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## Factors Influencing the Behavior Intention of E-Banking Transactions through Mobile Phones in China

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### Abstract

With the growth of using e-banking transactions through mobile phones in China, it brings along with the convenience of people's lives as it enables people to have access to banking services anywhere and at any time as well as it conducts business more effectively. Technology acceptance model (TAM) has been applied in different contexts to examine a wide range of information technology. With mobile transactions popularity, online payments grew 33.8 percent year over year since 2014 (Marketing China, 2015). It is necessary to investigate the factors influence on customers' behavior intention towards the e-banking transactions through mobile phones. The study employed convenience sampling technique to collect data from 500 respondents of e-banking of mobile users. The results revealed that perceived compatibility and mobility significantly affect to perceived usefulness, and further perceived usefulness significantly affect behavior intention of using e-banking through mobiles. It also examined that perceived usefulness as a mediator between the relationship of perceived compatibility and behavior intention as well as the relationship between mobility and behavior intention.

**Key Words:** Perceived Compatibility, Mobility, Perceived Usefulness, Behavior Intention

### INTRODUCTION

With the sky rocking a number of smartphone users and popularizing of internet worldwide, there with the phenomenal growth of e-banking transactions through mobile phones. According to a recent forecast (Internet world, 2015), e-commerce would be dominated by smartphone technology in 2017. It was developed 45% e-consumers in Asia have been doing online transactions through smartphones (Criterio, 2014). Based on data of China Financial Certification Authority (2015) underlined that 35.6% customers utilize online banking while 17.8% of them use mobile banking, and the number of clients using e-banking through mobile increased 50% year-on-year. As the popularity of mobile banking has increased, there are a variety of mobile-commerce services, which include mobile shopping, mobile financial and mobile entertainment as well as it would search information through mobile (Khalifa & Shen, 2008). Thus, mobile developed to be a commerce device that deliver unique value to users by extending the boundaries set by traditional e-commerce devices (Raisinghani & Hanebeck, 2002; Balasubramanian et al., 2002). Technology is considered to be the key driver put forward the world changing promptly around us. The wide use of internet and technology advancement in, it leads to improving e-banking services of various banks technology-based systems play an important role for companies

interact with customers. E-banking of Mobile phones has been widely using in both developing and developed countries as well as it is great potential to extend the provision of financial services. Mobile banking refers to the execution of transactions with monetary value with the application of wireless communications networks and devices. It developed an important self-service delivery channel that allows customers via the web services technology and mobile services banks to gain information and service.

## LITERATURE REVIEW

### Technology Acceptance Model

Davis (1989) posited that technology acceptance model (TAM) refers to a cost-benefit paradigm based on users' cognitive evaluations on a certain action and its result, and it has been used to predict individual's intention to buy and use a particular piece of technology (Davis, 1989; Davis et al., 1989). TAM targeted on the evaluation of end-users. With the increase of smartphone users, it has also been applied to evaluate mobile e-banking transactions. TAM has been conducted from a task-oriented perspective. While the popularity of smartphones is closely connected to people's lives, which indicated that the widespread of mobile e-banking relies on its capability in facilitating online transactions quickly and conveniently. In order to study the association of perceived mobility, perceived compatibility, perceived usefulness and behavior intention model, the research model is conducted as presented in Figure 1. Based on the technology acceptance model 2 (TAM2) that suggested by Venkatesh and Davis (2000), perceived usefulness is one of the determinants of users' behavior intention to use technology. This study also looks out antecedents of perceived usefulness.

