption found a strong relationship between perceived enjoyment in the US sample but not in the Chinese sample, suggesting cultural differences [33]. They found a dual relationship with perceived enjoyment to intention and perceived enjoyment as moderated by perceived usefulness to intention. Lowry et al., Chen at al., Cheong et al., and Oghuma et al. all found a strong direct relationship between perceived enjoyment and continuance intention [22, 24, 66, 72]. In China, leading mobile financial apps, such as AliPay and Webchat pay, were built upon their social media platforms. Fun, enjoyment, and entertainment are important features of those apps in addition to their utilitarian, performance-related features. Thus, we argue that perceived enjoyment is a critical driver for consumers to continue their use behavior for the app instead of using other alternative payment methods.

> ***H5:*** *The greater the degree of perceived enjoyment, the greater the continuance intention with mobile financial apps.*

Personal Innovativeness

Personal innovativeness is defined as a degree to which an individual is willing to explore new functionality and other aspects of emerging technologies [19, 97]. Innovativeness is a psychological and cognitive force that motivates people to try out innovations. Bhattacherjee et al. [15] defined personal innovativeness as one's propensity to try out or experiment with new technologies. They found that individuals who are highly innovative and enjoy experimenting with a new product or service are often open to new functionality of the product or service. Not surprisingly, Chen and Dai [19] found a link between personal innovativeness and continuance intention in the context of m-commerce. Other research [6] also found that innovativeness as a strong psychological and cognitive force playing an important role in determining consumer acceptance.

> ***H6:*** *The greater the degree of consumer innovativeness, the greater the continuance intention with mobile financial apps.*

Financial mobile apps are relatively new technologies with constant changes and innovations. We argue that innovative users are more likely to enjoy the instant gratification and convenience brought by financial mobile apps. They will continue to use the app and demonstrate loyalty to it once they adopt it because they want to prolong their experience of instant gratification and convenience with the app. Moreover, personal innovativeness is an indicator of confidence and efficacy with the new technology. Consumers with high level of innovativeness tend to enjoy more the bright side of new technology and have less psychological anxiety and fear of trying new functionality. They welcome new features and functions in new technology and try them out [19, 97]. The soaring excitement of trying-out brings those consumers great satisfaction and attracts them coming back. Those consumers are more likely to be loyal to the innovator who keeps bringing new innovations to them. Apple fans are a good example. Many Apple fans are early adopters of Apple new product and technology and demonstrate strong continuance intention and loyalty [34]. Many adopters of mobile financial apps are still earlier adopters who often show great interests in trying out new features and functions of the app. Their ability to use the "fancy" app could give them a feeling of being fashion or novel. Such favorable feeling pushes adopters to keep coming back and being loyal [19, 74].

> ***H7:*** *The greater the degree of consumer innovativeness, the greater the loyalty with using mobile financial apps.*

Switching Costs

Switching costs are regarded as the transition costs that incur when a consumer switches from one product to another. These costs not only include financial costs such as new software cost and breaking contract fee, but also psychological costs such as time, effort, learning curve and uncertainty when switching to a new provider. Bhattecherjee, et al. defined switching occurrence as when consumers are dissatisfied with their current choice and are aware of substitute choices as potential replacements for their current choice [15]. Switching costs were found to have a positive impact on continuance intention because switching costs make switching to alternatives difficult for consumers [47, 57, 99]. Switching costs also were found to increase consumers' propensity to continue use a service [58].

H8: *The greater the degree of switching costs, the greater the continuance intention with mobile financial apps.*

Therefore, maintaining high switching costs has long been a critical management strategy to keep consumers loyal. To increase consumer loyalty, many companies provide consumer loyalty programs. This means if a consumer switches, losing those loyalty benefits adds extra switching costs. Lam et al. argued part of switching cost may involve loyalty benefits that have to be given up by a consumer when his or her relationship with the service provider ends [53]. Past research found a strong relationship between switching costs and loyalty [4, 21]. Given the fierce competition among mobile financial apps in China, it is very common that many finical mobile apps in China, especially leading ones, use the same strategy and provide loyalty benefits such as coupons, discounts, points to their loyal consumers. Such programs increase consumers' switching costs. Since Chinese consumers in general are more sensitive to cost and price, high switching costs ensure that they keep coming back and make them loyal since they want to continuously enjoy more loyalty benefits.

H9*: The greater the degree of switching costs, the greater the loyalty with using mobile financial apps.*

Habit

Habit is defined as the extent to which people tend to perform behaviors automatically because of learning and showed that users who have been using a certain technology for some time period are predisposed to continue to use it in an automatic and unthinking manner [5, 61, 62]. Because of habit, users are less likely to switch to a new technology. Wood and Neal defined habit as automatically repeating past behavior with little regard to current goals and valued outcomes [92]. Prior research also found that past online behaviors has a strong and significant effect on continued usage, and initial use can significantly impact future repeated use [23, 91]. Furthermore, habit indicates consumers' needs and expectations are currently met and they are stratified with what they currently get. Under this circumstance, past research found that, consumers with habitual use are likely to be a retuning consumer and show loyalty and high satisfaction [27]. The strong relationship between habit and satisfaction was indeed confirmed by past research [64]. Previous research also found that habit is not simply about a bias to the status quo: it may be a combined cognitive-behavioral-affective process where consumers, in iterative fashion—bind themselves to the status quo by justifying actions that minimize change, consciously discount new systems despite their effectiveness, and emotionally believe they are happier and more comfortable with incumbent systems [76]. So habit is associated with emotional affect that manifests as satisfaction.

H10: *The greater the degree of habit, the greater the consumer satisfaction with using mobile financial apps.*

By the same token, if financial mobile app users demonstrate habitual use, it is a sign that users' needs and expectations are met. In addition, financial mobile apps in China reward loyal consumers, and therefore consumers tend to resist changes and lock in the current service to get more values from the service as being loyal. Prior research confirmed that habit impacted consumer loyalty for mobile applications [4]. Kim et al. found a strong relationship from habit through perceived switching costs to continuous intention [47]. Wilson, Mao, and Lankton found a strong relationship between habit strength through performance expectancy, a construct they defined as close to perceived quality, to continuance intention [90]. Generally speaking, habit indicates that users are content with past behavior and thus willing to continue it.

H11: *The greater the degree of habit, the greater the continuance intention with mobile financial apps.*

By the same token, if financial mobile app users demonstrate habitual use, it is a sign that users' needs and expectations are met. In addition, financial mobile apps in China reward loyal consumers, and therefore consumers tend to resist changes and lock in the current service to get more values from the service as being loyal. Prior research confirmed that habit impacted consumer loyalty for mobile applications [4].

H12: *The greater the degree of habit, the greater the loyalty with using mobile financial apps.*

Consumer Satisfaction

Satisfaction is defined as the cumulative feelings that a consumer has developed during repeated interactions with a service, product, or vendor. In other words, satisfaction is an outcome evaluation based on past exchanges with the service, product, or vendor, especially based on the exchanges being the most positive and influential [35, 100]. Satisfaction is a central dedication-based factor and determines continuance intention [5, 79, 95]. From the expectations-confirmation perspective, satisfaction indicates that consumers' needs are met and their expectations are confirmed. The confirmed expectations promote consumers to repeat their past [28]. Bhattecherjee, et al. found that users' intention to continue or discontinue using a technology is based on the extent to which they are satisfied with using that technology. Satisfaction is based on the user's direct, first-hand experience with using the technology [15]. Peng et al. found that customer retention was influenced greatly by customer satisfaction among Chinese consumers [75]. A satisfied mobile financial app user has made his/her overall assessment on the quality, functionality, and service of the app and concluded satisfaction judgments. It can be argued that such satisfaction judgments lead affective emotional to the app and consequently continuance intention to use the app.

> ***H13:*** *The greater the degree of consumer satisfaction, the greater the continuance intention with mobile financial apps.*

Satisfaction was found to be key to online retailers to keep online consumers loyal [6]. A larger number of studies [10, 49, 69, 83] showed that satisfaction, as a favorable feeling a consumer has for a product or services, determines loyalty. For example, Kim and Xu investigated the impact of satisfaction on loyalty in the context of electronic commerce and found a significant link between e-satisfaction and e-loyalty [49]. Similarly, Methlie and Nysveen studied the loyalty of online banking consumers and found that consumer satisfaction, followed by brand reputation, had the most significant impact on loyalty [69]. By the same token, satisfaction with a mobile financial app leads the user's desire to maintain his/her interaction with the app and commit to the use of it since he/she may have developed affective feeling to the app and thus being loyal.

