

Acceptance of e-banking among customers (An Empirical Investigation in India)

K.T. Geetha¹ & V.Malarvizhi²

¹Professor and ²Assistant Professor, Department of Economics,
Avinashilingam Institute for home Science and Higher Education for Women
Coimbatore -641043, TamilNadu, India

Abstract

Financial liberalization and technology revolution have allowed the developments of new and more efficient delivery and processing channels as well as more innovative products and services in banking industry. Banking institutions are facing competition not only from each other but also from non-bank financial intermediaries as well as from alternative sources of financing. Another strategic challenge facing banking institutions today is the growing and changing needs and expectations of consumers in tandem with increased education levels and growing wealth. Consumers are becoming increasingly discerning and have become more involved in their financial decisions. This paper investigates the factors which are affecting the acceptance of e-banking services among the customers and also indicates level of concern regarding security and privacy issues in Indian context. Primary data was collected from 200 respondents through a structured questionnaire. Descriptive statistics was used to explain demographic profile of respondents and Factor and Regression analyses were used to know the factors affecting e-banking services among customer in India. The finding depicts many factors like security and privacy and awareness level increased the acceptance of e-banking services among Indian customers. The finding shows that if banks provide them necessary guidance and ensure safety of their accounts, customers are willing to adopt e-banking,

Keywords: Security, Privacy, Awareness, Customers, E-banking

INTRODUCTION

The rapid advancement in electronic distribution channels has produced tremendous changes in the financial industry in recent years, with an increasing rate of change in technology, competition among players and consumer needs (Hughes, 2001). The proliferation of, and rapid advances in, technology-based systems, especially those related to the internet, are leading to fundamental changes in how companies interact with customers (Ibrahim et al, 2006; Bauer et al., 2005; Parasuraman and Zinkhan, 2002). Internet banking has become the self-service delivery channel that allows banks to provide information and offer services to their customers with more convenience via the web services technology. The evolution of e-banking has fundamentally transformed

the way banks traditionally conduct their businesses and the ways consumers perform their banking activities (Eriksson et al., 2008; Sayar and Wolfe, 2007). Today e-banking has experienced phenomenal growth and has become one of the main avenues for banks to deliver their products and services (Amato-McCoy, 2005).

Electronic banking (e-banking), also known as Internet banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels (Daniel, 1999; Sathye, 1999). E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain

information on financial products and services through a public or private network, including the internet. Customers access e-banking services using an intelligent electronic device, such as a personal computer (PC), personal digital assistant (PDA), automated teller machine (ATM), kiosk, or Touch Tone telephone. Chou and Chou (2000) identified five basic services associated with online banking: view account balances and transaction histories; paying bills; transferring funds between accounts; requesting credit card advances; and ordering checks for more faster services that can be provide by domestic and foreign bank.

E-banking reaps benefits for both banks and its customers. From the banks' perspective, e-banking has enabled banks to lower operational costs through the reduction of physical facilities and staffing resources required, reduced waiting times in branches resulting in potential increase in sales performance and a larger global reach (Sarel and Mamorstein, 2003). From the customers' perspective, e-banking allows customers to perform a wide range of banking transactions electronically via the bank's website anytime and anywhere (Grabner-Kraeuter and Faullant, 2008). In addition, customers no longer are confined to the opening hours of banks, travel and waiting times are no longer necessary, and access of information regarding banking services are now easily available (Hamlet, 2000). However the success of e-banking isn't without its problems. Firstly the adoption of e-banking has not kept pace with that of internet usage (White and Nteli, 2004). This gap is attributed to the lack of trust among bank customers, particularly among internet users age 65 and older (Ilett, 2005; Perumal and Shanmugam, 2005). Secondly, customers still prefer face to face interaction (Asher, 1999) due to reasons such as fear of the online environment and lack of trust in the internet. Recent literature on e-banking showed that the formation of trust can help reduce the impact of key inhibiting factors

such as fears about using the online service among non-e-banking customers (Vatanasombut et al., 2008).

In India, ICICI bank was the first bank which offered this delivery channel, by kicking off its online services in 1996. Other private sector banks like Citibank, IndusInd Bank and HDFC and Timesbank (now part of HDFC bank) started offering internet services in 1999. State bank of India launched its services in July 2001. Other public sector banks like Bank of Baroda, Allahabad Bank, Syndicate Bank and Bank of India, also rolled its services during the same time. Banks in India currently offers "Fully Transactional Websites" to their customers. The customers would conduct a variety of transactions through internet banking facility which includes: account summary, details of historical banking transactions, funds transfer, loan applications, bill payments, cheque book request, cheque status enquiry, stop cheque request, credit card payments/ statements, facilities to contact account managers, etc. In a survey conducted by IMAI and IMRB (IMRB and IMAI, 2006) the estimated number of internet users as of September, 2006 was 37 million and the number of "active users" was pegged at around 25 million. The survey also estimates around 2.4 million E-commerce users, which included internet banking users. An estimated 4.6 million Indian internet users are availing internet banking services as of 2007(Kothari, 2007). In India, slowly but steadily, the Indian customer is moving towards Internet banking. But they are very concern about security and privacy of internet banking (Malhotra and Singh, 2009).

