The Role of Privacy Protection in Mobile Shopping Continuance Using Espoused Cultural Values Perspective

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ABSTRACT

Motivated by the rising privacy concerns in mobile commerce, this study investigated the role of privacy protection in mobile shopping continuance intentions in China and the United States, incorporating espoused cultural values perspective. Data from a US sample of 656 and a Chinese sample of 866 were analyzed using Partial Least Square (PLS) procedures, including the hypothesized predicting role of espoused cultural values. The product-indicator approach was adopted to test the hypothesized moderating effect of the espoused cultural values. Multi-group comparisons were conducted using country, age and gender as the grouping variables. Findings, limitations and implications are discussed thereafter.

INTRODUCTION

Along with the increasing popularity of mobile shopping (using smartphone to purchase from Internet stores) for its convenience and low effort expectancy, China is reportedly to have the largest share of mobile users in the emerging market (45%), and three quarters of them are shopping on smartphones (76.1%) (China Internet Watch, 2016a). On the other hand, 80% of the consumers in the U.S. access the Internet using mobile devices and 63.3% of them were mobile retail users (Chaffey, 2016). It is now strategically critical for mobile vendors to retain current mobile customers and facilitate their continuous mobile shopping to sustain profitability and mobile commerce development (Gao, Waechter, and Bai, 2015). An important task is to examine the underlying drivers of loyalty toward mobile shopping.

In the context of mobile shopping, mobile advertising, mobile marketing, mobile payment, and mobile promotion are either an indispensable part or coexist during the process. A consequential dilemma is that those services are all intrusive in nature (Shankar and Hollinger 2007). The rising privacy concerns and how those concerns are affecting the satisfaction toward mobile shopping have been repeatedly reported (King and Jessen 2010; Meharia 2012; Yang, Liu, Li, and Yu (2015). A top priority for strengthening mobile shopping sustainability is, thus, to manage the public concern for confidentiality and privacy through privacy protection (Purewal 2013; Achadinha, Jama and Nel, 2015; Lu, Wei, Yu and Liu, 2016). Meanwhile, decision to continue with mobile shopping is a type of behavioral decision. Human behavior is under the influences from the cultural environment where they live (Hofstede, 1980; 1984). The cultural contingency perspective is believed useful in discovering critical explanations congruent with individuals’ cultural values (Xiao & Tsui, 2007). Recent studies have conceptualized Hofstede’s cultural values at the individual level to enrich understanding of various human behaviors (Srite and Karahanna, 2006; Raiet al, 2009). Does mobile shopping takes different acceptance patterns among users dwelling in different cultural environments or impacted by user espoused national
cultural values? Is there a universal pattern explaining the role of privacy protection in mobile shopping continuance inclination?

Understanding how technology use differs across cultures is a key topic in e-commerce research (Zhang, Zhu and Liu, 2012; Chung, 2014). Most mobile commerce solutions are tailored for worldwide consumption. It is, thus, a significant challenge to successfully engage mobile shoppers with various cultural backgrounds (Hoehle, Zhang and Venkatesh, 2015). However, researchers have noticed that culture has not been given its due regarding its impact on continuance behavioral intentions associated with mobile services. Specifically, there is an inadequacy of research studies exploring the influences of espoused cultural values on the role of privacy protection in mobile shopper continuance decision process.

This paper focuses on answering the following research questions: (1) Does perceived privacy protection helps to explain individual continuance decision toward mobile shopping across China and the United States? (2) Do espoused national cultural values influence perceived privacy protection in the same way across China and the United States?

