

Perceived Risk of Mobile Banking in China

Shuang Cheng¹, Sang-Joon Lee¹, Kyeong-Rak Lee²

¹ Graduate School of Business Administration, Chonnam National University,
Yongbong-dong, Buk-gu, Gwangju, 500-757, Korea
shuang87512@hotmail.com, s-lee@chonnam.ac.kr

² Free21+ e-Service Team, Interdisciplinary Program of Electronic Commerce, Chonnam
National University, Yongbong-dong, Buk-gu, Gwangju, 500-757, Korea
kryi0807@chonnam.ac.kr

Abstract. Mobile banking provides a convenient and personal financial service beyond time and space. Although there are many studies on the adoption intentions for smartphone-based mobile banking, there is no apparent effect on the popularity of it. This is because the smartphone users have a resistance to innovation on mobile banking, but there are few studies on the resistance to it. Perceived risk is a major factor which influences user's resistance behavior to smartphone-based mobile banking. So if we want to know the reasons why people don't use smartphone-based mobile banking, we have to know which factors will influence consumer's perceived risk. Thus, this research focused on investigating the correlation between social influence, perceived security, perceived protection of private information, perceived complexity, trust and perceived risk respectively in China market. And then we investigated the correlation between perceived risk and user resistance.

Keywords: Mobile Banking, Perceived Risk, User Resistance

1 Introduction

In China, the penetration rate has increased dramatically in the recent years with the number of smartphone users reaching over 267 million as of end of 2012. The number of smartphone-based mobile banking users in China exceeded 98 million by the end of 2012, with 71.89 million users registering for the services between late 2010 and late 2012. With respect to the use of smartphone-based mobile banking services, the number of transactions and the amount of money transacted are both increasing with the widespread use of the devices. Based on the current trends, it is predicted that the number of smartphone-based mobile banking users in China will reach nearly 311.62 million by 2015 [1].

When there is development of new information technology, related research studies inevitably ensue. Although there are many studies on the adoption intentions for this particular service, there is no apparent effect on the popularity of it. This is because the smartphone users have a resistance to innovation on mobile banking, but there are few studies on the resistance to it. Perceived risk is a major factor which influences user's resistance behavior to smartphone-based mobile banking. So if we

want to know the reasons why people don't use smartphone-based mobile banking, we have to know which factors will influence consumer's perceived risk.

Accordingly, this study was conducted with an aim to examine and identify the relationship between the various factors related to smartphone-based mobile banking, including social influence, perceived security, perceived protection of private information, perceived complexity and trust, and perceived risk, as well as between the perceived risk and user resistance. The significance of this study is that financial institutions and telecommunications companies of China could potentially establish new and more accurate strategies based on the resistance factors identified in this study to gain more profits.

2 Literature Review and Research Hypothesis

Sheth(1981) introduced the concept of 'innovation resistance' and claimed that its key causes were the 'habits' formed based on the existing customs and practices and the 'perceived risk' of adopting the innovation. He claimed that the perceived risk increased user resistance to innovation [2]. User resistance is the intent to avoid and refuse to use mobile banking services [3]. Perceived risk is the degree of threat or negative impact arising from the use of the innovation that is perceived by the users [4].

Social influence refers to a situation in which people agree with the reputation of mobile banking [5]. Perceived security is the degree of protection provided by the bank to meet the users' security demands that is perceived by the mobile banking users [6]. Perceived protection of private information is the degree of private information protection provided by the bank that is perceived by the mobile banking users [7]. Perceived complexity is the degree of complexity or difficulty of using mobile banking services perceived by the mobile banking users [8]. Trust is the degree of accuracy and reliability of mobile banking services perceived by the mobile banking users [9].

Based on the literature reviews above, we formulate the hypothesis as follows:

H1: Social Influence(SI) has a positive relationship with Perceived Risk.

H2: Perceived Security (PS) has a negative relationship with Perceived Risk.