> ***H14:*** *The greater the degree of consumer satisfaction, the greater the loyalty with using mobile financial apps.*

Loyalty

Loyalty is a type of commitment behavior and is developed as the vendor has earned the trust of the consumer [63]. Prior research found that consumers trusting an online vendor are more likely to have intentions to share their personal information with the vendor and allow the vendor to personalize products and services for them [86]. A loyal consumer not only continuously come back to the vender but help the vendor win fierce competition and sustain long-term growth through word-of-mouth [79]. Past research also found that loyalty is an indicator of continuance intention and an important construct in the context of online financial transactions [14, 31]. Holland and Baker (200l) developed an e-business marketing model and found that creating brand site loyalty leads to behavioral and attitudinal outcomes from consumers, such as repeat visits of, strong support of, and favorable attitude toward the website [41]. Loyalty was found to enhance satisfaction and increase repeated use intention of online consumers [1, 3, 5]. Similarly, in China, loyal customers of a mobile financial app not only frequently repeatedly use it for mobile wallet and shopping, but promote it in their friend circle on the social media and share their favorable use experience with others. Thus, we propose:

> ***H15:*** *The greater the degree of loyalty using mobile financial apps, the greater the continuance intention with mobile financial apps.*

METHODOLOGY

Construct Operationalization

We operationalized theoretical constructs for mobile wallet apps by using validated items from prior research Working from prior research [1, 5], we used the scales from that research. We derived measures primarily from the research of Bhattercherjee [14], Limayan and Cheong [60] and Limayan et al. [62] for continuance intention, habit and satisfaction, Bhattercherjee, et al. [15] and Dai and Palvia [33] for personal innovativeness, Lam et al. [53] and Kim and Son [48] for loyalty and switching cost, Lowry [65] for perceived enjoyment, and Kuo et al. [54] and Peng et al. [74] for perceived value. Appendix A shows the studies that were used for key references and deriving scales. A survey instrument (see Appendix B) was developed to measure the continuous intention of mobile wallet apps by Chinese consumers. We ensured content validity of the scales by having the items selected represent the construct about which generalizations are to be made. In order to explore the factors affecting Chinese consumers' continuance intention by using mobile financial apps, a survey questionnaire was developed in English and was then translated into Chinese by Chinese experts. The Chinese survey then was pre-tested and we

reevaluated these items to eliminate those that appeared redundant or ambiguous based on the experts' feedback.

Data Collection

The survey was administered through the SurveyMonkey. The survey link was sent to different universities in China. The snowball sampling approach was used to collect data where students posted the survey link on their social media accounts asking potential respondents to complete the survey completely. Kosinski, et al. stated that the positive feedback loop leads to self-sustaining studies with rapid growth in sample size [51]. Social media samples provide an inexpensive and relatively high-quality alternative for collecting data [9]. Given enough participants, the representativeness of the population can be improved, coming close to true randomization [51]. Benefits from snowball sampling include increasing the sample size and determining respondents yet unknown [8]. They found that snowball sampling might be applied as a more formal methodology for making inferences about a population who might be difficult to locate. In fact, snowball sampling using social media may yield respondents that would never have been targeted using traditional data collection techniques [87].

To ensure the survey can reach a broad consumer population, the survey link was also posted in QQ, WeChat, and other personal social media Web pages by Chinese professors and students who voluntarily distributed the survey link as requested by the research team. A total of 1,311 responses were collected and 1,176 responses were deemed effective (89.7%), in that all survey questions were answered. Table 1 summarizes the demographic profile of the respondents. As shown in Table 1, over 60% of the respondents were male and about 70% are within the age range of 18 to 25. 54% of the respondents have a bachelor's degree and about 60% reported an income level below 2000 Yuan per month.

Table 1: Respondent Profile

Demographic Profile		Number	Percentage
Gender	Male	713	60.6
	Female	463	39.4
Age	under 18	12	1
	18-20	399	33.9
	21-25	446	37.9
	26-30	100	8.5
	31-35	94	8
	36-40	58	4.9
	over 40	67	5.7
Educational level	High school	84	7.1
	2-year college	211	17.9
	Bachelor's degree	633	53.8
	Master's degree	185	15.7
	Doctorate degree	63	5.4
Income level	<CNY2000	704	59.9
	CNY 2000-4000	154	13.1
	CNY 4000-6000	143	12.2
	CNY 6000-8000	50	4.3
	CNY 8000-10000	64	5.4
	CNY10000-20000	45	3.8
	CNY 20000	16	1.4

Table 2 illustrates the financial apps were used as reported by the respondents in this study. Almost 70% of Chinese consumers reported using financial apps on their mobile device to purchase goods and services online. This is similar to the findings of the China Internet Watch that 60% of China's rural Internet users are online shoppers; 65% of the respondents reported music downloading and game playing, also consistent with the findings of the China Whisper report [26]. We argue that this can be explained by the fact that 80.3% of our respondents are between 18 to 30 years old. People at these ages like fashion, music, computer games, and are more likely to spend money on these. About 56% of the respondents reported using mobile financial apps to pay bills and 50% reported transferring money, while only 35% of the respondents reported using online banking.

Table 3 illustrates the main telecommunication carriers reported in our Chinese study. Our sample shows that 39% of the respondents used China Mobile and about 25% used China Telecom and 23.5% of respondents used China Unicom, mirroring the population market share of the three companies in China [84]. However, China Mobile is slightly under-represented in our survey sample.

Table 2: Mobile Financial Apps

Usage	Number	Percentage
Make purchase	816	69.4
Use for entertainment	760	64.6
Pay bills	654	55.6
Transfer money	592	50.3
Load money	586	49.8
Check balances	556	47.3
Do online banking	415	35.3

Table 3: Telecom Carriers in China

Carrier	Number	Percentage
China Mobile	461	39.22
China Telecom	300	25.49
China Unicom	277	23.53
Other	138	11.76

DATA ANALYSIS AND RESULTS

Measurement Model Analysis

We conducted the data analysis to first check construct validity which is established when the composite factor reliability (CFR) of the construct is greater than the cutoff value of 0.7 and the Cronbach's α of the construct is greater than the threshold value of 0.7 [68]. As shown in Table 4, all CFR values and Cronbach's α values were greater than 0.7 with a range from 0.772 to 0.926, and 0.771 to 0.925 respectively.

The average variance extracted (AVE) estimate, which measures the amount of variance captured by a construct in relation to the variance due to random measurement error, ranged from 0.628 to 0.759. Discriminant validity requires that the square roots of the AVE should be greater than correlation between two constructs. We calculated the square roots of the AVE and compared with each correlation scores and we found that with all constructs the AVE was greater than the correlations between the constructs, indicating that all the constructs share more variances with their indicators than with other constructs. Thus, our measures exhibited sufficient discriminant validity.

Discriminant validity is further established when the indicators of the construct are loaded to the construct as intended. The measurement model was then generated using Amos 24. All the factor loadings of the measurement items were greater than 0.7 with p-values<0.001. The CFI (comparative fit index) was 0.959, GFI (goodness-of-fit index) was 0.919, and NFI (normed fit index) was 0.948, all above the recommended threshold of 0.9 [12, 13, 42]. RMSEA (root mean square error of approximation) was 0.056, below the threshold of 0.06 [17]. The results supported the measurement model.

