



Journal of Internet Banking and Commerce

An open access Internet journal (<http://www.arraydev.com/commerce/jibc/>)

Journal of Internet Banking and Commerce, April 2010, vol. 15, no. 1
(<http://www.arraydev.com/commerce/jibc/>)

Customer Perspectives on E-business Value: Case Study on Internet Banking

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Abstract

Information technology is considered as the key driver for the changes taking place around the world. Internet banking (IB) is the latest and most innovative service offered

by the banks. The transformation from the traditional banking to e-banking has been a 'leap' change. The evolution of e-banking started from the use of Automatic Teller Machines (ATMs) and telephone banking (tele-banking), direct bill payment, electronic fund transfer and the revolutionary online banking. This study determines the consumer's perspective on internet banking adoption.

Keywords: internet banking; information and communication technology (ICT); perceived usefulness, ease of use, risk, awareness

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INTRODUCTION

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 new world of electronic banking is changing day by day. It is important to understand the customer's perception on internet banking. Today, many financial services organizations are rushing to become more customer focused. A key component of many initiatives is the implementation of Customer Relationship Management (CRM) software (Peppard, 2000). Many companies in the financial services sector have been quick to implement Internet capabilities, and electronic service is becoming a viable option for interaction between financial service providers and their customers (Rotchanakitumnuai, S and Speece, M 2004).

The challenging business process in the financial services pressurized banks to introduce alternate delivery channel to attract customers and improve customers' perception. Many banks have implemented Internet banking to offer their customers a variety of online services with more convenience for accessing information and making transactions. Customer satisfaction and customer retention are increasingly developing into key success factors in e-banking (Bauer et al, 2005). Technology, in particular, has been increasingly employed in service organizations to enhance customer service quality and delivery, reduce costs, and standardize core service offerings (Ibrahim et al, 2006; Kelley, 1989; Quinn, 1996; Dannenberg and Kellner, 1998; Lee and Lin, 2005; Bauer et al, 2005; Gounaris et al, 2005). There will be huge acceptance of online banking with the passage of time with growing awareness and education. A great many people are shifting to online banking and are readily accepting the usefulness of this bounty. Online banking service allows customers to manage their accounts from any place at any time for minimum cost; it gives abundant compensation to the client in terms of price and ease.

BACKGROUND AND OBJECTIVE

Mols et al. (1999) stated that the diffusion of electronic banking is more determined by customer acceptance than by seller offerings. Though customer acceptance is a key driver determining the rate of change in the financial sector, empirical studies on what is

holding customers from acceptance of Internet banking have been few (Sathye, 1999). Not enough is known regarding how customers perceive and evaluate electronically delivered services. Lee and Lin (2005) have also recently highlighted the need for further research to measure the influence of e-service on customer-perceived service quality and satisfaction (Ibrahim et al, 2006). This study considers the four factors perceived usefulness, perceived ease of use, consumer awareness about internet banking and perceived risks associated with internet banking.

While Internet banking has grown rapidly, there is not enough evidence of its acceptance amongst consumers. Robinson (2000) reported that half of the people that have tried online banking services will not become active users. Another author claims that Internet banking is not living up to the hype (Weeldreyer 2002). Highly publicized cases involving major security failures might have contributed to the public's concern and lack of acceptance of Internet banking.

The present study aims at examining the impact of perceived usefulness, perceived ease of use, consumer awareness on internet banking and perceived risk on the acceptance of Internet banking by the consumers.