**MODEL AND HYPOTHESES DEVELOPMENT**

To answer the research questions, a mobile shopping continuance model rooted in UTAUT theory (Venkatesh, Morris, Davis, and Davis, 2003) integrating espoused national cultural values was developed. This paper argues that user continuance intention toward mobile shopping on the smartphone platform is collectively driven by perceived private protection, performance expectancy, and perceived effort expectancy, under the influences of user espoused cultural values along the cultural dimensions created by Ofstede (1980, 1983; Ofstede and Bond, 1988; Srite and Karahanna, 2006). That espoused cultural values may serve as a powerful determinant of mobile shopper perceptions and behaviors, as well as a strong moderator of the nomological network of their behavioral decisions (Cleveland and Chang 2009; Pookulangara and Koesler 2011). Since the effects of effort expectancy, performance expectancy are confirmed in a number of continuance studies (Yang, 2010; Lu, 2014; Lu, Wei, Yu and Liu, 2016), those constructs are kept in the model for further confirmation. The focus will be on the impacts of perceived privacy protection and the espoused cultural values.

**Espoused individualism/collectivism**

Espoused individualism/collectivism pertains to an individual’s preference for a social atmosphere under which individuals care about themselves (individualism) as opposed to where individuals expect the group they are a part of to look after them in exchange for their loyalty (collectivism). Hofstede (2001) explained that individualism suggests a lifestyle in which the person tries to be self-sufficient and not dependent on others. Those who value individualism rely more on media and less on their social networks for information. Because of such cultural attributes, people from collectivistic cultures tend to show higher levels of conformity, whereas individualistic cultures place higher emphasis on individual initiative (Hofstede, 1984; Bond and Smith,1996). Triandis (1989b) once argued that people who hold individualistic values have a private self. As such, their own goals, beliefs, and values are more salient. They tend to focus on the development and maintenance of a separate personal identity (Oyserman, 1993).
Privacy is the ability of individuals to control when, how, and to what extent their personal information is exchanged with and used by others (Wang, Hong, Xu, Zhang, and Ling 2014). Privacy can generally be categorized into identity privacy (right to keep her own identity information), user contextual privacy (where and when to locate them), and information privacy (user right to authorize disclosure and use of the data they have a claim to). Privacy concerns arise, when users feel that their personal interests and locations are monitored by firms beyond their control, when their personal data are intentionally collected, disclosed, transmitted, or sold without their knowledge or permission (Yang, Liu, Li and Yu, 2015).

Using mobile apps typically requires the disclosure of location data, which often accompanies requests for various other forms of private information (Keith, Thompson, Hale, Lowry, and Greer 2013). Researchers found location and time exacerbate privacy concerns. Such concern may get even worse when combined with message reliability and profiling for delivery of mobile commercial information (Wang, Hong, Xu, Zhang, and Ling 2014). Unfortunately, mobile shopping, to a large extent, is subject to mobile tracking, mobile profiling and losing shopper identity privacy. Some researchers believe that the 'notice and consent' privacy control mechanism is insufficient for meaningful privacy protection in the era of Big Data (Liu 2014). Quite a few scholars proposed alternative m-payment schemes to better protect user privacy (Li, Sun, Wang, Zhang, and Zhang 2011; Konidala, Dwijaksara, Kim, Lee, Lee, Kim, and Kim 2012; Piao, 2016).

Based on the attributes of the individualistic cultural value, mobile shoppers who espoused individualistic value should treasure privacy protection much better than those who espoused collectivistic values, and have much stronger desire to have their own identity and information protected. They should be more sensitive to the conceived quality of privacy protection, and such sensitivity is more likely to affect their continuance decisions, than those who espoused collectivistic cultural values. Literature reveals that the level of concern about privacy of personal information varied across countries (Milberg, Smith, and Burke, 2000; Bellman and colleagues, 2004). Researchers found that countries that place a high value on collectivism tend to be less sensitive to privacy concerns than countries that value more individualism (Chen, Zhang and Lee, 2013). China scored considerably lower on individualism. In such culture, interdependence between the group members, group interests and group benefits have been much more valued than independence, personal interests and rights (Hofstede, 2001). People there must have valued privacy less and protected privacy less by tradition. This leads to the argument that espoused cultural values of individualism/collectivism may serve as a predictor or a moderator in mobile shopping continuance decision process. Thus, we posit

Hypothesis 1: The relationship between perceived privacy protection and continuance intention toward mobile shopping on smartphone platform is moderated by the espoused cultural value of individualism/collectivism such that the relationship is stronger for individuals with espoused individualistic cultural values, and stronger for the American mobile shoppers than for the Chinese counterpart.