Table 4: Reliability Statistics

Construct	CFR	AVE	Cronbach's α	Inter-item correlations							
				1	2	3	4	5	6	7	8
1. Perceived Value	0.918	0.692	0.921	0.832							
2. Enjoyment	0.926	0.759	0.925	0.603	0.871						
3. Innovativeness	0.772	0.628	0.771	0.387	0.708	0.792					
4. Switching Cost	0.821	0.707	0.845	0.551	0.695	0.597	0.841				
5. Habit	0.895	0.681	0.894	0.629	0.721	0.596	0.827	0.825			
6. Satisfaction	0.899	0.749	0.899	0.715	0.787	0.562	0.744	0.818	0.865		
7. Loyalty	0.871	0.693	0.854	0.637	0.776	0.658	0.766	0.797	0.821	0.832	
8. Continence Intention	0.866	0.683	0.863	0.693	0.786	0.719	0.711	0.794	0.815	0.779	0.826

Structural Model Analysis

After confirming the fit of the measurement model, the casual model was estimated and mediation was estimated using 1000 re-samples for indirect effect [68] The criterion for mediation was the identification of a statistically significant indirect effect of the predictor on the outcome, rather than a significant decrease in the direct effect [25, 55, 82]. The CFI was 0.957, GFI was 0.917, and NFI was 0.947, all above the recommended threshold of 0.9 [12, 13, 42]. RMSEA was 0.047, below the threshold of 0.06 [17]. The results supported a good model fit of the causal model.

The resulting final structural equation model is shown in Figure 2 where 14 of the 15 hypotheses were supported with the path coefficients significant at least at the 0.05 levels, except H15. Perceived value was found to have a positive, significant impact on satisfaction, continuance intention, and loyalty with the path coefficients of 0.25 ($p<0.001$), 0.22 ($p<0.001$), and 0.34 ($p<0.001$) respectively. The findings confirmed our hypotheses that when consumers have high value perception on the mobile app for financial services, they demonstrate high satisfaction with (H1) and loyalty to the app (H3). They also have strong intention to continuously use the app for mobile financial services in the near future (H2). The results showed that the paths from perceived enjoyment to satisfaction (H4) and continuance intention (H5) were significant with the path coefficients of 0.44 ($p<0.001$) and 0.34 ($p<0.001$) respectively, indicating that enjoying using a mobile app for financial services could significantly increase consumers' satisfaction with and continuous use of the app.

The results also showed that personal innovativeness has positive, significant effects on continuance intention with the path coefficients of 0.47 ($p<0.001$) on continuous intention (H6), and on loyalty with the path coefficient of 0.20 ($p<0.01$) (H7). The results further supported H8, with the path coefficient of 0.12 ($p<0.01$) and H9 with the path coefficient of 0.19 ($p<0.001$), showing that switching cost is another reason that makes consumers keep coming back and being royal. The coefficients for the paths from habit to satisfaction, to continuance intention, and to loyalty were 0.44 ($p<0.001$), 0.29 ($p<0.001$), and 0.14 ($p<0.05$) respectively. Thus H10, H11, and H12 were supported, indicating that consumers' habitual use of a mobile app for financial services can increase their satisfaction with and loyalty to the app as well as continuance intention. As hypothesized, satisfaction was found to have positive, significant effects on continuance intention with a path coefficient of 0.22 ($p<0.001$) (H13), and on loyalty with the path coefficient of 0.33 ($p<0.001$) (H14). However, our results didn't support H15 that hypothesizes the relationship between loyalty and continuance intention.

Moreover, perceived value, habit and perceived enjoyment together explained 77.2% variance of satisfaction, perceived value, innovativeness, habit, switching cost, and satisfaction jointly explained 77.5% variance of loyalty, and perceived value, perceived enjoyment, habit, innovativeness, switching cost, satisfaction, and loyalty together explained 80.08% variance of continuance intention. The high values of variance explained indicate that the research model has good explanation power.

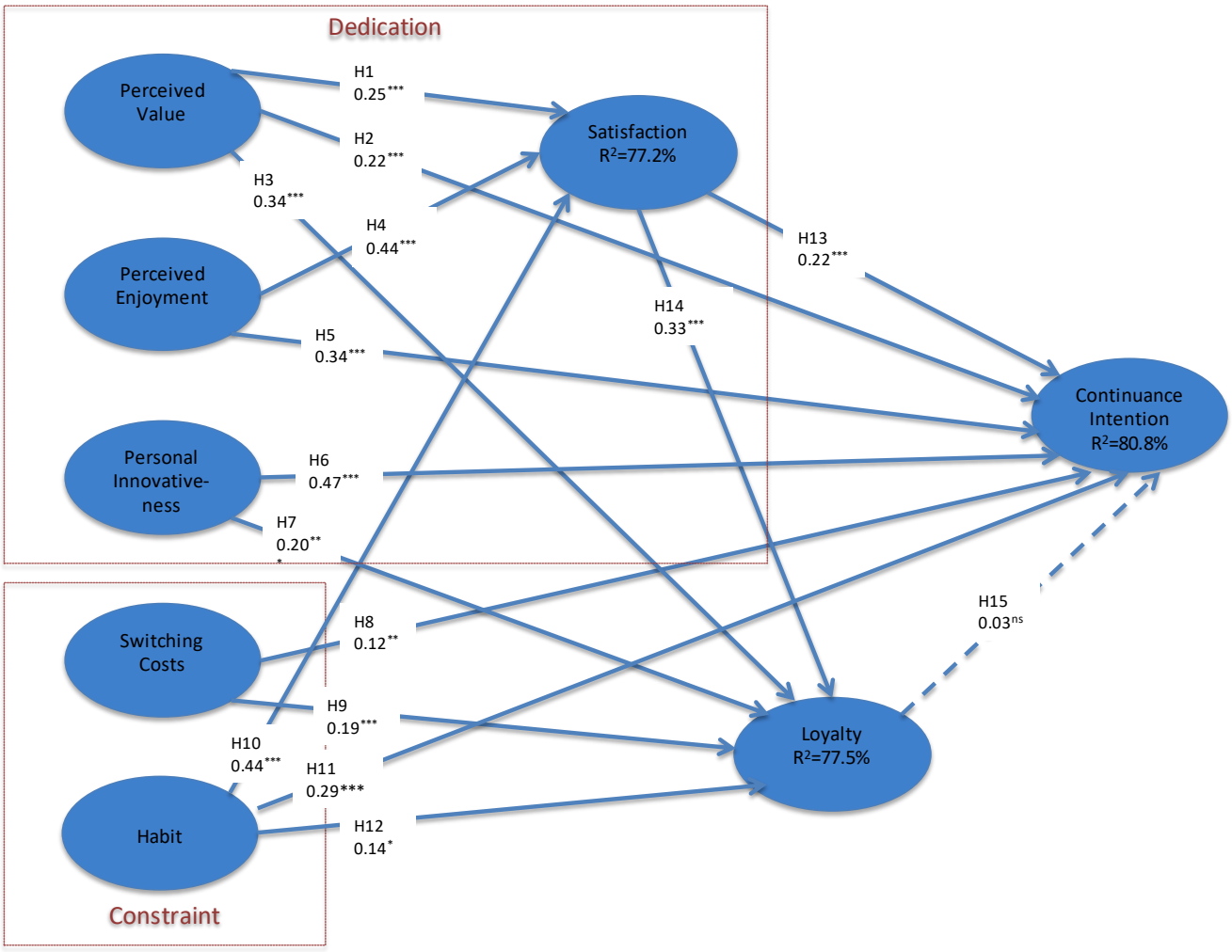

Figure 2: SEM Results Model

Mediation Effects

Using Amos 24, we ran the predictive SEM model and produced the indirect, direct and total effects. Cheung and Lau and Changya and Wang recommended the generation of 1,000 bootstrap samples in order to determine the type 1 error rate [18, 25]. The results of the bootstrapping procedures estimate the standard error and potential biases of each path. After examining the standardized indirect effects, we examined the two-tailed significance (BC) for both the lower bounds and upper bounds at a 95% bootstrap confidence interval [55].

Table 5 shows the path relationships, direct and indirect effects and whether there was significance related to the mediation effect. Regarding the mediating effect of perceived value on continuance intention, there is a partial mediation by satisfaction, which means satisfaction counts for some, but not all of the relationship between perceived value and continuance intention. Regarding the mediating effect of perceived enjoyment on continuance intention, it is partially mediated by satisfaction, which means satisfaction counts for some, but not all the relationship between perceived enjoyment and continuance intention. Regarding the effect of habit on continuance intention, it is partially mediated by satisfaction, which means satisfaction is counting for some, but not all the relationship between habit and continuance intention. Therefore in all cases, satisfaction acted as a mediator variable between the three dedication constructs and continuance intention.

