

The Difference between Users and Potential Users of Using Online Banking

Hsueh-Ying Wu^{1, a}, Hsing-Yun Chang^{2, b+} and Hsing-Hui Lin^{3, c}

¹ Knowledge Management at Aletheia University, No.70-11 Pei-Shi-Liao, Matou, Tainan 721, Taiwan

² Marketing Management at Central Taiwan University of Science and Technology, No.666, Buzi Rd., Beitun Dist., Taichung City 406, Taiwan

³Hospitality Management at Taiwan Hospitality and Tourism College, No. 286 Chung-Hsing St., Shou-Feng Township, Hualien County, 974, Taiwan (Correspondence Author)

Abstract. The study examined perceived usefulness and perceived ease of use while incorporating relative advantage, website quality, knowledge and support, information quality and trust as new constructs in predicting customers' behavioral intention of using online banking. In the study adapted multiple regression analysis to represent the difference between users and potential users' behavioral intention of using online banking in Taiwan. The results found for both the potential-user group and the user group, trust demonstrated a strong effect on customers' behavioral intention.

Keywords: Online Banking, Technique Adoptions, Behavioral Intention, Perceived Value

1. Introduction

There is no doubt that the World Wide Web has been transforming all facets of the business world, and the impact of such changes on customer service has been significant. The management's ability to anticipate and respond to such changes in the financial marketplace, thus, has a decisive influence on the success or failure of many retail banks (Gan, Limsombunchai, Clemes, & Weng, 2005).

In 2000, the Ministry of Finance of Taiwan, R.O.C., allowed 15 banks, including China Trust Commercial Bank, to conduct online banking. Since then, the internet network has followed ATM, a scientific and technological tool of banking. For several years now, commercial banks in Taiwan have been trying to popularize and upgrade their online banking systems since these mechanisms can simplify procedures and reduce a bank's operating costs (Wang, Wang, Lin, & Tang, 2003). On the other hand, many studies have addressed online banking from the users' perspective. However, Poon (2008) suggested that non-users' point of view should also be taken into account in future research. Therefore, previous experience (users' and potential users') were included in the present study for investigation.

In theory building, the present study examined perceived usefulness (PU) and perceived ease of use (PEOU) while incorporating relative advantage, website quality, knowledge and support, information quality and trust as new constructs in predicting customers' behavioral intention of using online banking. In order to achieve the intended objective, this study adapted multiple regression analysis to represent the difference between users and potential users' behavioral intention of using online banking in Taiwan.

⁺ Corresponding author

E-mail address: ^ahsueh-ying@yahoo.com.tw, ^bhsing_yun_chang@hotmail.com, ^cemily.lin@ttu.edu

2. Literature Review

2.1. The Variables Related to Technique Adoptions

Jeyaraj & Sabherwal (2008) indicated that research on IS or IT adoption generally deals with individuals' beliefs, attitudes, intention, adoption and use. In the past decades, many studies, from different theoretical perspectives, have been undertaken to explain and predict users' acceptance of information technologies or systems at work. Perceived usefulness (PU) and perceived ease of use (PEOU) have significantly influenced customers' interaction with online banking and have been documented by many studies that incorporated various external variables such as trust (Gefen, Karahanna & Straub, 2003; Gronfeldt & Strother, 2006; Pavlou, 2003), information quality, system quality and service quality (Ahn, Ryu, & Han, 2004).

2.2. Relative Advantage

From the customers' perspective, the advantage of Internet banking lies in the fact that they, at home or in the office, can enjoy all kinds of bank services: paying bills and transferring accounts to manage finances such as buying stocks and funds. So, the online customers, who no longer need to go to the bank counter to wait, can save time and costs in managing finances. The primary advantage of online banking grants consumers with easier access to financial services, lower bill-paying and speediness in managing their finances (Kim, Yilmazer & Widdows, 2005; Poon, 2008). Indeed, convenience is a main consideration for many online banking customers (Anguelov et al., 2004; Lichtenstein & Williamson, 2006; Kolodinsky, Hogarth & Hilgert, 2004; Poon, 2008).