Hypothesis 2: The espoused cultural value of individualism/collectivism has a strong influence on perceived privacy protection toward mobile shopping continuance intention.
Espoused power distance

At the individual level of analysis, power distance refers to the extent to which people with less power accept and expect differentials of power and inequality (Hofstede 1984). Individuals who value high power distance tend to be more concerned about complying with their superiors’ opinions, conforming to the ideas or suggestions from those they render as important, and will fear to disagree with them (Hofstede, 1984). The reason is clear - they hope to avoid criticism or penalty. Further, these individuals are likely to leave decisions to the judgment of their superiors (Hofstede and Associates 1998) and comply with whatever this decision may be.

Literature also shows that the bigger the power distance, the more important is the privileges and special benefits corresponding to the social hierarchy (Hofstede 1984). Chung (2014) in his exploration of cultural values on intention to adopt mobile commerce among Y Generation discovered that power distance significantly influenced the degree to which the value of an innovation is visible to others. By his finding, the value of privacy protection can also be handed down from people of more powerful and higher status to those of less powerful and lower status. Moreover, the tendency to value privacy protection by those who value power distance might be a revelation of mistrust which is always present in high power distance country (Hofstede, 2001; Yang, Zhou, Li and Yan 2015).

Although the value of privacy protection in China at large may not be comparable to the situation in the West (Zhang, Chen and Lee 2013), the Chinese society recognize the right to privacy as a privilege. Thus, mobile shoppers there may assume the right to demand proper privacy protection in mobile sphere. This leads to the argument that espoused cultural value of power distance may serve as a predictor or a moderator in mobile shopping continuance decision process. We, thus, develop the following hypotheses:

Hypothesis 3: The relationship between perceived privacy protection and continuance intention toward mobile shopping on smartphone platform is moderated by the espoused national cultural value of power distance such that the relationship is stronger for individuals who espoused higher power distance values, and stronger for the Chinese mobile shoppers than for the U.S. counterpart.

Hypothesis 4: The espoused national cultural value of power distance has a positive influence on perceived privacy protection in the context of mobile shopping on smartphone platform, and such influence is stronger for the Chinese mobile shoppers than for the U.S. counterpart.

METHODOLOGY

To provide answers to the research questions, we used two samples and the data were collected from China and the US respectively in 2015.

Our target populations were the voluntary mobile shoppers on smartphone platform in China and the United States. China is most representative of Eastern culture, while the United States is often cited as a typical instance of Western culture (Shenkar & Ronen, 1987). It is expected that the representative samples from these two countries will help to illustrate the true roles of
espoused national cultural values in individual continuance decision process. By studying smartphone based mobile online shoppers from these two countries, we expect to see how the espoused cultural values work on the behavioral decisions on the mobile shoppers from typical oriental and western cultural environments.

Our study adopted the design of a cross sectional survey. For testing our research model and the hypotheses, a questionnaire was constructed in English comprising filtering demographic questions, questions of our continuance model, and items of espoused national cultural values. Almost all the items were adapted from relevant previous studies. Specifically, Items measuring privacy protection were adapted from Moon and Kim’s study (2001). Items on perceived effort expectancy, performance expectancy, and continuance intention were adapted from those used in UTAUT (Venkatesh, Morris, Davis and Davis, 2003).

Regarding the cultural dimensions, our items on individualism/collectivism and on power distance were adapted from those used in the study by Srite and Karahanna (2006) to insure consistency at the individual level of analysis. Seven-point Likert scales, with anchors ranging from ‘strongly disagree’ to ‘strongly agree’, were used for most scale questions to ensure consistency with previous studies.

A pilot study was conducted in a regional university in the US. The correspondents were asked to make comments on the wording and design to ensure quality. Some recommended changes were integrated in the final version. The scale reliability tests revealed Cronbach alpha values of above .70 on all the constructs. Since the questionnaire was to be used in China as well, the items were translated into Chinese language, and back translated into English to ensure cross-language equivalence in meaning (Brislin 1970). Some experts in Beijing were consulted on the Chinese version of the instrument. Some items were added, restructured or altered to ensure correct comprehension by mobile shoppers in China.