The purpose of this paper is to gain an understanding of the acceptance of e-banking in an Indian market where the 70 percent population reside in rural areas and 30 percent population reside in urban area of the country (Gerrard and Cunningham, 2003). This study explore acceptance of e-banking in India from the point of view of customers

and investigate how customers perceive

LITERATURE REVIEW

Following the boom of new technologies such as the internet and mobile phones in practice, e-banking has also been the focus of numerous academic papers. Adoption, perception and usage of internet banking by consumers is one of the topics heavily examined in e-banking literature. Centeno (2004) argues that speed, the convenience of remote access, 7/24 availability and price incentives are the main motivation factors for the consumers to use internet banking. Durkin, et. al. (2008) notes that the simplicity of the products offered via internet banking facilitates the adoption of internet banking by consumers. Calisir and Gumussoy (2008) compare the consumer perception of internet banking and other banking channels and report that internet banking, ATM and phone banking substitute each other. Maenpaa et.al. (2008) examine the consumer perceptions of internet banking in Finland and their findings indicate that familiarity has a moderating role in the perception. Guerrero, et.al. (2007) examine the usage of internet banking by Europeans and their results indicate that ownership of diverse financial products and services, attitude towards finances and trust in the internet as a banking channel influence clients' usage of internet banking. Confirming other papers, Sohail and Shanmugham (2003) document accessibility of internet, awareness of e-banking and resistance to change are found to be influencing Malaysian's use of internet banking. Another factor that promotes clients usage of internet banking is seller support (Nilsson, 2007).

Perceived risk was one of the major factors affecting consumer adoption, as well as customer satisfaction of online banking services (Polatoglu and Ekin, 2001). Perceived risk usually arises from uncertainty. To Howcroft, et. al., (2002) the principal characteristics that inhibit online banking adoption are security and privacy. In

electronic banking services.

Malaysia it was found that security was main barrier to e-commerce expansion. Security is perhaps the most feared problem on the internet. Banks and customers take a very high risk by dealing electronically (Mukti, 2000; Chung and Paynter, 2002). It is noted that although consumer's confidence in their bank was strong, yet their confidence in the technology was weak (Roboff and Charles, 1998). Today's consumers are increasingly more concerned about security and privacy issues (Howcroft et al., 2002).

Potential customers mentioned Internet security, online banking regulations, consumers' privacy, and bank's reputation as the most important future challenges of online banking adoption. (Aladwani, 2001). Indeed, in Aladwani's (2001) study of online banking, potential customers ranked internet security and customers' privacy as the most important future challenges that banks are facing. Perceived usefulness, perceived Web security has a strong and direct effect on acceptance of internet banking, too. A high level of perceived risk is considered to be a barrier to propagation of new innovations (Ostlund, 1974). Influenced by the imagination-capturing stories of hackers, customers may fear that an unauthorized party will gain access to their online account and serious financial implications will follow. The survey by White and Nteli (2004) found that UK consumers ranked the security of bank's website as the most important attribute of internet banking service quality. This widespread anxiety is vividly illustrated by the results of Sathye (1999), who reported that three-quarters of Australian respondents expressed security concerns with regard to electronic banking. Overall, the literature appears to be unequivocal in its finding that the level of perceived risk is negatively related to the attitude towards banking on the World Wide Web (Black et al., 2001; Rotchanakitumnuai and Spence, 2003; Singh, 2004; Lee et al., 2005 and Gerrard et al.,

2006). For this reason, this study uses perceived security as a predictor of customer acceptance.