2.3. Behavioral Intention

In the study, efforts were made to determine whether factors of relative advantages, such as website quality, knowledge and support, information quality, trust, perceived usefulness and perceived ease of use, would influence consumers' behavioral intention of using online banking. During the investigation, users' and potential users' points of view were both addressed because both had been found in the literature to be important determinants of behavioral intention (Ajzen & Fishbein, 1980; Bentler & Speckart, 1979). Fazio & Zanna (1981) found that direct experience led to determined attitudes and predictable behavior better than attitudes founded on indirect experience do. Poon (2008) suggested that non-users' point of view should also be taken into account in future research. Cheng et al. (2006), likewise, proposed that future research should deal with issues revolving around non-users. Specifically, it has been suggested that knowledge gained from past behavior will help shape intention (Eagley & Chaiken, 1993). Therefore, previous experience (users' and potential users') were included in the present study for investigation. The following hypotheses are proposed:

H1: Factors of external variables would influence potential users' image of using online banking.

H2: Factors of external variables would influence users' behavioral intention of using online banking.

3. Methodology

The target for the present study was defined as the customers who had at least one account with a domestic bank. These individuals were included in the survey. According to Central Bank of the Republic of China (Taiwan), currently there are 37 domestic banks in Taiwan. However, only 31 of them provide online banking services (Financial Supervisory Commission, Executive Yuan, 2009). Therefore, respondents for the present study were chosen from the customers of these 31 banks.

It was assumed that the response rate might be 50%. In order to achieve at least 200 observations, it was estimated that at least 400 questionnaires would have to be distributed. Since there were 31 domestic banks, 465 customers (31 domestic banks, 15 questionnaires per bank) had to be included in the present study. A quota sampling method was adopted.

For the study, the variable of use, which has two categories (users and potential users), was included in the regression process. One other objective for conducting a regression analysis in this section was to find

out how various factors might affect customer behavioral intention of using online banking in Taiwan and to identify the most important factors underlying customers' perceptions of usefulness and ease of use of online banking.

4. Result

A multiple regression analysis was used to predict the dependent variable, behavioral intention (BI), from the independent variables: relative advantages (RA), website quality (WQ), knowledge and support (KS), information quality (IQ), trust (T), perceived usefulness (PU) and perceived ease of use (PEOU); and to understand and predict potential users' behavioral intention. The statistical data in Table 1 demonstrate the assumption underlying the multiple regression analysis in the study as well as the results of this analysis. It shows that F (34.740) has reached a significant level in AVOVA ($p < .05$). Therefore, the results indicate that the seven dimensions are significantly correlated with customer intention of using online banking. In Table 2 & 3, the data yield significant statistical evidence for a positive relationship among trust, perceived usefulness, perceived ease of use and behavioral intention. The positive beta of 0.572 indicates that trust has a statistically significant effect on potential users' behavioral intention of using online banking ($\beta=0.572$, $p \leq .05$).

Table 1. Model Summary for the Potential-User Group.

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change Statistics				
					R ² Change	F Change	Df1	Df2	Sig. F Change
1	.817a	.668	.649	.58700	.668	34.740	7	121	.000

Predictors: (Constant), PEOU, WQ, KS, RA, IQ, T, PU Dependent variable: BI

Table 2. ANOVA for the Potential-User Group.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	83.791	7	11.970	34.740	.000
Residual	41.693	121	.345		
Total	125.483	128			

Predictors: (Constant), PEOU, WQ, KS, RA, IQ, T, PU Dependent Variable: BI

Table 3. Coefficients for the Potential-User Group.

