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How Espoused Cultural Values Affect Smartphone-based Mobile Payment Users in China?

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ABSTRACT

This study examines the impacts of social influence and privacy protection on mobile commerce continuance and the moderation effects of espoused cultural values. A research model rooted in expectation-confirmation theory was tested using 356 usable responses from Android mobile payment users in China. The results revealed that both post-usage privacy protection and social influence beliefs drove Android user continuous intentions direct and indirect via user satisfaction. The espoused cultural value, masculinity/femininity, moderates the effect of social influence over continuous intentions. Limitations and future research directions are also discussed.

KEYWORDS: social influence, privacy protection, mobile commerce, espoused cultural values

INTRODUCTION

Mobile payments, payment services operated under financial regulation and performed via a mobile device, were gaining skyrocketing popularity since 2013 in China, the largest smartphone market in the world. According to the figure from the central bank, in 2013, they handled a total of 1.67 billion mobile payment transactions (worth $1.6 trillion). The number of transactions soared 213% from the year before, while the transaction value leaped by 317% (The Next Web, 2015). Mobile payment transaction share is forecasted by iResearch to take 97.2% of total payment transactions in China by 2015 (eMarketers, 2014). Researchers have observed that such thrust of mobile payments is largely driven by the blooming of mobile social media: (1) Weixin (also known as WeChat), the largest standalone mobile messaging app rolled out by Chinese Internet giant Tencent (Millward, 2014), incorporated TenPay in 2013; and (2) Alibaba has integrated its payments service, Alipay, with Sina Weibo (China’s Twitter) to simplify Weibo users’ payment experience (The Next Web, 2015). In fact, messaging and social commerce, or, promoting mobile transactions through its social networks, becomes the explanation to the new boost in China’s mobile ecosystem (PYMNTS.com, 2015).

Social influence, a determinant of technology acceptance, has repeatedly been recognized recently as an important determinant of mobile commerce acceptance (Chong, Chan, & Ooi, 2012; Thakur, 2013; Chen & Chang, 2013; Lu, 2014). Embedding mobile payment services and
opening stores in mobile social media, location-based services, group commerce websites, mobile WOM (word of mouth) are very likely to have enhanced willingness to take advantages of location convenient and cost saving mobile payment offerings, and to have significantly increased the effect of social influence in recommending mobile commerce (MC) services (Li, Chou, & Lin, 2014). Those unique values make social influence an indispensable factor to examine when studying mobile commerce.

On the other hand, the privacy concern grows as the consequence of mobile apps’ market development for seeking identification information, location data, contact information and bank account information (Arnes & Nes, 2011); as the result of location sharing and tracking enabled by mobile push-based services and their capability of holding and accessing large volume of personal and sensitive data from the Internet and the Cloud (Holbrook, 2011; Michael & Clarke, 2013). Privacy concerns are affecting the trustworthiness of smartphones as a MC platform. Recent studies in China (Dai, Wen, Singh, & Iyer, 2012; Xu, 2013; Zhang, Chen, & Lee, 2013) revealed that consumer privacy concerns directly or indirectly impact their satisfaction and commitment to MC activities. How to best protect mobile consumers’ privacy and personal data has drawn increased research attention. Some researchers believed that the existing industry self-regulation and available privacy-enhancing technologies will not be adequate to close important privacy gaps (King & Jessen, 2010). The simple ‘notice and consent’ measure, which is a fundamental privacy control mechanism, shifts the burden to users’ self-management and may be insufficient for meaningful privacy protection in the era of Big Data (Liu, 2014). To deepen our understanding of privacy protection in MC context, additional mobile privacy research is desired.

Because of various external and internal reasons, the level of being influenced by the social circle and the need for privacy protection vary greatly among mobile users. The IS literature shows that espoused national cultural values might play the role of individual difference moderators in technology acceptance (Srite & Karahanna, 2006). In that case, individuals with strong tendency of uncertainty avoidance could have stronger privacy concern and need more protection is this aspect; individuals who value collectivism more could be more easily influenced by their social circle. So far there is an inadequacy of research studies exploring the role of social influence and privacy protection in mobile payment users’ continuance decision process. Such studies coupled with investigating the moderating effects of espoused cultural values are even less.

As an attempt to fill such research gap, this paper focuses on how perceived social influence and platform privacy protection drive Android user continuance intentions toward mobile commerce in China, with consideration to their individual differences. Specifically, we will attempt to answer 1.) Are mobile payment users satisfied with their current mobile commerce experiences? 2.) What roles do social influence, perceived privacy protection play in mobile payment users’ continuance decision process? 3.) Whether and how do espoused cultural values moderate the impacts of the selected determinants on their MC continuance decisions? 4.) Whether and how do espoused cultural values moderate the impacts of social influence and privacy protection on satisfaction?