### Perceived Compatibility

Compatibility refers to a perceived innovation which regarding to the degree of consistency of existing values, past experiences, and needs of potential adopters (Rogers, 1983). Compatibility is regarded as an antecedent of Roger's diffusion of innovation (DOI) theory, has been widely quoted in researchers that investigate the factors influence on the penetration of innovative technologies (Mallat et al., 2009; Chen et al., 2002; Wu & Wang, 2005). Further described innovations successful appears to be especially when users are able to adopt them seamlessly. The more compatible the innovation, the faster the adoption rate will increase. Smartphones have been diffusion in many domains of human activities including education, work, entertainment and social relationships. This penetration is useful for establishing users' values and experiences. Smartphones have been deeply penetrating into people's lives. Many users even feel uneasy to spend a day without their phone that carries their entire virtual presence and organizes their daily activities. If a user perceives anxious without the device which means the phone is compatible with their values and experiences, other mobile-services will be adopted.

### Mobility

Kim et al., (2010) underlined that perceived mobility refers to the degree of prospective benefits which are provided by mobile technologies, which includes the information access, communication, and services anytime and anywhere. Most studies found mobility was an antecedent of adopting mobile service and influenced on users' intention (Schierz et al., 2010, Kaba and Osei-Bryson, 2009). As noted by Schierz et al., (2010) individual mobility as a major contributor to intention to use mobile e-banking services, and Kaba and Osei-Bryson (2009) further described that mobility is capable of affecting mobile phones use in Quebec. Consequently, flexibility and accessibility have been identified as a major contributor to mobile-commerce adoption (Kim et al., 2010). Likewise, the strong mobility of smartphone technology has already integrated users' lives with which they can conduct mobile payment services anywhere and at any time (Mathew et al., 2004).

### Perceived Usefulness

Perceived usefulness refers to the subjective assessment of expected users using a specific application system will increase their exist context (Venkatesh and Davis, 2000). Based on TAM2 theory (Venkatesh and Davis, 2000) mentioned that perceived usefulness and perceived ease-of-use directly influenced on users' intention. Evidence outlined by Davis (1989), "people tend to use or not use an application to the extent they believe it will help them perform their job better". Perceived usefulness signifies that the degree of customers' assessment on

making transactions via a smartphone will make business more convenience and efficient his or her performance (Davis, 1989).

### **Behavior Intention**

Behavior intention is defined as consumer readiness and likelihood to use a special piece of technology (Peña & Brody, 2014; Ajzen, 1991). With the diffusion of smartphones, the wireless mobile-service have already integrated into users' lives, which means they are willing or intend to apply the e-banking transactions through mobile phones. Behavior intention is the only dependent variable in this study. Prior studies identified many factors that might affect behavior intention such as perceived ease of use, social influence, or mobility (Venkatesh, & Morris, M., 2000; Yseen, Pederson, P.E. & Thobjornsen, 2005). Based on the technology acceptance model 2 (TAM2) that suggested by Venkatesh and Davis (2000), perceived usefulness is one of the determinants of users' behavior intention to use technology.

### **The relationship among Perceived Compatibility, Mobility, Perceived Usefulness and Behavior Intention**

Evidence outlined by Kim et al. (2010) mobility had a positive effect on the perceived usefulness of mobile payment, while Schierz et al. (2010) reported that there is not a positive relationship between individual mobility and perceived usefulness in the context of mobile e-banking transactions services. As noted by Kim et al. (2010) reported that mobility has no positive influence on the perceived usefulness of mobile payment. However, several previous mobile types of research investigated that there was the positive influence of perceived usefulness on users' intention (Xue et al., 2012, Kim et al., 2010, Wu et al., 2011, Chen et al., 2009). Based on (Mallat et al., 2009) suggested that compatibility has a positive effect on consumers' intention to use mobile e-banking. Chen et al. (2002) further described that compatibility has a positive effect on consumers' behavior intention toward utilizing a virtual store. Meanwhile, Wu & Wang (2005) has notified that compatibility was capable of affecting the perceived usefulness of mobile-commerce. Several previous mobile types of research has examined the consistency of users' needs, values, and past experiences to make a purchase via a smartphone, and the compatible innovation as one determinant of perceived as useful, the results identified that there was a positive relationship between usefulness and intention to adopt an application (Segars & Grover, 1993; Szajna, 1996; Ha et al., 2007), such as mobile-games (Ha et al., 2007) or electronic mail systems (Szajna, 1996).