Model	Unstandardized coefficients		Standardized coefficients		Collinearity statistics			
	B	Std. error	Beta	t	Sig.	Tolerance	VIF	
1 (Constant)	0.116	0.421		0.276	0.783			
RA	0.006	0.075	0.005	0.079	0.937	.602	1.662	
WQ	-0.045	0.078	-0.034	-0.581	0.562	.808	1.237	
KS	-0.067	0.088	-0.053	-0.768	0.444	.569	1.757	
IQ	0.068	0.086	-0.055	-0.791	0.431	.558	1.793	
T	0.620	0.077	0.572	8.081	0.000*	.549	1.822	
PU	0.228	0.085	0.217	2.675	0.008*	.417	2.398	
PEOU	0.252	0.087	0.245	2.908	0.004*	.386	2.591	

Dependent variable: BI $p < .05^*$

For the user group, multiple regressions was used to predict the dependent variable, behavioral intention (BI), from the independent variables: relative advantages (RA), website quality (WQ), knowledge and

support (KS), information quality (IQ), trust (T), perceived usefulness (PU) and perceived ease of use (PEOU); and to understand and predict experienced users' behavioral intention. Based on the statistical results listed in Table 4 & 5, the coefficient of determination, R squared (R2), was 0.654, explaining almost 65.4 % of the variance ($R^2 = 0.654$, $F(7, 198) = 35.509$, $p < .05$). It shows that $F(35.509)$ has reached a significance level in ANOVA ($p < .05$). Therefore, the results indicate that the seven dimensions are significantly correlated with customers' intention of using online banking. In Table 6, the data yield significant statistical evidence for positive relationships among relative advantages, trust, perceived usefulness, perceived ease of use and behavioral intention.

Table 4. Model Summary for the User Group.

Model	R	R2	Adjusted R2	Std. Error of the Estimate	Change Statistics				
					R2 Change	F Change	Df1	Df2	Sig. F Change
1	.809a	.654	.642	.58757	.654	35.509	7	198	.000

Predictors (constant) : PEOU, WQ, KS, RA, IQ, T, PU ; Dependent variable: BI

Table 5. ANOVA for User Group.

Model	Sum of Squares	d.f.	Mean Square	F	Sig.
1 Regression	129.313	7	18.473	53.509	.000(a)
Residual	68.357	198	.345		
Total	197.670	205			

Predictors: (Constant), PEOU, WQ, KS, RA, IQ, T, PU ; Dependent Variable: BI

Table 6. Coefficients for the User Group.

Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	-0.252	0.327		-0.771	0.442		
RA	0.143	0.051	0.137	2.786	0.006*	.723	1.384
WQ	-0.020	0.052	-0.020	-0.380	0.704	.645	1.550
KS	0.038	0.056	0.037	0.679	0.498	.574	1.742
IQ	-0.094	0.054	-0.097	-1.750	0.082	.566	1.765
T	0.289	0.056	0.300	5.164	0.000*	.516	1.937
PU	0.398	0.061	0.387	6.576	0.000*	.504	1.983
PEOU	0.267	0.057	0.262	4.682	0.000*	.558	1.792

a. Dependent Variable: BI

p < .05*

5. Summary

For both the potential-user group and the user group, trust demonstrated a strong effect on customers' behavioral intention; yet this effect was particularly strong in the potential-user group. This result is consistent with Gefen et al. (2003), who found trust to be a strong determinant of purchase intention for both potential and repeat customers. This may have been due to a high anticipation of threat arising from certain online liabilities, such as security lapses where vital private information may be stolen by hackers.

Apart from perceived usefulness and perceived ease of use, relative advantage also had a significant effect on customers' behavioral intention. Overall, then, the banking community in Taiwan should emphasize perceived usefulness, perceived ease of use, trust and relative advantage when developing effective business strategies. The results from the regression analysis clearly identified potential users' perceived trust as a most important factor influencing intention of using online banking. Consumers who perceive low risks in internet transactions are generally more willing to explore online banking.