Looking at the analysis of loyalty as a mediator variable, we first looked at the effect of perceived value on continuance intention through loyalty and found that loyalty does not mediate the path showing that perceived value has a direct effect on continuance intention. Regarding the mediating effect of personal innovativeness on continuance intention, there was no mediation meaning that personal innovativeness has a direct effect on continuance intention. Regarding the mediating effect of switching costs on continuance intention through loyalty, there was no mediation; therefore we concluded that switching costs has a direct effect on continuance intention. Finally, we looked at the path from habit through loyalty to continuance intension and also did not find a mediating effect.

Table 5: Mediation Tests

Relationship	Direct effect without mediator	Direct effect with mediator	Significance of indirect effect	Mediation Effect?
Perceived Value-->Satisfaction-->Continuance Intention	.264***	.207***	**	Yes
Perceived Enjoyment-->Satisfaction-->Continuance Intention	.202***	.118**	**	Yes
Habit-->Satisfaction-->Continuance Intention	.326***	.243***	**	Yes
Habit-->Loyalty-->Continuance Intention	.326***	.292***	0.977	No
Switching Costs-->Loyalty-->Continuance Intention	-.021ns	-.043 ns	0.983	No
Innovativeness-->Loyalty-->Continuance Intention	.291***	.357***	0.982	No
Perceived Value-->Loyalty-->Continuance Intention	.264***	.245***	0.984	No

*Note: ***: p<0.001; **: p<0.01; *:p<0.05; ns: insignificant.*

DISCUSSION

Major Findings

Table 6 shows the degree of support for each of the hypotheses. We found that Chinese consumers put a major emphasis on perceived value of the mobile financial apps, with strong path coefficients to satisfaction and continuance intention. The findings indicate that Chinese consumers are value-driven and the overall value provided by mobile financial apps is fundamental to attract them to coming back to purchase again. Perceived value was also a predictor of loyalty. Moreover, we found that the new dedication-based factors, which examine the intrinsic motivations of Chinese consumers, play an even stronger role in predicting satisfaction, loyalty and continuance intention.

Personal innovativeness was found to be a strong predictor of continuance intention and loyalty. The possible explanation for this is that the competition of mobile financial apps market has been fierce in China. So the acquisition of mobile apps is very easy for Chinese consumers, most of the time, at no cost. However, using apps requires a relatively high degree of personal innovativeness, given new features constantly added into apps. Our findings showed Chinese consumers appreciated innovations such as new functions and features of mobile financial apps and such appreciation leads to high continuance intention and loyalty. Perceived enjoyment also strongly predicted both satisfaction and continuance intention among Chinese consumers. This also means that Chinese consumers had to have fun in using the mobile app to form their perception of satisfaction, which, in turn, increases their intention to use the app repeatedly. These are new findings that show Chinese consumers pursue joy and excitement when using mobile financial apps to purchase.

However, loyalty was not predictive in understanding continuance intention with Chinese consumers. One reason, we believe, is that Chinese consumers are looking for bargains when using the mobile wallet to purchase online products and/or services. Another reason is that the competition within the mobile financial apps market in China has been fierce, while the entire industry is not yet mature. As a result, even consumers who claim they are loyal may still be attracted to new apps constantly coming out the market. This leads to the insignificant link between loyalty and continuance intention. The lack of statistical significance for loyalty on continuance intention is different from earlier studies [1, 4]. We believe that this is also due to the strong path coefficients of satisfaction, perceived value, and personal innovativeness on continuance intention.

Table 6: Hypotheses Support

No	Hypothesis	Support
H1	The greater the degree of perceived value, the greater the consumer satisfaction with using mobile financial apps.	Strong
H2	The greater the degree of perceived value, the greater the continuance intention with mobile financial apps.	Strong
H3	The greater the degree of perceived value, the greater the loyalty with using mobile financial apps.	Very strong
H4	The greater the degree of perceived enjoyment, the greater the consumer satisfaction with using mobile financial apps.	Very strong
H5	The greater the degree of perceived enjoyment, the greater the continuance intention with mobile financial apps.	Very strong
H6	The greater the degree of consumer innovativeness, the greater the continuance intention with mobile financial apps.	Very strong
H7	The greater the degree of consumer innovativeness, the greater the loyalty with using mobile financia1 apps.	Strong
H8	The greater the degree of switching costs, the greater the continuance intention with mobile financial apps.	Strong
H9	The greater the degree of habit, the greater the consumer satisfaction with using mobile financial apps.	Very strong
H10	The greater the degree of habit, the greater the consumer satisfaction with using mobile financial apps.	Very strong
H11	The greater the degree of habit, the greater the continuance intention with mobile financial apps.	Strong
H12	The greater the degree of habit, the greater the loyalty with using mobile financial apps.	Weak
H13	The greater the degree of consumer satisfaction, the greater the continuance intention with mobile financial apps.	Very strong
H14	The greater the degree of consumer satisfaction, the greater the loyalty with using mobile financial apps.	Very strong
H15	The greater the degree of loyalty using mobile financial apps, the greater the continuance intention with mobile financial apps.	No support

Note: Very strong = $p<0.001$; Strong = $p<0.01$; Weak=$p<0.05$

Habit, as a constraint-based factor, was a strong predictor for loyalty, even though loyalty was not a strong predictor of continuance intention. The findings demonstrated that enabling Chinese consumers to maintain the status quo while providing enjoyment for the use of current apps is a strong force for satisfaction. Satisfaction had a strong variance explained with paths from perceived value, habit, and perceived enjoyment. One explanation for this is that Chinese consumers strongly rely on consumer ratings to assess perceived value. In many cases, ratings were found to be one of the most useful inputs for determining perceived value. Another explanation is that the majority of Chinese consumers of mobile financial apps are young users. To them, pursuing fun and excitement online is one of the key drivers for satisfaction with financial apps. But on the other hand, they also have a tendency to maintain status quo. This means it is very important to develop their habitual use in order to keep their satisfaction and loyalty levels high. Switching cost is another determinant for continuance intention and loyalty. Like other consumers, Chinese consumers are deterred by possible learning curves and uncertainty of new apps when considering switching Thus adding unique functions and features and providing loyalty programs to increase switching cost should be a consideration for the app provider and developer.

Contributions to Theory

This study has applied and extended the dual-factor model and well-established theoretical lens in adoption to examine consumer post-adoption of mobile technologies. Particularly, this study contributes to theory by extending the dual-factor model to add three new constructs: perceived enjoyment and personal innovativeness as dedication-based factors and habit as a

constraint-based factor, into the model. This is a salient extension that provides new insights into customers' loyalty and satisfaction to mobile financial app use when considering intrinsic motivations such as fun and excitement in innovative mobile financial applications while accounting for use habit. This study also contributes to theory by linking the dual-factor model with continuance intention. This linkage also provides new theoretical insights into continuance intention in the context of mobile financial apps. Moreover, the study is conducted in the context of one of the fast growing economies, namely China, where the growth of mobile device usage and mobile financial app usage has been phenomenal in the past decade. The theoretical contributions also center on the effects of factors such as perceived value, habit, perceived enjoyment, and switching cost in the extended setting of mobile technologies adoption model and from the dual-factor perspectives.

Our study contributes to a more in-depth view of the mechanisms surrounding the use and continuance intention of emergent mobile technologies and services. In addition, by incorporating personal innovativeness as a new dedication-based factor into our research model, this study is related to the research in Technology Readiness Index (TRI). Through taking into consideration the level of TRI, firms may be able to effectively tailor their new products to consumers in different markets. The model, constructs taken aggregately, identifies a number of relationships that are important with Chinese mobile app vendors. Most importantly, personal innovativeness is a key construct to directly affect continuance intention. Satisfaction is impacted most significantly by perceived enjoyment and habit. Whereas, loyalty is directly affected by perceived value and personal innovativeness; and taken as a dependent construct satisfaction has a strong impact on loyalty. For Chinese consumers, personal innovativeness is the construct that has the strongest direct effect on continuance intention.