Data were collected in Illinois, Florida and Texas in the United States and four cities in China using different language versions of the same instrument in summer 2015 via online and offline surveys. These cities were chosen to represent mobile shoppers scattered in different regions of each country. A professional online survey website was used to guarantee access control, authentication, and avoidance of multiple responses from the same respondents (Stanton and Rogelberg 2001). The respondents in each country were first solicited by the authors on different university campuses and told to invite connections from their social circles to take the survey. Only data from those who did mobile shopping online were used in the study. After excluding those with incomplete answers, extreme answers (all 1s or all 7s), and those failed to answer the reverse coded items, the valid US sample comprises 656 mobile shoppers, representing 59.8% of the 1098 responses from the US. The valid Chinese sample has 866 responses, achieving a response rate of 64.6% out of 1341 data entries from China.

RESULTS

Descriptive data analysis reveals that the American sample obviously has more iPhone users (55.3%) than the Android phone users (29.1%). To the contrary, Android users (N=66.4%) in the Chinese sample almost tripled the number of the iPhone users (20.6%). The female mobile
shoppers (N=336) is close to the number of male shoppers (N=320) in the US sample. The male respondents (N=406) in the Chinese sample, however, obviously over-numbered the female respondents in China (N=255). Mobile shoppers aged below 30 (N=420) almost doubled those above 30 (N=237) in the US sample. The pattern is similar in the Chinese sample, mobile shoppers aged below 30 (N=458) doubled those aged above 30 (N=203). This gender distribution corresponds closely to recently reported statistics in the literature – 67.8% for male and 32.2% for female (iResearch China 2014). The two samples in this study seemed to have some characteristics in common - a group of matured, well-educated and experienced users of mobile shoppers with varied backgrounds.

We calculated the descriptive statistics on all the construct variables by country. The mean values from the two countries along the model constructs show a similar trend. This seems to suggest that national stereotypes do not provide a complete and accurate representation of culture (Hoehle, Zhang and Venkatesh, 2015). We then performed factor analysis on all the model construct indicators. All the construct indicators received a factor loading greater than 0.5. We, thus, keep them in data analysis for comparison. We examined the psychometric properties of the constructs in our research model using each sample based on the following rules: (1) composite reliability for internal consistency exceed .70; (2) loadings are greater than cross-loadings; (3) the average variance extracted (AVE) exceeds .50; and (4) the square root of the average variance extracted (AVE) exceeds the inter-construct correlations (Chin 1998; Fornell and Larcker 1981). Survey items that violated these guidelines were eliminated from further data analysis. The results from our reliability and validity tests seem to comply with the rules very well for both samples.

Before proceeding with our model and hypotheses testing, we also examined the common method variance (CMV) for each sample. The CMV value for the American sample is very low (CMV = 18%). The Chinese sample has a CMV value of 37% which is lesser than 50% threshold (Wong, Tan, Tan and Ooi, 2015). Moreover, the confirmatory factor analysis showed that the single-factor model did not fit the data well, $\chi^2 (80, N=866) = 5187.056$, p=.000, GFI= .517 ; CFI= .620; TLI= .614; SRMR= .278; RMSEA = .222. The result helps to suggest that CMV is not of great concern and, thus, is unlikely to confound the interpretations of results (Being, 2007).

We first pooled the data sets together to see if the mobile shopping base model explains for continuance regardless the country borders. Results obtained in PLS indicate acceptable internal consistency and discriminant validity (Nunnally, 1978; Fornell and Larcker, 1981). The research model was supported by the empirical data from the pooled data set, as well as each sample. The variance when explained by the pooled data set is 44.4%. The variance explained by the US sample is only 22.2%. The variance explained by the Chinese sample was 55.6%. Since the variance explained by each sample exceeds 15%, we conclude that this model has solid predictive power in explaining mobile shopping continuance intention (Hew, Lee, Poi and Lin, 2016).

