

Understanding the Role of Trustees in the Adoption of IT Services

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Abstract

This study deals with an important but ignored topic in IS research, the trustee issue. The purpose of this study, performed in the context of mobile banking, is: (1) to broaden the types of trustees (vendors, mobile channel, customers themselves) that customers consider in the adoption of emerging IT services and (2) to investigate the relationships between customer intention to adopt new IT services and trust in three different trustee types. The analysis showed that customers' self-trust is the most important in shaping their intention to adopt mobile banking. Consumer trust in the mobile channel came in second. Unlike the results of previous research, the effect of customers' trust in vendors was insignificant in mobile banking.

Keywords:

Trust, Mobile Banking, Intention to Adopt, M-commerce

Introduction

With the rapid development of ITs, various on-line and mobile services (i.e., Internet shopping and mobile banking) are continuously introduced. These services become business opportunities that service providers can take advantage of for new customer relationship management and improved financial performance. Meanwhile, they also pose significant challenges, especially in forming customer trust. Many existing studies theoretically and empirically recognized the crucial importance of customer trust in boosting on-line transactions.

There seems to be some confusion regarding the nature of trustee types (Kim and Prabhakar, 2004). Most existing studies on on-line trust have placed their attentions on the vendor trust (Ratnasingam, 2005) and the role of trust on IT channels has not been given much attention. The adoption intention of IT services should be improved when potential clients have confidence in the reliability of the IT

infrastructure associated with a service. The third trustee type is self-trust necessary as customers directly interact with associated ITs (Meuter et al., 2005). As a type of self-service, clients decide the adoption of an IT service after evaluating their ability to produce wanted results from it. This means that the client herself becomes a trustee, the object of trust.

Based on the three types of trustees, this research examines the direct association between the trust types and the adoption intention of an IT service. We base our empirical research on mobile banking service. It is the outgrowth of strategic alliance between banks and mobile telecom providers to create a new business model taking advantage of each other's strengths in a synergistic manner. Mobile banking of this nature offers uniqueness in conducting research on the trust implications of IT services. Above all, due to the greater risks involved in handling personal information and financial transactions, it becomes an ideal setup to conduct trust research (Suh and Han, 2003).

Research Model & Hypotheses

For the intended study, we propose a research model as in Figure 1. In the model, trust in the vendors of mobile banking, in the mobile channel, and in the customer herself are independent variables that are expected to affect the adoption intention of mobile banking. Meanwhile, such adoption intention of an IT service should be significantly influenced by other demographic elements of a person as well. These variables are included as control variables for the objective assessment of the association between trust types and adoption intention.

A number of existing studies (i.e., Liu et al., 2005; Pavlou, 2003; Bhattacharjee, 2002) postulated that customers' trust in service providers directly affect their behavioral intentions for service transactions, usage, and adoption. Customer trust is largely shaped through prolonged and cumulative experience that gives clients a sense of familiarity, calculation, and values (Coleman, 1990). Customers may reveal their confidence in a vendor's competence, predictability, and goodwill via the choice of

service continuation or repurchase (Jarvenpaa et al., 2000). It is therefore hypothesized that:

Hypothesis 1: A person's trust in the vendors of mobile banking positively affects her usage intention of the service.