Contributions to Practice

Our findings also have practical implications. Given that mobile technologies enable commerce and services are expected to continuously grow and penetrate across various sectors, managers and service providers of mobile technologies are expected to be aware of and understand the dual-factor mechanisms that affect their consumers' adoption and continuous use and seek the balance between innovation and stability in their mobile applications. A better understanding of the impact of the key factors would lead to more informed decision making pertinent to the design and availability of new mobile products and services. Particularly, when developing mobile financial apps in China, firms need to pay attention to enjoyment features since having fun features is as important as providing value in determining satisfaction, based on our findings.

Firms interested in China markets also need to be aware that locking customers to form their habitual use is essential to satisfaction that leads to repeat purchases for Chinese consumers. However, when Chinese users claim their loyalty, it doesn't guarantee their future business. This means consumer satisfaction is relatively more important than customer loyalty in mobile app adoption. A possible reason is that because the market of mobile financial applications is still emerging and Chinese consumers are still in a stage of searching and trying, they are not loyal in general, at this stage. Also, because Chinese are bargain seekers and price sensitive; it is hard to keep them loyal. Three factors, satisfaction, loyalty, and continuance intention have 77.2%, 77.5%, and 80.1% variance explained respectively. These findings indicate that the antecedents of the three factors are key factors guiding businesses to develop, design, and market their mobile financial apps in China.

Limitations and Future Research

Our study has several limitations; some are general, whereas others are specifically related to the focus of continuance intentions of consumers of mobile applications. In turn, these limitations provide avenues for further research. First, the findings should be interpreted within limitations of the empirical data and analysis. Our study focuses on mobile applications in financial services. While our focus has offered practical and important implications for the sector of financial services, it needs further exploration on whether or not our findings are applicable to other types of mobile applications that may have different characteristics. The phenomenal growth in the use of mobile applications worldwide offers great opportunities for future research in this domain. Second, with respect to external validity and generalizability, the sample represents China-based consumers, but the sample may be skewed to a younger age of consumers. However, although we used the snowball method to reach a broad population with a sample size of 1,176 responses, this is still a limited sample and caution should be taken when applying our findings in other populations. Future research will include posting the survey link on a broader social media network in order to attract a wider variety of respondents.

Furthermore, while this study contributes to the literature by focusing on China, it would be interesting to test the impacts of key factors from our research model in

other regions and cultures, especially longitudinal, cross-national studies. Subsequently, it may provide additional insights on whether and how cultural related variables may moderate the significant effects of those key factors discovered in this study. Longitudinal, cross-national studies may also address possible common-method bias in our sample.

REFERENCES

[1] Amoroso, D., Ackaradejruangsri, P., and Lim, R. "The Impact of Inertia as Mediator and Antecedent on Consumer Loyalty and Continuance Intention," *International Journal of Customer Relationship Marketing and Management*, Volume 8, Number 2, 2017, pp.1-20.

[2] Amoroso, D. and Lim, R. "Innovativeness of consumers in the adoption of mobile technology in the Philippines," *International Journal of Economics, Commerce and Management*, Volume 2, Number 1, 2014, pp.1-12.

[3] Amoroso, D. and Lim, R. "Why are Filipino Consumers Strong Adopters of Mobile Applications?" *Business Technologies in Contemporary Organizations: Adoption, Assimilation, and Institutionalization*, IGI Publications, Hershey, Pennsylvania, 2015, pp.236-245.

[4] Amoroso, D. and Lim, R. "Exploring the Personal Innovativeness Construct: The Roles of Ease of Use, Satisfaction and Attitudes," *Asia Pacific Journal of Information Systems*, 2015, Volume 25, Number 4, pp.562-685.

[5] Amoroso, D. and Lim, R. "The Mediating Effects of Habit on Continuance Intention," *International Journal of Information Management*, 2017, Volume 37, pp.693-702.

[6] Amoroso, D. and Ogawa, M. "Comparing Mobile and Internet Adoption Factors of Loyalty and Satisfaction with Online Shopping Consumers, *International Journal of E-Business Research*, 2013, Volume 9, Number 2, pp.24-45.

[7] Anderson, R., Swaminathan, S. "Customer Satisfaction and Loyalty in e-Markets: A PLS Modeling Approach," *Journal of Marketing Theory and Practice*, 2011, Volume 19, Number 2, pp.221-234.

[8] Atkinson, R. and Flint, J. "Assessing Hidden and Hard-to-Reach Populations: Snowball Research Strategies," *Social Research Update,"* University of Surrey, 2001, Volume 33, pp.1-4.

[9] Balter, F. and Brunet, I. "Social Research 2.0: Virtual Snowball Sampling using Facebook," *Internet Research*, 2012, Volume 22, pp.57-74.

[10] Bauer, H., Grether, M., and Leach, M. "Building Consumer Relations over the Internet," *Industrial Marketing Management*, 2002, Volume 31, pp.155-163.

[11] Bendapudi, N., and Berry, L. "Consumers' motivations for maintaining relationships with service providers," *Journal of Retailing*, 1997, Volume 73, Number 1, pp.15–37.

[12] Bentler, P. "On The Fit of Models to Covariances and Methodology to the Bulletin," Psychological *Bulletin*, 1992, Volume 112, Number 3, pp. 400-404.

[13] Bentler. P, and Bonnett, D. "Significance Tests and Goodness of Fit in the Analysis Covariance Structures," *Psychological Bulletin*, 1980 Volume 88, Number 3, pp. 88-606.

[14] Bhattacherjee, A. "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly*, 2001, Volume 25, Number 3, pp.351-379.

[15] Bhattacherjee, A., Limayem, M., and Cheung, M. "User switching of information technology: A theoretical synthesis and empirical test," *Information and Management*, 2012 Volume 49, pp.327-333.

[16] Borison, R."Alibaba's Alipay is Winning the Mobile Payments Game in China," http://www.thestreet.com/story/13170673/1/alibabas-alipay-is-winning-the-mobile-payments-game-in-china.html, 2015.

[17] Browne, M.W. and Cudeck, R. *Alternative Ways of Assessing Model Fit*, In K.A. Bollen and J.S. Long (eds.), Testing Structural Equation Models. Newbury Park, CA: Sage Publications, 1993, pp.445-455.

[18] Changya, H. and Wang, Y. *Bootstrapping in AMOS*, North Carolina Central University, 2010, pp.1-14.

[19] Chen, Y. and Dai, H. "Do Innovators Concern Less about Security and Value New Technologies More? A Case of Mobile Commerce," Journal of Information Technology Management, 2014, Volume 25, Number 4, pp.13-16.

[20] Chen, H., Liu, F., and Dai, T. "Chinese Consumers' perceptions toward smartphone and marketing communication on smartphone," *Mobile Marketing Association*, 2013, Volume 8, Number 1, pp.38-45.

[21] Chen, Y. and Zahedi, M. "Internet Users' Security Behaviors and Trust," *Proceedings of the Fourth*

AIS SIGSEC Workshop on Information Security and Privacy. December 2009.

[22] Chen, L., Meservy, T., and Gillenson, M. "Understanding information systems continuance for information-oriented mobile applications," *Communications of the Association for Information Systems*, 2012 Volume 30, Number 9, pp.127-146.

[23] Cheung, C. and Limayem, M. "The Role of Habit in Information Systems Continuance: Examining the evolving relationship between intention and usage," in: D. Avison, D. Galletta, and J DeGross (eds.) *Proceedings of the 26th International Conference on Information Systems*, Las Vegas, NV, December 11-14, 2005, pp. 471-482.

[24] Cheong, C., Zheng, X. and Lee, M. "How the Conscious and Automatic Information Processing Modes Influence Consumers' Continuance Decision in an e-Commerce Website," *Pacific Asia Journal of the Association for Information Systems*, 2015, Volume 7, Number 2, pp.25-40.

[25] Cheong, G. and Lau, R. "Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models," *Organizational Research Methods*, 2008 Volume 11, Number 2, pp.296-325.

[26] China Whisper. "Top 10 Websites to Download Chinese Songs and Music for Free," http://www.chinawhisper.com/top-10-sites-to-listen-to-free-chinese-music-online, 2014.

[27] Chong, A. "Understanding mobile commerce continuance intentions: an empirical analysis of Chinese consumers," *Journal of Computer Information Systems*, 2013, Volume 53, Number 1, pp.22-30.