Then we examined the paths of the structured base model for the pooled sample and for each country sample. Perceived privacy protection was only significantly influencing mobile shoppers’ continuance intention among the Chinese respondents (-0.136, p< .10). Similar results were
noticed before in a mobile social commerce study by Hew, Lee, Ooi and Lin (2016) and in a mobile payment continuance study by Lu, Wei, Yu and Liu (2016). One explanation is that after the trade-off estimation between continuing with mobile shopping and taking privacy risks, the Chinese respondents found mobile shopping worthy despite the questionable privacy protection. Nevertheless, such finding was only true in the Chinese sample, from the commonly believed collectivist cultural environment. As an additional finding, perceived privacy protection is discovered to have a direct positive impact on perceived performance expectancy (p < 0.10) in every of the three data sets. Literature demonstrates that mobile users always face a trade-off decision between receiving useful commercial services and avoiding privacy invasion (Li, Sarathy, and Xu 2010; Xu, Luo, Carroll, and Rosson 2011). When they believe they are risking more than what they could benefit, they would judge mobile commerce useless, and decide to discontinue. The fact that such relationship is stronger among the American mobile shoppers may more or less reflect the value system of pragmatism, the philosophical foundation of the culture in the US.

The first research question driving this study is whether perceived privacy protection helps to explain individual continuance decision toward mobile shopping across China and the United States. In terms of variance explained in the study, our research model seems able to explain individual mobile shopping continuance intention. However, when the structural paths from perceived privacy protection are examined, obviously the paths do not work the same way or at the same magnitude for each country in our study. Moreover, even the retained model constructs such as perceived ease of use and perceived usefulness worked on mobile shopping continuance intention differently in different countries. Our findings seem to support the findings from some previous studies (Schepers and Wetzels, 2007; Zhang et al., 2012) that perceived ease of use is critical in eastern culture, while perceived usefulness is more important in western culture. This finding confirms the conclusion made by McCoy, Galletta and King (2007) that popular acceptance model may not apply well to people with varied cultural orientations.

Our second research question is whether espoused national cultural values influence perceived privacy protection in the same way across China and the United States. To prepare for answering this question, we compared the relevant country index scores from our study with those reported by Hofstede (2001). Interestingly, the score on individualism from our US sample is significantly lower (39) than the one reported in Hofstede’s study (91). The score on power distance from the Chinese sample is also much lower (56) than the one reported by Hofstede (80). Obviously the samples in this study seem to have espoused the national cultural values somehow differently than commonly understood. In another study, the younger Chinese managers scored much lower on some traditional values than their counterparts from the preceding generation cohorts (Egri et al., 2004). A recent study by Zhang and Wu (2014) reported current Chinese national culture index scores. Interestingly, their score on individualism was higher than ours and the score on power distance was even lower. They argued that current Chinese national culture profile should be dramatically different from the traditional wisdom along the five national cultural dimensions. It is easy to explain for the low score on power distance. Hofstede explained the decrease in power distance in many countries by increased educational level (2001). According to Adler (1997) an individual’s ethnic culture is also deeply ingrained by the time the person reached adulthood. With economic growth rates averaging 10% over the past 30 some years, China has almost become a largest economy in the world (Zhang and Wu, 2014). Many mobile shoppers in
our study belonged to generations X and Y. They were exposed to the values of high technology innovations in their childhood and have witnessed China’s tremendous economic success. They grew up in times of relative socioeconomic prosperity and security. The differences in age and life experience tend to make them take on more post-modernist values such as self-expression and independence, while paying less respect for the traditional oriental merits such as group interests and obedience to authorities (Brooks & Manza, 1994; Inglehart & Baker, 2000; Ofstede, 2001).

The United States are commonly believed to adopt the culture of small power distance and strong individualism (Hofstede, 2001). The US sample in our study, however, shows an unexpectedly lower score (39) on individualism. One possibility could be that the mobile channel itself is highly social. Many shoppers were actually recommended by their friends from mobile social circles or landed on the shopping sites through the links embedded in mobile social media. Thus, the American mobile shoppers in our study were fairly highly exposed to mobile social influences. And those who espoused lower level of individualism are naturally more easily influenced.