**METHODOLOGY**

To achieve the research purpose, a revised continuance model rooted in ECT theory (Bhattacherjee, 2001) integrating espoused national cultural value was developed after a thorough literature review (Figure 1). Five hundred and sixty-one Android phone users in China...
responded to our online survey on a server hosted by Chinese Academy of Social Sciences in Beijing Fall 2013. Data from 356 Android-based mobile payment users were used in data analysis and model testing. Cultural values were measured using scales derived from Hofstede (1980) and Dorfman and Howell (1988). Partial least squares (PLS) procedures in SmartPLS 2.0 (Ringle, Wende, & Will, 2005) were used to test both the research model and the psychometric properties of the scales.
FINDINGS

Initial data analysis shows that about 85% of our respondents were males, 15%, females. This gender distribution somehow differs from recently reported statistics in the literature – 67.8% for male and 32.2% for female (iResearch China, 2014). However, a similar pattern emerges – majority of mobile payment users were males. Over sixty-one percent of the respondents had participated in MC for less than three years. Almost 83% of the respondents were 40 or below in age. The largest percentage, 48.6%, went to those in the age range of 21 to 30. This pattern was, again, similar to the reported result. About 77% of survey participants received university education and only 7.3%, graduate study. About one-third (31.7%) were line employees. Most were at the mobility level of medium (42.7%) to high (34.6%). The mobility pattern happened to be similar to the one as emerged from a study conducted in the States the same year.

Figure 2 shows the model supported by empirical data. The PLS model testing procedures reveal that the loading values for each model construct are within the acceptable range (above 0.7). There is no obvious cross loading. The salience of disconfirmation of privacy protection served as the primary driver of the changes in the perceived post-usage privacy belief in our study (0.257, p < 0.01). Disconfirmation of social influence, however, did not have significant impact (0.137, p > 0.05) on perceived post-usage social influence. Both post-usage privacy protection (0.285, p < 0.01) and social influence (0.486, p < 0.001) beliefs drove user satisfaction which determined Android user MC continuous intentions (0.276, p < 0.05). Post-usage social influence perceptions also exerted direct impact on user continuous intentions (0.616, p <0.001). So does post-usage privacy protection (-0.177, p < 0.05). This base model explains 0.553 (55%) of the variance in the ultimate dependent variable, continuous intentions. When the espoused cultural values - masculinity/femininity, individualism/collectivism, power distance, and uncertainty avoidance - were added to the model and tested for hypothesized moderating effects using SmartPLS Product-Indicator Approach as recommended by Chin, Marcolin and Newsted (2003), masculinity/femininity construct has a statistically significant interaction moderating effect on social influence over continuous intentions (-0.195, p<0.05). Besides, masculinity/femininity also has a direct impact on continuous intentions (0.206, p<0.05). Uncertainty avoidance was found to have a direct impact on satisfaction (0.208, p<0.05), but no moderating effect. When those cultural value dimensions were added to the model, the variance explained in MC continuance intentions rises to 0.588 (almost 59%), a clear indication of increased explanatory power of our research model.
Since 85% of the data came from male respondents, we have a strong reason to suspect that the results might be affected by gender bias. Thus, the same was run using only data from 303 male respondents. The base model is supported in a similar way. The only difference is that post-usage privacy belief exerts a less significant effect on MC continuous intentions (-0.158, p < 0.10). When the espoused cultural dimensions were added to the model, again, the same pattern emerges. Masculinity/femininity remained an influential moderator on social influence over continuous intentions (-0.182, p < 0.05). Besides, masculinity/femininity also has a direct impact on continuous intentions (0.209, p<0.05). Uncertainty avoidance was found to have a direct impact on satisfaction (0.207, p<0.05). The variance explained in MC continuance intentions is to 0.621 (about 62%).