Internet banking

Internet banking is the latest in the series of technological wonders of the recent past. ATMs, Tele-Banking, Internet Banking, Credit Cards and Debit Cards have emerged as effective delivery channels for traditional banking products. Internet or Electronic or online banking is the newest delivery channel to be offered by retail banks in many developed countries, and there is a wide agreement that this channel will have a significant impact on the market. Banks know that the Internet opens up new horizons for them and moves them from local to global frontiers (Mavri and Ioannou, 2006). Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani et al, 2009; Henry, 2000). In its simplest form, electronic banking may mean the provision of information about the bank and its products via a page on the internet (Ibrahim et al, 2006). It is the types of services through which bank customers can request information and carry out most retail banking services such as balance reporting, inter-account transfers, bill-payment, etc., via a telecommunication network without leaving their homes or organizations (Aladwani, 2001; Daniel, 1999; Mols, 1998; Sathye, 1999). In essence, it is an electronic consumer interface and an alternative channel of distributions. Online banking has been regarded as the most important way to reduce cost and maintain or enhance services for consumers (Hua, 2009). It provides universal connection from any location worldwide and is universally accessible from any internet linked computer (Thulani et al, 2009; Perunal and Shanmugan, 2004; Bradley and Stewart, 2003 and Rotchanakitumnuai and Speece, 2003). It is a process of innovation whereby customers handle their own banking transactions without visiting bank tellers.

Information technology developments in the banking sector have sped up communication and transactions for clients. Online banking is also one of the technologies which are fastest growing banking practices nowadays. It is vital to extend this new banking feature to clients for maximizing the advantages for both clients and

service providers (Qureshi et al, 2008). The Internet has an ever-growing importance in the banking sector because of the advantages it brings to both the entities and their customers. Although information system (IS) expenditure is regarded costly and risky financial institutions are one of the largest investors in IS (Mashhour and Zaatreh, 2008; Robson, 1997). Internet is the cheapest delivery channel for banking products as it allows the entity to reduce their branch networks and downsize the number of service staff. The navigability of the website is a very important part of Internet banking because it can become one of the biggest competitive advantages of a financial entity (Ortega et al, 2007). Bankers consider 'minimizes inconvenience', 'minimizes cost of transactions' and 'time saving' to be important benefits and 'chances of government access', 'chances of fraud' and 'lack of information security' to be vital risks associated with electronic banking (Kaleem and Ahmad, 2008). Due to increase in technology usage the banking sector's performance increases day by day. Online banking is becoming the indispensable part of modern day banking services. Banking industry is also one of the influenced industries adopting technologies which are helpful in providing better services to customers. Quality of service is improved by using technological innovations. Online banking is time saving (Qureshi et al, 2008).

Types of Internet banking

According to Aladwani (2001) different forms of online banking are web-based banking where a customer can access his or her account(s) when he or she uses the Internet; second form of online banking is where a bank customer uses a modem to dial-up to a bank's server to access his or her bank account(s). The later type of online banking is known as dial-up banking. A special type of dial-up banking is called an Extranet, a private network between a bank and its corporate customers.

Thulani et al (2009), Yibin (2003) and Diniz (1998) identify three functional level/kinds of internet banking that are currently employed in the market place and these are: Informational, Communicative and Transactional.

Informational (Websites) - This has been identified as the first level of internet banking. Typically the bank has the marketing information about the bank's products and services on a standalone server. The risk is very low as informational systems typically have no path between the server and the bank's internal network.

Communicative/Simple transactional (Websites) – This type of internet banking allows some interaction between the bank's systems and the customer. The interaction is limited to e-mail, account inquiry, loan application or static file updates (name and address). It does not permit any funds transfers.

Advanced Transactional (Websites) - This level of internet banking allows bank customers to electronically transfer funds to/from their accounts, pay bills and conduct other banking transaction online.

Consumer attitude towards Internet banking

Technological innovations are having significant importance in human general and professional life. This era can safely be attributed as technology revolution. The quick expansion of information technology has imbibed into the lives of millions of people. Rapid technology advancements have introduced major changes in the worldwide

economic and business atmosphere (Qureshi et al, 2008).

Research on consumer attitude and adoption of internet banking showed there are several factors predetermining the consumer's attitude towards online banking such as person's demography, motivation and behavior towards different banking technologies and individual acceptance of new technology. It has been found that consumer's attitudes toward online banking are influenced by the prior experience of computer and new technology (Laforet and Li, 2005). The adoption of electronic banking forces consumers to consider concerns about password integrity, privacy, data encryption, hacking, and the protection of personal information (Benamati and Serva, 2007). Electronic banking requires perhaps the most consumer involvement, as it requires the consumer to maintain and regularly interact with additional technology (a computer and an Internet connection) (Jane et al, 2004). Consumers who use e-banking use it on an ongoing basis and need to acquire a certain comfort level with the technology to keep using it (Servon, and Kaestner, 2008).