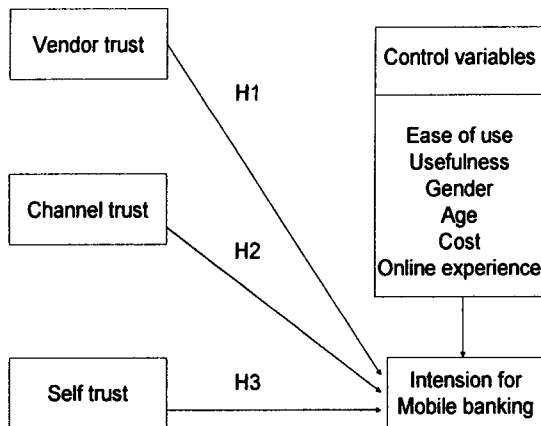


Figure 1. Research Model

These days, mobile services are largely offered on applications that do not require heightened confidentiality of transported data (Lu et al., 2005). This should be largely due to low confidence prospective customers have on the safety of mobile transactions (Anil et al., 2003). Customers are unsure of mobile channel's capacity to protect data and privacy, and to sustain stable services (Lu et al., 2004). The mobile channel is inherently insecure because of its open nature and is relatively weak in system stability and reliability as its effectiveness is conditioned by temporal and spatial factors (Ng-Kruelle et al., 2002). Accordingly, earning customer confidence in the mobile channel poses a great deal of challenge that has to be surmounted for the wide spread of mobile banking (Lu et al, 2005). It is therefore hypothesized that:

Hypothesis 2: A person's trust in the mobile channel positively affects her usage intention of mobile banking.

IT-services largely take the form of self-service and therefore their effective usage presumes user competence in related technologies. Accordingly, customers may assess their IT capacity prior to capitalize an IT service and decide to adopt it when they are assured of their own competence to achieve intended outcomes (Bearden et al., 2001; Lee and Allaway, 2002). The more confidence a person has in her capability to take advantage of an IT service, the higher chance of its employment there might be (Hoffman et al., 2003). Therefore, it is hypothesized that:

Hypothesis 3: A person's self-trust positively affects her usage intention of mobile banking.

Study Variables

Independent Variables

1. Trust in the mobile banking vendor: This variable is defined as a person's trust in the competence, integrity, and benevolence of a mobile banking provider.
2. Trust in the mobile channel: It denotes a person's trust in the accuracy, availability, reliability, security, and stability of the communication channel.
3. Self-trust is confidence in a person's own capability to produce intended outputs through the usage of mobile banking.

Dependent Variable: The intention of a person to adopt mobile banking is mobilized as the dependent variable.

Control Variables: The variables of ease of use, perceived usefulness, gender, age, cost, and online experience are defined as the control variables to assess the effect of independent variables on the dependent variable in a less-biased manner.

Data Gathering

A survey was designed for the empirical study. Question items were derived from those appeared in the previous studies. They had to be moderated to fit into the context of mobile banking. All survey items except gender gathered responses based on the 7-point Likert scale. Respondents were at least 20 years old. Those under 20 were not included in the sample because people in that young age group were not expected to own a banking account and therefore did not generate mobile transactions. A pilot test was conducted based on off-line responses to assess the reliability of the survey questionnaire. Further modification was made on survey items with semantic ambiguities. The survey thus validated was used by www.wsurvey.net for online data gathering. The company had a panel list and it randomly chose a sample group from the panel list for data gathering. 825 people responded the survey and 808 of them were used for data analysis after dropping those with a significant number of missing answers. 55% of the respondents were male. 20s (39%) and 30s (36%) constituted the largest groups in the age distribution. SPSS package was used for data analysis.

Validity Tests

Prior to the data analysis, the survey items are examined in their construct reliability and validities. When the Cronbach's alpha value of a construct is higher than 0.7, its reliability is deemed appropriate. Cronbach's alpha values were all above 0.7 (0.822 through 0.967) indicating high degree of reliability for studied constructs. The factor analysis based on Varimax rotation was used to test the convergence and discriminant validities. All indicator loadings of the intended factor were above 0.6 and those of the unintended factor were low indicating high degree of convergence and discriminant validities.

Analysis Results

To examine the effect of independent variables (three types of trustee) on the dependent variable (usage intention of mobile banking) under the condition that other variables that might compound the assessment are controlled, we carried out hierarchical regression analysis. Table 1 compares the reduced model with only control variables and the full model with both control and independent variables. By comparing the R-square value between two models we could test the significance of the effect explained by the independent variables. The difference of the R-square values (0.438 vs 0.501) was statistically significant.