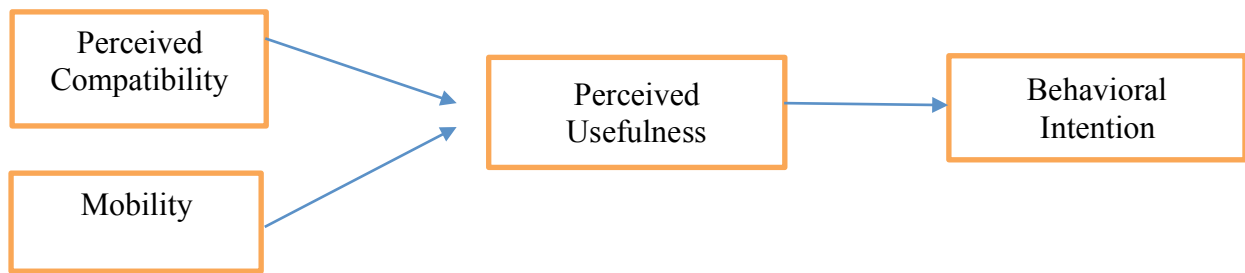
## **RESEARCH METHOD**

The quantitative research approach was adopted using an online questionnaire survey with a 5-point Likert scale to measure the dependent variable and independent variables. Behavior intention as a dependent variable. A total of 800 email invitations were sent to potential respondents, which adopted convenience sampling technique, 500 out 800 completed questionnaires were valid for analysis after screening and filtering. The measurement instrument used questions from previous research. The measurement of behavior intention adopted from Lu and Su (2009) and Chen et al. (2002), while the questions adopted for measuring the independent variables were as follows: 'perceived usefulness' adopted from Yu et al. (2005); the scale of 'compatibility' was adopted from Chen et al. (2002) and Vijayasarathy (2004); 'mobility' was adopted from Hong et al. (2008). The research model in Figure 1 below illustrates the factors that have been hypothesized affecting users' behavior intention to use e-banking transactions through mobile phones.

### **Research Hypotheses**

- H1: There is a positive relationship between perceived compatibility and perceived usefulness.
- H2: There is a positive relationship between mobility and perceived usefulness.
- H3: There is a positive relationship between perceived usefulness and behavior intention.
- H4: There is a mediating effect of perceived usefulness between compatibility and behavior intention.
- H5: There is a mediating effect of perceived usefulness between mobility and behavior intention

Figure 1



### ANALYSIS AND FINDING

From table 1 it displayed that the correlation coefficients for each path, that is, the links between each of the variables are statistically significant. These results indicate that, at the bivariate level, each of the conditions necessary to test for the possible role of a mediator has been met. In order to conduct the Sobel test for mediation (Sobel, Michael E. 1982).

Firstly, to compute the raw regression coefficient and the standard error for this regression coefficient for the association between the IV and the mediator,

Secondly, to test the association between the mediator and the DV.

Lastly, to compute the regression coefficient and standard error for the association between the IV and the mediator.

**Table 1: Direct Relationship Correlations and P-value – Mediation Model**

average_PC	average_PC	average_PU	average_BI
Pearson Correlation	1	.567	.411
Sig. (2-tailed)		.000	.000
averagePU		1	
Pearson Correlation	.567**		.506**
Sig. (2-tailed)	.000		.000
average_BI			1
Pearson Correlation	.411**	.506**	
Sig. (2-tailed)	.000	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 2: Coefficient- Perceived Compatibility and Perceived Usefulness**

1	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.816	.128		14.243	.000
	average PC	.513	.035	.567	14.877	.000

a. Dependent Variable: average\_PU

**Table3: Coefficient– indirect relationship with mediation**

1	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.381	.165		8.354	.000
	average_PC	.173	.045	.182	3.822	.000
	average_PU	.423	.050	.403	8.449	.000