A majority of studies highlight the fact that “security” is the biggest single concern for customers when faced with the decision to use internet banking. Security has always been an issue, but its scope has changed from mere doubts about the privacy of personal information to worries of financial loss (Sayar and Wolfe, 2007). White and Nteli (2004) find that “security” is the most important attribute for UK internet

RESEARCH GAP

The review of literature suggest that most of the studies have been done on issues related to Internet banking in countries like Australia (Sathye, 1999), Malaysia (Mukti, 2000; Chung and Paynter, 2002; Sohail and Shanmugham 2004), Singapore (Gerrard and Cunningham, 2003a, 2006b), Turkey vs. UK (Sayar and Wolfe, 2007) and Saudi Arabia

RESEARCH HYPOTHESIS

It is indeed essential to emphasize the fact that the Indian culture is different from the countries where previous research was conducted. The researchers predicted that the familiarity and economic benefits of using the Internet has a significant impact on the acceptance of online banking. If the

- ❖ Security and trust has significant impact on adoption of e-banking among customers.
- ❖ Innovativeness has significant impact on adoption of e-banking among customers.
- ❖ Familiarity has significant impact on adoption of e-banking among customers.
- ❖ Awareness has significant impact on adoption of e-banking among customers.

METHODOLOGY

Data were collected from 200 bank customers belonging to 19 commercial banks in the city of Coimbatore, India during April-June 2011. Purposive sampling method was used in the selection of the sample respondents. The survey instrument used in the study was a structured questionnaire. The questionnaire was made up the dimension which measures the acceptance of e-banking among Indian customers. The variables were measured using multiple items. All of the

RESEARCH FINDINGS

banking customers. It is followed by “responsiveness of service delivery (speed and timeliness)”, “ease of use”, “credibility of the bank”, and “product variety”. Akinci et al. (2004) find that the selection of an internet banking service provider is effected by security, reliability and privacy. Security, which involves protecting users from the risk of fraud and financial loss, has been another important issue in safe use of the internet when conducting financial transactions in Saudi Arabia (Sohail and Shaikh, 2007)

(Sohail and Shaikh, 2007). Much work has not been done in India with regard to Internet banking issues. The present study intends to know the factors affecting the acceptance of e-banking by the customers and also indicates level of concern regarding security and privacy issues in Indian context.

customers are not used to accessing the Internet frequently, and if they do not trust the Internet as a secure environment to conduct financial transactions, then it is nearly impossible for them to accept online banking. Therefore, the following hypotheses were adopted:

scale items represented in the survey instrument utilized a five point categorical rating scale. The anchors used included: a) 1= strongly disagree, b) 2= disagree, c) 3= neither agree nor disagree, d) 4= agree, e) 5= strongly agree. Factor analysis was performed to assess the validity of the constructs and regression analysis was employed to analyze the data. Statistical Package for Social Sciences (SPSS) version16 was used has the analysis tool.

Table 1 presents the demographic characteristics of the 200 respondents. About 67 percent of the respondents are males and 33 percent respondents are females. Table 1 also shows that all respondents are adults with 39 percent of the respondents in the age group of 20-30 years, 30 percent between 30-40 years, 20 percent between 40-50, 10

percent above 50 years and one percent being less than 20 years. The highest category using online banking services are in the age group of 20-30 years. Majority of the users of e-banking services were graduates (45 percent) and were earning a monthly salary of Rs. 10,000-30,000.

Table-I
Distribution of Respondents on the Basis of Demographic Factors

Demographic Variables	Categories	No. of Respondents
Gender	Male	134 (67)
	Female	66 (33)
Age (in years)	Less than 20	2 (1)
	20-30	78 (39)
	30-40	60 (30)
	40-50	40 (20)
	Above 50	20 (10)
Qualification	Up to 12th	47 (23.5)
	Graduates	90 (45)
	Post graduates	38 (19)
	Professionals	25 (12.5)
Income (per month)	Below 10,000	41 (20.5)
	10,000-30,000	73 (36.5)
	30,000-60,000	66 (33)
	Above 60,000	20 (10)

Source: Field Survey, 2011

Internal consistency tests were conducted using Cronbach alpha tests (Cronbach, 1946) for the four multi-item measures and are presented in table 2.

Table -II
Reliability Statistics

Measures	No. of Items	Reliability for this Sample
Security and Trust	7	0.836
Awareness	5	0.856
Familiarity	4	0.789
Innovation	4	0.749

Source: Estimation based on Field Survey

The alpha values for all factors vary from 0.75 to 0.86 which are considered acceptable for this type of study (Nunnally, 1978). This reveals that the variables load properly on these four factors.