[28] Chong, A., Chan, F., and Ooi, K. "Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia," *Decision Support Systems*, 2012, Volume 53, Number 1, pp.34-43.

[29] Chong, A., Ooi, K,. Lin, B., and Bao, H. "An empirical analysis of the determinants of 3G adoption in China," *Computers in Human Beha*vior, 2012, Volume 28, Number 2, pp.360-369.

[30] Cronin, J., Brady, M., Hightower, R., and Shemwell, D. "A cross-sectional test of the effect and conceptualization of service value," *The Journal of Service Marketing*, 1997, Volume 11, Number 6, pp.375-391.

[31] Cyr, D., Head, M., and Ivanov, A. "Design Aesthetics Leading to M-loyalty in Mobile Commerce," *Information and Management*, 2006, Volume 43, pp.950-963.

[32] Dahlberg, T., J. Guo, and J. Ondrus. "A Critical Review of Mobile Payment Research," *Electronic Commerce Research and Applications*, 2015, Volume 14, Number 5, pp.265-284.

[33] Dai, H, and Palvia, P. "Mobile Commerce Adoption in China and the United States: A Cross-Cultural Study," The Data Base for Advances in Information Systems, 2009, Volume 40, Number 4, pp.43-61.

[34] Deng, Z., Lu, Y., Wei, K. K., and Zhang, J. "Understanding consumer satisfaction and loyalty: An empirical study of mobile instant messages in China," *International journal of information management*, 2010, Volume 30, Number 4, pp.289-300.

[35] Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., and Lim, K. "Trust, Satisfaction, and online Continuance Intention: The Moderating role of perceived effectiveness of E-commerce Institutional Mechanisms," *MIS Quarterly*, 2014, Volume 38, Number 2, pp.407-427.

[36] Forbes, (2015). "Competition Could Impact China Unicom's Valuation By 10%," http://www.forbes.com/sites/greatspeculations/2015/06/03/competition-could-impact-china-unicoms-valuation-by-10/#1807b16e2ef8, 2015.

[37] Fornell, C., and Larcker, D. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 1981, Volume 18, Number 1, pp.39-50.

[38] Gill, A., Bunker, D., and Seltsikas, P. "Moving Forward: Emerging Themes in Financial Services Technologies' Adoption," *Communications of the Association for Information Systems*, 2015 Volume 36, Number 12, pp.205-230.

[39] Ha, Y., Park, M. and Lee, E. "A framework for mobile SNS advertising effectiveness: user perceptions and behaviour perspective," *Behaviour and Information Technology*, 2014, Volume 33, Number 12, pp.1333-1346.

[40] Hedman, J.and S. Henningsson. "The new normal: Market cooperation in the mobile payments ecosystem," *Electronic Commerce Research and Applications*, 2015, Volume 14, Number 5, pp.305-318.

[41] Holland, J., and Baker, S. "Consumer Participation in Creating Web Site Brand Loyalty," *Journal of Interactive Marketing*, 2001 Volume 15, Number 4, pp.1-14.

[42] Hu, L. and Bentler, P. "Cut-Off Criteria for Fit Indexes in Covariance Matrix Analysis: Conventional Criteria versus New Alternatives,"

Structural Equation Modeling, 1999, Volume 6, Number 1, pp.1-55.

[43] Jin, X., Lee, M., and Cheung, C. "Predicting continuance in online communities: model development and empirical test," *Behaviourand Information Technology*, 2010, Volume 29, Number 4, pp.383-394.

[44] Kazan, E. and Damsgaard, J. "Towards a Market Entry Framework for Digital Payment Platforms," *Communications of the Association for Information Systems*, 2016, Volume 38, Number 37, pp.761-783.

[45] Keeney, R. "The value of internet commerce to the consumer," *Management Science*, 1999, Volume 45, Number 4, pp.533-542.

[46] Kim, H., Chan, H., and Gupta, S. "Value-based adoption of mobile Internet: an empirical investigation," *Decision Support Systems*, 2007, Volume 43, Number 1, pp.111–126.

[47] Kim, B., Kang, M. and Jo, H. "Determinants of Postadoption Behaviors of Mobile Communications Applications: A Dual Model Perspective," *International Journal of Human-Computer Interaction*, 2014 Volume 30, pp.547-559.

[48] Kim, S. S., and Son, J. "Out of dedication or constraint? A dual model of post-adoption phenomena and its empirical test in the context of online services," *MIS Quarterly*, 2009 Volume 33, Number 1, pp.49–70.

[49] Kim, H., and Xu, J. "Internet Shopping: Is it a Matter of Perceived Price or Trust*?" International Conference on Information Systems*, 2004, pp.241-250.

[50] Koufaris, M. "Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior," *Information Systems Research*, 2002, Volume 13, Number 2, pp.205-223.

[51] Kosinski, M, Matz, S., Gosling, S., Popov, V., and Stillwell, D. "Facebook as a Research Tool for the Social Sciences," *American Psychologist*, 2015, Volume 70, Number 6, pp.(543-556.

[52] Kuo, Y., Wu, C., and Deng, W. "The relationships among service quality, perceived value, consumer satisfaction, and post-purchase," *Journal of Marketing*, 1988, Volume 52, Number 2, pp.2-22.

[53] Lam, S.Y., Venkatesh, S., Erramilli, K.M. and Bvsan, M. "Switching Costs: An Illustration From A Business-to-Business Service Context," *Journal of the Academy of Marketing Science*, 2004, Volume 32, Number 3, pp.293-311.

[54] Lankton, N. and McKnight, H. "Examining Two Expectation Disconfirmation Theory Models: Assimilation and Asymmetry Effects," *Journal of the Association for Information Systems*, 2012, Volume 13, Number 2, pp.88-115.

[55] Lau, R. and Cheung, G. "Estimating and Comparing Specific Mediation Effects in Complex Latent Variable Models," *Organizational Research Methods*, 2012 Volume 15, Number 1, pp.3-16.

[56] Lee, C. and Shim, J. "An Empirical Study on User Satisfaction with Mobile Business Applications Use and Hedonism," *Journal of Information Technology Theory and Applications*, 2006, Volume 8, Number 3, pp.57-74.

[57] Li, D., An S., and Yang K. "Exploring Chinese consumer repurchasing intention for services: An empirical investigation," *Journal of Consumer Behaviour*, 2008, Volume 7, pp.448-460.

[58] Liang, D., Ma, Z., Qi, L. "Service quality and customer switching behavior in China's mobile phone service sector," *Journal of Business Research*, 2013, Volume 66, pp.1161-1167.

[59] Limayen, M. and Cheung, C. "Predicting the continued use of Internet-based learning technologies: the role of habit," *Behaviour and Information Technology*, 2011, Volume 30, Number 1, pp.91–99.

[60] Limayen, M. and Cheung, C. "Understanding Information Systems Continuance: The Case of Internet-Based Learning Technologies," *Information and Management*, 2008, Volume 45, pp.227-232.

[61] Limayen, M. and S. Hirt. "Force of Habit and Information Systems Usage: Theory and Initial Validation," *Journal of the Association for Information Systems*, 2003, Volume 4, pp.65-97.

[62] Limayen, M., Hirt, S., and Cheung, C. "How Habit Limits the Predictive Power of Intention: The Case of Information System Continuance," *MIS Quarterly*, 2007, Volume 31, Number 4, pp.705-737.

[63] Lin, J., Lu, Y., Wang, B., and Wei, K. "The role of inter-channel trust transfer in establishing mobile commerce trust," *Electronic Commerce Research and Applications*, 2011, Volume 10, Number 6, pp.615-625.

[64] Lin, H., and Wang, Y. "An Examination of the Determinants of Consumer Loyalty in Mobile Commerce Contexts," *Information and Management*, 2006, Volume 43, Number 3, pp.271-282.

[65] Lowry, P., Gaskin, J. Twyman, N., Hammer, B. and Roberts, T. "Taking Fun and Games Seriously: Proposing the hedonic-motivation system adoption model," *Journal of the Association for Information*

Systems, 2013, Volume 14, Number 11, pp.617-671.