Table 1. Hierarchical regression analysis

Variables	Models				
	Reduced model		Full model		
	Coef.	Sig.	Coef.	Sig.	
Indep. variables	Vendor trust	-	-	0.046	0.160
	Channel trust	-	-	0.158	0.000
	Self-trust	-	-	0.186	0.000
Control variables	Cost	-0.177	0.000	-0.183	0.000
	Utility	0.422	0.000	0.301	0.000
	Ease of use	0.272	0.000	0.193	0.000
	Gender	-0.090	0.001	-0.060	0.022
	Age	0.048	0.081	0.015	0.567
	Online experience	0.061	0.027	0.048	0.068
	R ² (adjusted R ²)	0.438(0.434)		0.501(0.495)	
F-value(df)	103.980(6)		88.692(9)		
F-value increase(P-value)	33.563(0.000***)				
R ² increase(P-value)	0.063(0.000***)				

Note) *: p<0.05, **: p<0.01, ***: p<0.001

The result of regression analysis that estimates the effect of independent and control variables on the dependent variable is summarized in Table 2. The R² = 0.501 indicates high degree of reliability of studied variables in explaining the variation in the dependent variable. As postulated in hypothesis 2 and hypothesis 3, self-confidence and trust in the mobile channel were positively associated with the adoption intention of mobile banking. However, the role of trust in service firms was not significant (hypothesis 1 not supported).

The findings of this research are summarized as follows. First, self-trust and trust in the mobile channel are significant in affecting the adoption intention of mobile banking. The standardized coefficients indicate that self-trust is more influential than trust in the mobile channel in shaping user intention for mobile banking. The analysis indicates that, unlike most existing studies that focused on more traditional trust entities including channel and service vendors, trust in self-competence is more crucial for the adoption of mobile banking. The importance of self-trust may be rather natural because IT-driven services are mostly

run as self-services.

Table 2. The result of regression analysis

Types	Independent variables	Standard Coef.	t-value	Sig.
Indep. Var.	Trust in vendors (H1)	0.046	1.407	0.160
	Trust in mobile channel (H2)	0.158	4.464	0.000***
	Trust in self(H3)	0.186	6.245	0.000***
Control Var.	Perceived cost	-0.183	-7.183	0.000***
	Perceived usefulness	0.301	8.917	0.000***
	Perceived ease of use	0.193	5.889	0.000***
	Gender	-0.060	-2.303	0.022*
	Age	0.015	0.573	0.567
	Online experience	0.048	1.830	0.068

Note) R² = 0.501, *: p<0.05, **: p<0.01, ***: p<0.001

The significance of trust in the mobile channel confirms that people regard the mobile channel risky for banking transactions. In this study, the role of vendor trust was insignificant. This refutes many empirical studies in which confidence in online service providers has been regarded critical. One plausible interpretation is that mobile banking providers are large firms whose off-line presence had established enough credibility among people. Naturally, vendor trust didn't constitute a significant issue anymore.

From the analysis of control variables, we found the significance of perceived usefulness and perceived ease of use in growing usage intention of mobile banking. This agrees with the results of previous studies in which the two variables were consistently proved in their importance of promoting IT adoption. It was also shown that males had higher intention than females and service cost constituted a major barrier to the adoption of mobile banking. Although we expected that the younger generation were more active in adopting mobile banking, this was not supported empirically.

Conclusion

The focus of trust studies in the online context has been on the vendor trust and the channel trust. We broadened the trust categories by considering self-trust and examined their comparative importance in the context of mobile banking. We believe in the value of this study as IT-driven services are becoming technically sophisticated and diversified with the emergence of mobile commerce. This work can be enriched and extended in several directions as future research. First, understanding key antecedents of three trust types can be an important research issue. Second, efforts can be made to understand variables that mediate three trust types and the adoption of IT services. Third, studies can be undertaken to understand the implication of trust types on many different services expected to emerge as part of the

ubiquitous computing paradigm. Lastly, the context of our research is mobile banking and therefore the generalization of study results could be hard. For the generalization, efforts are necessary to comprehend the association between trust types and adoption intention based on the categorization of IT services.

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