To determine the underlying structure, the correlation matrix was initially examined to determine how appropriate it was for factor analysis. The Kaiser- Meyer- Oklin (KMO) value was .764, which was higher than the recommended minimum of 0.6

(Kaiser, 1974) indicating that the sample size was adequate for applying factor analysis. In addition, the value of the test statistic for sphericity (Bartlett, 1954) on the basis of a Chi-square transformation of the determinant of the correlation matrix was large (1.632E3). Bartlett's test of sphericity was significant, supporting the factorability of the correlation matrix and the associated significance level was extremely small (0.000). For factor extraction, principal component method was used, under the restriction that the eigen value of each generated factor was more than

one. A factor analysis was conducted to develop constructs that will help to evaluate factors that will influence customer's usage of e-banking. Four factors were generated, which explained 60.08 percent of the variance. The extracted factors were then rotated using variance maximizing method (Varimax). These rotated factors with their variable constituents and factor loadings are given in table 3. These factors are labeled security and trust, innovativeness, familiarity and awareness.

Table-III
Factor Analysis for Acceptance Factors of e-banking

Measurement Items	Security & Trust	Awareness	Familiarity	Innovativeness
Safety	.820			
Reliability	.790			
Liquidity	.716			
Insurance coverage	.782			
Transparency	.815			
Security & less risk to use	.841			
Privacy is maintained	.792			
Bill payment		.748		
e- ticket		.603		
Innovative services				
One stop banking		.758		.758
Demat holdings				.832
Easy to use				
Quick transaction				
Time saving			.826	
Convenient			.765	
No need to carry cash			.815	
Order cheque book		.782		
Apply for loans		.751		
Wide area network				
Online trading				
Eigen Values	4.484	3.913	1.770	1.297
Percentage of Variance	39.983	8.43	6.177	5.49
Cumulative Variance	39.983	48.413	54.590	60.08

Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization, Rotation converged in 14 iterations

The regression analysis was conducted to reveal how different factors identified through factor analysis affect the use of online banking. The respondents' intention to intensify the

acceptance of e-banking services was regressed on the four independent variables, namely security and trust, innovativeness, familiarity and awareness. The results are reported in table 4.

Table-IV
Regression Analysis on E-banking Acceptance Factors

Diffusion Factors	Regression Co-efficient	t values	Significance Level
(Constant)	2.175	65.923	.000
Security and Trust	.078	2.346	.020
Awareness	.646	19.539	.000
Familiarity	.007	.222	.825
Innovativeness	-.035	-1.051	.294
R ²	.665		
F ratio	96.946*		

* Significant at 1 percent level

The regression equation was significant at 1percent level with the F value of 96.946 and the independent variables account for 67 percent of the variance in degree of the acceptance of e-banking by the customers. Security and trust ($\beta=0.078$) and awareness ($\beta=0.646$) were significantly positively related to the acceptance of e-banking services, while familiarity and awareness did not emerge as significant factors in explaining the acceptance of e-banking services by the respondents. Koufaris and Hampton-Sosa (2004) also demonstrated that perceived security control of the site strongly influenced acceptance of online banking by customers. If the customers are less concerned about unauthorized use of or illegal access to their

personal and financial data by third parties, they will have greater influence on the willingness to use online banking, which in turn will lead to higher acceptance to it. Thus, banks should improve their web security features in order to enhance the customer's acceptance. White and Nteli (2004) find that "security" is the most important attribute for UK internet banking customers. Akinci et al. (2004) find that the selection of an internet banking service provider is effected by security, reliability and privacy. Security, which involves protecting users from the risk of fraud and financial loss, has been another important issue in safe use of the internet when conducting financial transactions in Saudi Arabia (Sohail and Shaikh, 2007).

CONCLUSION AND RECOMMENDATIONS

In a country like India, there is need for providing better and customized services to the customers. Banks must be concerned about the attitudes of customers with regard to acceptance of online banking. The importance of security and privacy for the acceptance of internet banking has been noted in many earlier studies and it was found that people have weak understanding of internet banking, although they are aware

about risk. The present study shows that customers are more reluctant to join new technologies or methods that might contain little risk. Hence, banks should design the website to address security and trust issues. The recommendations to the banks are that they have to increase the level of trust between banks' website and customers. In order to achieve this, the following strategies should be applied by banks.

- ❖ Banks should ensure that online banking is safe and secure for financial transaction like traditional banking.
- ❖ Banks should organize seminar and conference to educate the customer regarding uses of online banking as well as security and privacy of their accounts.
- ❖ Some customers are hindered by lack of computer skills. They need to be educated on basic skills required to conduct online banking.
- ❖ Banks must emphasize the convenience that online banking can provide to people, such as avoiding long queue, in order to motivate them to use it.
- ❖ Banks must emphasize the cost saving that online can provide to the people, such as reduce transaction cost by use of online banking.