[66] Lowry, P., Gaskin, J., and Moody, G. "Proposing the Multi-motive Information Systems Continuance Model (MISC) to Better Explain End-User System Evaluations and Continuance Intentions," *Journal of the Association for Information Systems*, 2015, Volume 16, Number 7, pp.515-579.

[67] Lu, Y., Deng, Z., and Wang, B., (2010). "Exploring factors affecting Chinese consumers' usage of short message service for personal communication," *Information Systems Journal*, 2010, Volume 20, pp.183–208.

[68] MacKinnon, D. *Introduction to Statistical Mediation Analysis*, New York: Lawrence Erlbaum Association, 2008.

[69] Methlie, L. B., and Nysveen, H. "Loyalty of On-line Bank Consumers," *Journal of Information Technology*, 2009, Volume 14, pp.375-386.

[70] Mueller, J. "Chinese and American Consumers Have Different Ideas About What Makes a Product Creative," *Harvard Business Review*, February 23, 2017, pp.1-5.

[71] Naswall, K., Swerke, M., and Goransson, S. "Is work affecting my health? Appraisals of how work affects health as a mediator in the relationship between working conditions and work-related attitudes," *Work and Stress*, 2014, Volume 28, Number 4, pp.342-361.

[72] Oghuma, A, Chang, Y., Libaque-Saenz, C., Park, M, Rho, J. "Benefit-confirmation model for post-adoption behavior of mobile instant messaging applications: A comparative analysis of KakaoTalk and Joyn in Korea," *Telecommunications Policy*, 2015, Volume 39, pp.658-677.

[73] Ortiz de Guinea, A. and Markus, L. "Why Break the Habit of a Lifetime? Rethinking the Roles of Intention, Habit, and Emotion in Continuing Information Technology Use," *MIS Quarterly*, 2009, Volume 33 Number 3, pp.433-444.

[74] Peng, K., Chen, Y., and Wen, K., (2014). "Brand relationship, consumption values and branded app adoption," *Industrial Management and Data Systems*, 2014, Volume 114(8), 1131-1143.

[75] Peng, J., Quan, J., and Zhang, S. "Mobile phone customer retention strategies and Chinese e-commerce," 2013, Volume 12, pp.321-327.

[76] Polites, G. and Karahanna, E. (2012). "Shackled to the Status Quo: The Inhibiting Effects of Incumbent System Habit, Switching Costs, and Inertia on New System Acceptance." MIS Quarterly, 2012, Volume 36, Number 1, pp.21–42.

[77] Premkumar, G. and Bhattacherjee, A. "Explaining Information Technology Usage: A Test of Competing Models," *Omega*, 2008, Volume 36, pp.64-75.

[78] Reichheld, F. F., and Schefter, P. "E-Loyalty: Your Secret Weapon on the Web," *Harvard Business Review*, 2000, pp.105-113.

[79] Roca, J., Chiu, C., and Martinez, F. "Understanding eLearning Continuance Intention: An Extension of the Technology Acceptance Model," *International Journal of Human-Computer Studies*, 2006, Volume 64, pp.683-696.

[80] Recker, J. "Reasoning about Discontinuance of Information Systems Use," *Journal of Information Technology Theory and Application*, 2016, Volume 17, Number 1, pp.41-66.

[81] Rohm, A., Gao, T., Sultan, F., and Pagani, M. "Brand in the hand: A cross-market investigation of consumer acceptance of mobile marketing," *Business Horizons*, 2012, Volume 55, pp.485-493.

[82] Rucker, D., Preacher, K., Tormala, Z., and Petty, R. "Mediation analysis in social psychology: current practices and new recommendations," *Social and Personality Psychology Compass*, 2011, Volume 5/6, pp.359-371.

[83] Shin, D. "Effect of the customer experience on satisfaction with smartphones: Assessing smart satisfaction with partial least squares," *Telecommunication Policy*, 2015, Volume 39, pp.627-641.

[84] Statista, "Number of mobile cell phone subscribers in China from July 2015 to July 2016 (in millions)," July 2016, http://www.statista.com/statistics/278204/china-mobile-users-by-month/, 2016.

[85] Sun, H., Fang, Y., and Zou, H. "Choosing a Fit Technology: Understanding Mindfulness in Technology Adoption and Continuance," *Journal of the Association for Information Systems*, 2016, Volume 7, Number 6, pp.377-412.

[86] Thorbjornsen, H., and Supphellen, M. "The Impact of Brand Loyalty on Website Usage," *The Journal of Brand Management*, 2004, Volume 11, Number 3, pp.199-209.

[87] Vogt, W. *Dictionary of Statistics and Methodology: A Nontechnical Guide for the Social Sciences*, London, 1999, Sage Publications.

[88] Wang, Y., Wu, M., and Wang, H. "Investigating the Determinants and Age and Gender Differences in the Acceptance of Mobile Learning," *British Journal of Educational Technology*, 2009, Volume 40, Number 1, pp.92-118.

[89] Wang, Y., Yuan, Y., Turel, O., and Tu, Z. "Understanding the Development and Diffusion of Mobile Commerce Technologies in China: A Biographical Study with an Actor-Network Theory Perspective," *International Journal of Electronic Commerce,"* 2015, Volume 19, Number 4, pp.47-76.

[90] Wilson, E., Mao, E., and Lankton, N. "The Distinct Roles of Prior IT Use and Habit Strength in Predicting Continued Sporadic Use of IT," *Communications of the Association for Information Systems*, 2010, Volume 27, Number 12, 185-206.

[91] Wilson, E. and Lankton, N. "Effects of Prior Use, Intention, and Habit on IT Continuance Across Sporadic Use and Frequent Use Conditions," *Communications of the Association for Information Systems*, 2010, Volume 33, Number 3, pp.33-46.

[92] Wood, W. and Neal, D. "The Habitual Consumer," *Journal of Consumer Psychology*, 2009, Volume 19, pp.579-592.

[93] Wu, L., Cai, Y., and Liu, D. "Online shopping among Chinese consumers: an exploratory investigation of demographics and value orientation," *International Journal of Consumer Studies*, 2011, Volume 35, Number 4, pp.458-469.

[94] Yang, H., Zhou, L., and Liu, H. "A comparative study of American and Chinese young consumers' acceptance of mobile advertising: a structural equation modeling approach," *International Journal of Mobile Marketing*, 2010, Volume 5, Number 1, pp.60-76.

[95] Ye, C. and Potter, R. "The Role of Habit in Post-Adoption Switching of Personal Information Technologies: An Empirical Investigation, *Communications of the Association for Information Systems*, 2011, Volume 28, Number, pp.585-610.

[96] Yeung, E. "China's Top Mobile Apps Of 2014," http://www.edith.co/blog/china-s-top-mobile-apps-of-2015.

[97] Yi, M.Y., Fiedler, K. and Park, J.S. "Understanding the role of individual innovativeness in the acceptance of IT-based innovations: comparative analyses of models and measures," *Decision Sciences*, 2016, Volume 37, Number 3, pp.394-426.

[98] Yoon, C., "The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China," *Information and Management*, 2009, Volume 46, Number 5, pp.294-301.

[99] Zhou, T. and Lu, Y. "Examine Postadoption Usage of Mobile Services from a Dual Perspective of Enablers and Inhibitors," *International Journal of Human-Computer Interaction*, 2011, Volume 27, Number 12, pp.1177-1191.

[100] Zhou, T. "An Empirical Examination of Continuance Intention of Mobile Payment Systems," *Decision Support Systems*, 2013, Volume 34, pp.1085-1091.