Age was used as another grouping variable. Respondents were divided into 30 and Below group (N = 184) and Above 30 group (N = 172). When data from 30 and below group was used, all the significant path values found in the base model remain. The significant direct effects of masculinity/femininity and uncertainty avoidance remain. The interaction moderation effect of masculinity/femininity also remains on social influence. When data from Above 30 group was used, disconfirmation of social influence was found, for the first time, to have significant impact on both post-usage social influence (0.219, p < 0.05) and satisfaction (0.226, p < 0.05). However, the multi-group comparison tests fail to show any significant difference between the age groups.
DISCUSSIONS AND CONCLUSIONS

The respondents in our study are mostly satisfied with their current MC experiences on the Android platform (Mean=5.24, Mode=6). Post-usage social influence and post-usage privacy protection both exert a strong direct impact on the Android MC users’ continuous intentions, but the later has a negative impact. Both exercise an indirect effect via user satisfaction. Disconfirmation of privacy protection expectation (Mean=3.69, Mode=3) positively and significantly influences post-usage privacy protection. The impact from disconfirmation of social influence expectation (Mean=3.82, Mode=4) on post-usage social influence is also positive but not significant. None of these antecedents shows a significant impact on satisfaction. These findings seem to indicate that post-usage social influence, post-usage privacy protection and user satisfaction all contribute to their continuous decisions. Influences from current social circles might not be stronger than expected but is playing an active and important role in determining user continuous intentions toward MC. Many users believed being under privacy protection (Mean=4.65, Mode=4) when using mobile payments on Android platform, though not better than expected. Their disconfirmation and perceived privacy protection both drive their satisfaction level and hence continuous decision. Unexpectedly, those who felt lower level of privacy protection showed stronger continuous intentions.

Supporting the finding in Srite and Karahanna’s study (2006), Hofstede’s cultural dimension of masculinity/femininity had a significant moderating effect on the relationship between post-usage social influence and continuous intention toward MC, such that this relationship was stronger for feminine value orientations. In another word, those who valued social goals, ego-effacing, or relationship-enhancing tended to be more open to social influence. The other three espoused cultural values - individuality/collectivism, power distance, uncertainty avoidance - did not show any significant moderating effects on the major path relationships in our research model. In line with the prediction by Srite and Bennett (2008), value orientations as the within-culture variances influenced individual user acceptance of technology-based business innovations in our study. Masculinity/femininity had a strong direct impact on Android user MC continuous intentions. We believe that it is in line with current social expectations for males and for matured people to embrace technology innovations and business innovations, in order to guarantee job security, career advancement and success which are the typical features of masculinity.

Uncertainty avoidance had a strong direct impact on satisfaction. Uncertainty avoidance is rooted in the sense of insecurity or unsafety. In the context of mobile commerce, those who prefer to avoid uncertainty tend to have security or privacy concerns. However, we failed to find empirical support for such argument in the empirical data. Those who valued uncertainty avoidance also felt satisfied using their selected MC services. It seems to designate that mobile payments on Android platform are well regulated with little uncertainty to watch for. Privacy protection in our study was negatively related to MC user continuous decisions. Examination of the means and modes shows that though almost half of the respondents did not think the privacy protection was good enough, their privacy protection needs did not seem to affect their decision to continue with MC. The good news is that mobile commerce is more attractive in comparison with their privacy protection needs. Another possibility may be that the participants were not fully aware of the danger they could be in for mobile privacy intrusion (Liu, 2014).

When male group was used for examining possible gender bias on our study results, the relationship paths and the moderation effects showed the same pattern as we saw in the base model. Such bias seems to exist in our study results. When age was used as a control variable,
disconfirmation of social influence showed significant direct impact on both post-usage social influence and satisfaction in Above 30 Group. Respondents older in age tended to feel stronger the social influence, but not dramatically different from younger respondents.

This study is an early effort to examine the impacts of perceived privacy protection and social influence on MC continuance on smartphone platform, with examination of possible moderation from espoused cultural values. The findings are, thus, considerably novel and valuable. Theoretically, such study helps to explore possible impacts of espoused cultural values on MC acceptance. Such effort is valuable in expanding our horizon to factors beyond technology or mobile commerce based factors, and thus, possible to enrich our understanding of mobile commerce acceptance and strengthen the explanatory power of the existing research models. Obviously, Android vendors and mobile payment service providers should devote more resources and efforts toward more active use of social influence to motivate user continuous intentions; and creating a truly data-safe and privacy protective mobile experience to increase positive disconfirmation, improve post-usage perceptions and to boost user satisfaction. Meanwhile, we also admit that because of the convenient sample used, the findings are, to a certain extent, biased for obvious gender imbalance. To deepen our understanding of the roles of social influence and privacy protection in current MC field and to extend our understanding of the effects of social values as within-culture variance, more instrumental factors and better sampling procedures should also be included in the future. Cross-cultural comparison designs should be adopted to gain better comprehension of how people from different countries, of different cultural backgrounds can get committed to MC on a global scale. Thus, valuable implications for research and for MC practitioners can be derived for forging continuance intentions.

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