Specifically, increasing numbers of online customers have expressed concerns over potential misuses of personal information and breaches of privacy. Given these concerns, it is important to develop an online banking marketing strategy that visibly demonstrates security and reliability, with concrete policies to protect customers' personal information during, for example, payment transactions. There is a need to upgrade banks' security systems and, eventually, to maintain their reputation. This suggests the need for banks to not only employ mechanisms to build trust for their specific online banking websites but, perhaps more urgently, to educate their customers so as to alleviate their fears with transacting online.

6. References

- [1] T. Ahn, S. Ryu and I. Han, The impact of the online and offline features on the user acceptance of internet shopping malls. *Electronic Commerce Research and Application*, 3, 405-420(2004).
- [2] I. Ajzen, and M. Fishbein, (Eds.). (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, New Jersey: Prentice-Hall.
- [3] C. E. Anguelov, M. A. Hilgert and J. M. Hogarth, U. S .consumers and electronic banking, 1995-2003. *Federal Reserve Bulletin*(2004)
- [4] P. M. Bentler and D. G. Bonnett, Significant tests and goodness of fit in the analysis of covariance structure. *Psychological Bulletin*, 88, 588-606(1980).
- [5] P. M. Bentler and G. Speckhart: Models of attitude-behavior relations. *Psychological Review*, 86 (5), 452-464 (1979).
- [6] T. C. E. Cheng, D.Y. C. Lam and A. C. L. Yeung, (2006). *Adoption of internet banking: Eagly, A., H., & S. Chaiken, (1993). The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- [7] R. H. Fazio and M. Zanna: Direct experience and attitude-behaviour consistency, in Berkowitz, L. (Ed.), *Advances in Experimental Social Psychology*, Academic Press, San Diego, CA, 14, 161-202(1981).
- [8] C. Gan, V. Limsombunchai, M. Clemes and A. Weng, Consumer choice prediction: Artificial neural networks versus logistic models. *Journal of Social Sciences*, 1 (4), 211-219(2005).
- [9] D. Gefen, E. Karahanna and W. D. Straub: Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27 (1), 51-90(2003).
- [10] S. Gronfeldt and J. B. Strother: *Service leadership: The quest for competitive advantage*. Thousand Oaks, CA: Sage(2006).
- [11] J. F. Hair, W. C. Black, B. J. Babin and R. E. Multivariate data analysis (7th ed.). Upper Saddle River, New Jersey: Pearson Education(2010).
- [12] A. Jeyaraj and R. Sabherwal: Adoption of information systems innovations by individuals: A study of processes involving contextual, adopter, and influencer actions. *Information and Organization*, 18, (3), 205-234(2008).
- [13] B. Kim, T.Yilmazer and R. Widdows: The determinants of consumers' adoption of internet banking. *Proceedings, Federal Reserve Bank of Boston*(2005).
- [14] J. M. Kolodinsky, J. M. Hogarth and M. A. Hilgert: The adoption of electronic banking technologies by US consumers. *The International Journal of Bank Marketing*, 22 (4), 238-259(2004).
- [15] S. Lichtenstein and K. Williamson: Understanding consumer adoption of Internet banking: An interpretive study in the Australian banking context. *Journal of Electronic Commerce Research*, 7 (2), 50-66(2006).
- [16] P. A. Pavlon: Consumer acceptance of electronic commerce: Intergrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7 (3), 101-134(2003).
- [17] W. C. Poon: Users' adoption of e-banking services: The Malaysian Perspective. *Journal of Business & Industrial Marketing*, 3 (1), 59-69 (2008).
- [18] J. Stevens: *Applied multivariate statistics for the social sciences (2nd ed.)*. Hillsdale, NJ: Lawrence Erlbaum Associates(1992).
- [19] Y. S. Wang, Y. M. Wang, H. H. Lin and T. I. Tang: Determinants of user acceptance of internet banking: An empirical study. *International Journal of Service*, 14 (5), 501-519(2003).