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APPENDIX A: CONSTRUCT SUMMARY

Authors	Hypothesis	Independent Variables	Dependent Variables
Perceived Value			
Amoroso and Ogawa (2012); Limayen and Cheong (2008); Roca, et al. (2006); Limayem, et al. (2007); Bhattacherjee (2001); Chen at al. (2012); Zhou and Liu (2011); Lowry, et al. (2015); Lankton and McKnight (2012)	H1	Perceived value	Satisfaction
Li, An, Wang (2008); Kim, Chan, Gupta (2007); Peng, Chen, Wen (2014); Dai and Palvia (2009); Limayen and Chen (2011); Bhattecherjee (2001); Kim, Kang, Jo (2016); Ha, Park, Lee (2012); Kim, et al. (2007); Sun, et al. (2016); Recker (2016)	H2	Perceived value	Continuance intention
Anderson and Srinivasan (2003); Deng, et al. (2010); Shin (2015)	H3	Perceived value	Loyalty
Perceived Enjoyment			
Lu, Deng, Wang (2010); Dai and Palvia (2009); Chong (2013); Cheung, et al. (2015); Kim, Kang, Jo (2016); Lowry, et al. (2013); Ohhuma, et al. (2015); Chen, et al. (2012); Arbore, et al. (2014); Cheong et al. (2015)	H4	Perceived enjoyment	Satisfaction
Kim, Chan, Gupta (2007); Cheung, et al. (2015); Ohhuma, et al. (2015); Lee and Shim (2006); Lowry, et al. (2015)	H5	Perceived enjoyment	Continuance intention
Consumer Innovativeness			
Lu et al. (2005); Lee, Qu, and Kim (2007); Dai and Palvia (2009); Amoroso and Lim (2015); Chen (2009); Lian, et al. (2012), Agarwal and Prasad (1996), Watchravesringkan, et al.(2010); Rohm, et al. (2012)	H6	Consumer innovativeness	Continuance intention
Wu and Qi (2010); Amoroso and Lim (2015); Chen (2009); Lam et al. (2004); Bhattecherjee, et al. (2012)	H7	Consumer innovativeness	Loyalty
Switching Costs			
Li, An, Wang (2008); Bhattecherjee, et al. (2012); Kim, Kang, Jo (2014); Ye and Potter (2011); Zhou and Liu (2011); Liang, et al. (2013)	H8	Switching costs	Continuance intention
Lam, et al. (2004); Deng, et al. (2010); Amoroso and Lim (2014)	H9	Switching costs	Loyalty

Authors	Hypothesis	Independent Variables	Dependent Variables
Habit			
Limayem, et al. (2007); Amoroso and Lim (2015); Lin et al. (2015)	H10	Habit	Satisfaction
Limayem, et al. (2007); Limayen and Cheong (2011); Cheong, et al. (2015); Limayen and Cheong (2008); Bhattecherjee, et al. (2012); Kim, Kang, Jo (2014); Wilson and Lankton (2013)	H11	Habit	Continuance intention
Amoroso and Ogawa (2013); Anderson and Swaminathan (2011); Amoroso and Hunsinger (2009); Lin et al. (2015)	H12	Habit	Loyalty
Consumer satisfaction			
Amoroso and Ogawa (2012); Ho and Wu (2011); Amoroso and Lim (2015); Chong (2013); Li, An, Wang (2008); Chen (2009); Lien (2012); Wang (2012); Limayem, et al. (2007); Cheong, et al. (2015); Bhattacherjee (2001); Bhattecherjee, et al. (2012); Roca, et al. (2006); Premkumar and Bhattacherjee (2008); Kim, Kang, Jo (2016); Ye and Potter (2011); Zhou (2013); Peng, et al. (2013)	H13	Satisfaction	Continuance intention
Anderson and Swaminthan (2011); Wu and Qi (2010); Anderson and Swaminathan (2011); Ho and Wu (2011); Deng, et al. (2010); Shin (2015)	H14	Satisfaction	Loyalty
Loyalty			
Amoroso and Ogawa (2013); Thorbjornsen and Supphellen (2004); Lin, et al. (2015); Amoroso and Lim (2015); Cyr et al, (2006). Holland aker (200l); Ho and Wu (2011); Reicheld and Schefter (2000); Chen (2008); and Anderson and Swaminathan2011); Bhattecherjee (2001); Pent, et al. (2013)	H15	Loyalty	Continuance intention

APPENDIX B: MEASUREMENT SCALES

Perceived Value
Mobile applications are useful to conducting financial services 移动设备应用程序(APPs)对完成金融服务有用
Mobile apps gives me a greater degree of choices for financial services 移动设备应用程序(APPs)为金融服务提供了更多的选择
Mobile apps allow me to purchase at lower prices移动设备应用程序(APPs)让我购买时付的价格更低
I feel that the mobile apps for financial services are worth using 我觉得移动设备应用程序(APPs)的金融服务值得一用
I feel that mobile apps for financial services provide benefits to me 我觉得移动设备上有关金融服务的应用程序(APPs)对我有益
I feel that the mobile apps for financial services are efficient for me to manage my time 我觉得移动设备关于金融服务的应用程序(APPs)可以让我有效地管理时间
Habit
Once I start using a mobile app, I will continue to use it 一旦我开始使用一个移动设备应用程序(APPs)，我会继续使用它
I find it difficult to stop using certain mobile apps for financial services 我发现有些应用程序(APPs)里的金融服务使用起来很困难
I intend to continue using a mobile app rather than discontinue use 我倾向于继续使用移动设备应用程序(APPs)而不是停止使用
My intentions are to continue using a mobile app rather than use alternative means 我会继续使用移动设备应用程序(APPs)而不是其他方式
If I could, I would like to continue my use of mobile app 如果我可以，我会继续使用移动设备应用程序(APPs)
Perceived Enjoyment
I have fun using mobile apps for financial services 我觉得使用移动设备里的关于金融服务的应用程序(APPs)很有趣
Using mobile apps for financial services provides me with a lot of enjoyment 使用移动设备应用程序(APPs)的金融服务给我带来了很多乐趣
Using mobile apps for financial services are pleasant 使用移动设备应用程序(APPs)的金融服务很愉快
Using the mobile apps for financial services is enjoyable 使用移动设备应用程序(APPs)的金融服务很享受
Personal innovativeness
When I hear about a new application for the mobile services I often try to use it 当我获知一个新的移动设备应用程序(APPs)，我常常会试着使用它
Among my peers, I am usually the first to try out new financial apps 跟同辈相比，我常常是第一个试用金融服务应用程序(APPs)的人
I am interested in complicated and complex mobile app functionality 我对移动设备应用程序(APPs)的复杂功能感兴趣

Switching Costs
Once I start using certain mobile apps, changing to a new app would be troublesome 一旦开始使用移动设备的特定的应用程序 (APPs)，我发现很难改用一个新的应用程序(APPs)
I would like to stick with my current mobile apps for financial services 我会坚持使用目前的移动设备的关于金融服务的应用程序(APPs)
Switching to a new app is time consuming 切换到一个新的应用程序(APPs)比较费时间
I do not want to lose my financial services, so I will continue to use my current mobile apps 我不想失去我的金融服务，所以我会继续使用我目前的应用程序(APPs)
Loyalty
Once I start using certain mobile apps, changing to a new app would be troublesome 一旦开始使用移动设备的特定的应用程序 (APPs)，我发现很难改用一个新的应用程序(APPs)
I would like to stick with my current mobile apps for financial services 我会坚持使用目前的移动设备的关于金融服务的应用程序(APPs)
Switching to a new app is time consuming 切换到一个新的应用程序(APPs)比较费时间
I do not want to lose my financial services, so I will continue to use my current mobile apps 我不想失去我的金融服务，所以我会继续使用我目前的应用程序(APPs)
Consumer Satisfaction
I will recommend certain mobile apps to friends and relatives 我会把手机应用推荐给我的亲戚或者朋友
I will use the same apps for financial services in the future 在未来我会使用同样的应用里的财务服务
I plan to return to using mobile apps for financial services when I get superior customer service 如果能获得很好的客户服务，我会考虑重新使用手机应用里的财务服务。
I consider myself to be very loyal to using certain mobile apps for financial services 我坚持使用某些手机应用里的财务服务
I will choose certain mobile apps as my first choice in the decision process 做决定的时候我会优先选择某些手机应用
I consider certain mobile apps to be better than others 我认为有些手机应用好于其他
Continuance Intention
I always try to use the mobile apps as much as possible 我常常试着尽可能多地使用移动设备应用程序(APPs)
I would consider using the mobile apps in the long term 我考虑长期使用移动设备应用程序(APPs)
In the future I intend use mobile apps rather than going to a physical store 以后我倾向于使用移动设备应用程序(APPs)而不是去实体店
Overall, I will use a mobile apps to procure financial services 总体而言，我会使用移动设备应用程序(APPs)来获得金融服务