Dependent Variable: average\_BI

**Table 4: Sobel test– P-value of indirect relationship with mediation**

	Input		Test statistic	Std. Error	p-value
a	1.81	Sobel test	7.33870968	0.10358769	0
b	0.42	Aroian test	7.32643006	0.10376131	0
s <sub>a</sub>	0.12	Goodman test	7.35105125	0.10341378	0
s <sub>b</sub>	0.05				

It signifies that all the links between each variable are significant at the 0.000 level (Table:1) Further to test the indirect effect of perceived compatibility to behavior intention with the present of perceived usefulness as a mediating factor is significant at  $p < .000$  (Table:3) based on Sobel test described by Baron and Kenny (1986), Sobel (1982), Goodman (1960), and MacKinnon, Warsi, and Dwyer (1995), it is used to test of whether the indirect effect of the IV on the DV via the mediator is significantly different from zero through inserting the a, b, s<sub>a</sub>, and s<sub>b</sub> into the cells (Table 4) and this program will calculate the critical ratio. In this model, the test statistic of the Sobel test is 7.33, with an associated p-value of .00. The result revealed that the observed p-value is below the established alpha level of .05 indicates that the association between the IV and the DV, which means that there is a mediating effect of perceived usefulness between perceived compatibility and behavior intention in the model.

### Summary of Findings

Hypothesizes Relationship	Path Coefficient	p-value	Conclusion
H1 There is a positive relationship between perceived compatibility and perceived usefulness.	0.567	0.00	Supported
H2 There is a positive relationship between mobility and perceived usefulness.	0.411	0.00	Supported
H3 There is a positive relationship between perceived usefulness and behavior intention	0.506	0.00	Supported
H4 There is a mediating effect of perceived usefulness between compatibility and behavior intention.		0.00	Supported
H5 There is a mediating effect of perceived usefulness between mobility and behavior intention.		0.00	Supported

## RECOMMENDATION

Through identifying the factors influence on perceived usefulness, it is the degree of customers assessment on making transactions via a smart-phone in this study and further examines the factors that direct and indirect effect customers' behavior intended to achieve the development of e-banking transactions through mobile phones and diffusion of e-commerce. It recommended the research and development team should pay more attention to the functions of compatibility Mobility of e-banking of Smartphones in order to increase customers' perceived usefulness. Perceived usefulness signifies that flexibility and accessibility have been identified as a major contributor to mobile-commerce adoption. The positive relationship between perceived usefulness and behavior intention signifies that the degree of customers' assessment on making transactions via a smart-phone will make business more convenience and efficient his or her performance.

## CONCLUSION AND DISCUSSION

This study intends to estimate the factors influence on users' behavior intention of using e-banking transactions through mobile phones in China. The results revealed that perceived compatibility has a positive and significant direct effect on perceived usefulness, it consistent with previous studies (Wu & Wang, 2005; Szajna, 1996; Ha et al., 2007), and mobility significantly affect to perceived usefulness in lines with past studies (Kim et al., 2010; Schierz et al., 2010), and further perceived usefulness significantly affect behavior intention in lines with past studies (Xue et al., 2012, Kim et al., 2010). It also examined that perceived usefulness as a mediator between the relationship of perceived compatibility and behavior intention as well as the relationship between mobility and behavior intention. With the growth of using e-banking transactions through mobile phones in China, it brings along with the convenience of people's lives as it enables people to have access to banking services anywhere and at any time, yet there was lack of researchers on the mediating effect of perceived usefulness on users' behavior intention. The theoretical contribution is this research supplemented the gap of research on users' behavior intention. It also practically provide direction for marketers and management the relative importance various key factors that might affect the behavior intention of mobile phone users. The research and development team should pay more attention to the functions of compatibility Mobility of e-banking of Smartphones in order to increase customers' perceived usefulness, and further raise the customers' behavior intention which is beneficial to increase the degree of customers' assessment on making transactions via a smart-phone will make business more convenience and efficient.

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