In order to test Hypotheses 1, we used the product-indicator approach to examine the hypothesized moderating effect from the espoused cultural values of collectivism/individualism on the relationship between perceived privacy protection and continuance intention toward m-shopping on smartphone platform. Our test shows that such hypothesized moderating effect is not significant in the pooled data set (t=0.277, p > .10). We then used the Chinese sample and the US sample respectively and did not find any significant moderating effect (t=0.855, p > .10; t=0.395, p > .10). None of the group comparison tests using age, gender and experience shows any significant result, either. However, the hypothesized impact of espoused cultural values of individualism/collectivism on perceived privacy protection is significant in the pooled set (r=0.322, t=3.503, p< .001). Such impact is obvious but not significant when each country sample was used respectively. Thus, Hypothesis 1 is rejected, but H2 is retained.

A look into the data shows that those who espoused collectivist cultural values tended to give high scores on privacy protection items, while those who were more of an individualist tended to have more concerns over the effectiveness of current privacy protection with regard to mobile shopping. This finding strongly supports the argument that those who are more of an individualist tend to be more sensitive to the conceived quality of privacy protection. The finding seems to confirm the cultural tendency that individualists care more of a private self and the development and maintenance of a separate personal identity even in the context of mobile shopping.

In order to examine the hypothesis 3, we used the pooled set and then each country sample to test the possible interaction between the espoused value of power distance and perceived privacy protection. The product-indicator approach in PLS shows that such relationship does not exist in any of the samples in our study. None of the group comparison tests using age, gender and experience shows any significant result, either. Hypothesis 3 is thus rejected. To examine the hypothesis 4, we added the direct relationship from espoused power distance to perceived privacy protection in the model. Our test shows a very significant result using the Chinese sample (r=0.347, t=3.98, p< 0.001), a significant but smaller effect in the US sample (r=0.176,
t=1.663, p<0.10), and even weaker in the pooled set. None of the group comparison tests using age, gender and experience shows any significant result, either. Thus, Hypothesis 4 is only supported by the empirical data from China.

DISCUSSIONS

Our research model is more explanatory for the Chinese sample. The espoused cultural values worked on the Chinese respondents much stronger than on the American respondents. This leads one to believe that cultural differences still play a dominant role (Clark 1990; Steenkamp et al. 1999; Hofstede 2007; Takada and Jain 1991) in determining the values of people in different countries and ultimately their behavior (Markus and Kitayama 1991; Triandis 1989). The comparatively weak effects of espoused cultural values on the American counterparts need further investigation.

We have to admit that some of the findings and the failure to confirm certain hypotheses that were supported in prior studies might be the random effect due to the characteristics of the samples used, since both samples used in the study are convenient samples. Nevertheless, this study is one of the initials in exploring mobile shopping continuance intention using espoused cultural perspective. It shows the importance of understanding cross-cultural convergence and divergence in the context of mobile shopping. This study provides additional evidence on the dynamic roles of espoused cultural values in determining individual continuance decision process. The findings seem to show that next to a noticeable convergence under the influence of common economic and technological influences, cultural orientation will continue to differ among countries (Hofstede, 2001; Ralston, 2008).

Mobile vendors should understand that certain instrumental predictors of mobile shopping such as their perceived privacy protection, and even the continuance decision itself are more or less rooted in user espoused cultural values of individualism and power distance. Mobile advertisements, promotion programs and incentives should be designed and conducted to cope with user preferences and their cultural orientations. With a comparatively decreased power distance preference and a higher individualistic orientation among the mobile shoppers than we originally expected, there is a strong need for a better privacy protected mobile shopping environment. There is also a need for many to get aware of the privacy protection mechanisms and their own rights when confronting data frauds in the mobile sphere. It is strategically important to use the most updated technology and procedures to create a truly data-safe and privacy protected mobile shopping experience on the smartphone platform, to improve user perceptions, and to sustain continuance intentions effectively.

References available upon request.