H3: Perceived Protection of Private information(PPP) has a negative relationship with Perceived Risk.

H4: Perceived Complexity (PC) has a positive relationship with Perceived Risk.

H5: Trust(TR) has a negative relationship with Perceived Risk.

H6: Perceived Risk (PR) has positive relationship with User Resistance(UR).

3 Data Collection and Analysis

In order to test the hypothesis, a survey was conducted with students and employees in China as the subjects. In the questionnaire, the measurement items for the variables were measured based on a 5-point Likert scale. The demographic characteristics of

the sample population were as follows. Of the 200 respondents, 110 (55.0%) were male and 90 (45.0%) were female. With respect to age, 190 (95.0%) were under the age of 30 and 10 (5.0%) were over the age of 30.

In this study, the reliability of multi-item scale was measured by determining the Cronbach's α . The Cronbach's α coefficients for all the measurement variables in this study were calculated to be higher than 0.8 with high internal consistency, based on which it can be determined that the scale was highly reliable.

The reliability of the questionnaire used in this study was measured by factor analysis. For the factor analysis, factors with an eigenvalue, signifying the amount of dispersion explained by the factor of 1 and higher were selected. The factor loadings of all items were above 0.7. Therefore, the validity of the measurement tool can be seen that there is no problem.

Before performing a regression analysis to test the hypothesis, Pearson's correlation analysis was conducted to identify the correlation between the variables and their descriptive statistics. According to the results of correlation analysis, there was a significant correlation that was consistent with the direction predicted in the hypothesis.

In order to verify the factors influencing perceived risk, social influence, perceived security, perceived protection of private information, trust and perceived complexity were set as independent variables and the perceived risks as a dependent variable for a multiple regression analysis, and perceived risk was set as independent variables and the user resistance as a dependent variable for a simple regression analysis. The results of regression analysis are shown in Table 1.

Table 1. Regression Analysis

Dependence Variable	Independence Variable	Beta	T	P-value	Tolerance	VIF
PR	(constant)		6.557	.000		
	SI	.444	7.220	.000	.852	1.173
	PS	.032	.490	.625	.762	1.313
	PPP	-.113	-1.799	.074	.817	1.223
	PC	.202	3.302	.001	.858	1.165
	TR	-.195	-3.259	.001	.895	1.117
$R^2=0.375$		Revised $R^2 = 0.359$		F = 23.279	p-value=0.000	
UR	(constant)		6.628	.000		
	PR	.411	6.348	.000	1.000	1.000
$R^2=0.169$		Revised $R^2 = 0.165$		F = 40.298	p-value=0.000	

The results of the multiple regression analysis with respect to the regression coefficient (beta) of each of the independent variables are as follows: regression coefficient (beta) for social influence was a significant positive value of 0.444 ($p=0.000$); perceived security, an insignificant value of 0.032 ($p=0.625$); perceived complexity, a significant positive value of 0.202 ($p=0.001$); perceived protection of private information, an insignificant value of -0.113 ($p=0.074$); and trust, a significant

negative value of -0.195 ($p=0.001$). Based on these results, it can be determined that the perceived risks increase at higher social influence and perceived complexity, and lower trust. With respect to the degree of the influence of the selected factors on the perceived risk, social influence had the greatest influence, followed by perceived complexity and trust. These results support hypothesis 1, 4 and 5.

The regression coefficient(beta) between perceived risk and user resistance was 0.411 ($p=0.000$), based on which it can be determined that higher the perceived risks, the higher the user resistance. This result supports hypothesis 6.

4 Implications and Conclusion

The banks need to establish a strict and thorough security policy and make their customers aware of the fact that there are low risks associated with mobile banking in order to minimize the negative social influence on perceived security, in addition to reinforcing and supplementing the security measures from the technical aspect.

We know many consumers perceive the authentication procedure for security to be quite complex. This means that it is necessary for banks to implement simpler log-in and authentication procedures, under the premise that this does not reduce the level of security.

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