REFERENCES

1. Akinci, S., Aksoy, S. and Atılğan, E. (2004), Adoption of internet banking among sophisticated consumer segments in an advanced developing country, *International Journal of Bank Marketing*, Vol.22 (3), pp. 212-32.
2. Aladwani, M. Adel (2001), Online banking: a field study of drivers, development challenges, and expectations, *International Journal of Information Management*, pp. 213-225.
3. Amato-McCoy, D. (2005), Creating virtual value, *Bank Systems and Technology*, 1(22).
4. Asher, J. (1999), Small business: Suddenly everyone wants a piece of it, *American Bankers Association. ABA Journal*, 91, (4).
5. Barnes, J.G., Howlett, D. M. (1998), Predictors of equity in relationships between financial services providers and retail customers, *International Journal of Bank Marketing*, Vol.16, pp.15-23.
6. Bauer, H.H., Hammerschmidt, M. and Falk, T. (2005), Measuring the quality of e-banking portals, *International Journal of Bank Marketing*, Vol. 23, No. 2, pp. 153-75.
7. Black, N.J., Lockett, A., Winklhofer, H. and Ennew, C. (2001), The adoption of internet financial services: a qualitative study, *International Journal of Retail & Distribution Management*, Vol.29 (8), pp. 390-398.
8. Calisir F. and Gumussoy, C. A., (2008), Internet banking versus other banking channels: Young consumers' view, *International Journal of Information Management*, Vol.28, pp. 215-221.
9. Centeno, C. (2004), Adoption of Internet services in the Acceding and Candidate Countries, lessons from the Internet banking case, *Telematics and Informatics*, Vol.21, pp. 293-315.
10. Chou, D., & Chou, A.Y. (2000), A Guide to the Internet Revolution in Banking, *Information Systems Management*, Vol.17 (2), pp. 51-57.
11. Chung, W. and Paynter, J. (2002), An Evaluation of Internet Banking in New Zealand, In *Proceedings of 35th Hawaii Conference in System Sciences (HICSS 2002)*, IEEE Society Press.
12. Daniel, E. (1999), Provision of electronic banking in the UK and Republic of Ireland, *International Journal of Bank Marketing*, Vol.17(2), pp. 72-82.
13. Durkin, M., Jennings, D., Mulholland G. and Worthington, S. (2008), Key influencers and inhibitors on adoption of the Internet for banking, *Journal of Retailing and Consumer Services*, Vol.15, pp. 348-357.
14. Eriksson, K., Kerem, K., & Nilsson, D. (2008), The adoption of commercial innovations in the former Central and Eastern European markets. The case of internet banking in Estonia", *International Journal of Bank Marketing*, Vol.26 (3), pp. 154-69.

15. Gerrard, P. and Cunningham, J.B. (2003), The Diffusion of internet banking among Singapore consumers, *The Journal of Bank Marketing*, Vol.21 (1), pp. 16-28.
16. Gerrard, P., Cunningham, J.B. and Devlin, J.F. (2006), Why consumers are not using internet banking: a qualitative study, *Journal of Services Marketing*, Vol.20 (3), pp. 160-168.
17. Grabner-Kräuter, S., & Faullant, R. (2008), Consumer acceptance of internet banking: the influence of internet trust, *International Journal of bank marketing*, Vol.26 (7), pp. 483-504.
18. Guerrero, M. M., Egea, J. M. O. and Gonzalez, M. V. R. (2007), Application of the latent class regression methodology to the analysis of Internet use for banking transactions in the European Union, *Journal of Business Research*, Vol.60, pp. 137-145.
19. Hamlet, C. (2000), Community banks go online, American Bankers Association. *ABA Journal*, Vol.92(3).
20. Howcroft, B., Hamilton, R. and Heder, P. (2002), Consumer attitude and the usage and adoption of home-based banking in the United Kingdom, *International Journal of Bank Marketing*, Vol.20 (3), pp. 111-121.
21. Hughes, T. (2001), Market orientation and the response of UK financial services companies to changes in Market conditions as a result e-commerce, *International Journal of Bank Marketing*, Vol.19 No.6, pp. 222-231.
22. Ibrahim, E.E., Joseph, M and Ibeh, K.I.N (2006), Customers' perception of electronic service delivery in the UK retail banking sector, *International Journal of Bank Marketing*, Vol. 24, No. 7, pp. 475-493.
23. Ilett, D., (2005), Online Bankers to Double by 2010, Retrieved on April 8, 2008, <http://www.silicon.com/financialservices/0,3800010322,39153014,00.htm>.
24. IMRB and IMAI (2006), Internet in India- 2006 (Summary Report of I-Cube, 2006), New Delhi: IMRB International (e-technology Group@IMRB).
25. Kothari,D.(2007), Banks are now just a Click or SMS away, *The Week*, Vol.25, No.48, pp. 63-76.