Customer adoption is a recognized dilemma for the strategic plans of financial institutions. Several studies have investigated why individuals choose a specific bank. Important consumer selection factors include convenience, service facilities, reputation and interest rates (Kennington et al., 1996; Zineldin, 1996). According to Delvin (1995), customers have less time to spend on activities such as visiting a bank and therefore want a higher degree of convenience and accessibility. The service-quality attributes that the Internet banks must offer to induce consumers to switch to online transactions and keep using them are perceived usefulness, ease of use, reliability, responsiveness, security, and continuous improvement (Liao and Cheung, 2008). In another study by Liao and Cheung, 2002, they found that individual expectations regarding accuracy, security, network speed, user-friendliness, and user involvement and convenience were the most important quality attributes in the perceived usefulness of Internet-based e-retail banking. The crucial factors that affect an individual's decision to use or not to use online services the individual's age, the difficulties of using the Internet, the fear of changes in the banking sector due to technological development and the lack of information concerning products and services provided to customers through electronic delivery channels. Factors such as the speed of transactions or the cost of using the Internet have little impact on an individual's final decision (Mavri and Ioannou, 2006).

In the study by Ibrahim et al, 2006, revealed six composite dimensions of electronic service quality, including the provision of convenient/accurate electronic banking operations; the accessibility and reliability of service provision; good queue management; service personalization; the provision of friendly and responsive customer service; and the provision of targeted customer service. Perceived usefulness, security and privacy are the main perusing factors to accept online banking system (Qureshi et al, 2008). According to study conducted by Amin, (2007), perceived usefulness, perceived ease of use, perceived credibility and computer self-efficacy are the factors affecting the adoption of internet banking.

RESEARCH MODEL AND HYPOTHESES

Perceived usefulness and perceived ease of use are the two components of Technology Acceptance Model (TAM). According to Davis (1989), "perceived usefulness is the extent

to which a person believes that using a particular system will enhance his or her performance, while perceived ease of use is the extent to which a person believes that using a particular system will be free of effort". TAM has been widely used by information system researcher; there is a common agreement among them that the model is valid in predicting the individual's acceptance of new technologies (Doll et al, 1998; Chin and Todd, 1995; Segars and Grover, 1993; Adams et al, 1992). Perceived usefulness and perceived ease of use is significant factors affecting acceptance of an information system or new technologies. Prior research has empirically found positive relationship between perceived ease of use and perceived usefulness as critical factors on the use of e-banking (Poon, 2008; Pikkarainen et al., 2004; Wang et al., 2003; Chau, 2001; Hong et al., 2001; Agarwal et al., 2000; Johnson and Marakas, 2000; Venkatesh and Davis, 1996) Hence an application perceived to be useful perceived to be easier to use than another is more likely to be accepted by users. By applying these into online banking context we hypothesize:

H1: Perceived usefulness has a positive effect on intention to adopt and use IB.

H2: Perceived ease of use has a positive effect on intention to adopt and use IB

Adoption is the acceptance and continued use of a product, service or idea. According to Rogers and Shoemaker 1971; Sathye, 1999), consumers go through "a process of knowledge, persuasion, decision and confirmation" before they are ready to adopt a product or service. The adoption or rejection of an innovation begins when "the consumer becomes aware of the product" (Sathye, 1999; Rogers and Shoemaker, 1971). Consumers will seek out those financial products and suppliers which offer the best value for money and they are educated about it. Hence, for adoption of Internet banking, it is necessary that the banks offering this service make the consumers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors. Consumers must become aware of the new brand or technology. An important characteristic for any adoption of innovative service or product is creating awareness among the consumers about the service/product (Sathye, 1999).

The amount of information consumers have about online banking has been identified as a major factor impacting the adoption. According to Sathye (1999) while the use of online banking services is fairly new experience to many people, low awareness of online banking is a major factor in causing people not to adopt online banking. In an empirical study of Australian consumers Sathye (1999) found that consumers were unaware about the possibilities, advantages/disadvantages involved with online banking. Hence, we posit that:

H3: Awareness about IB has a positive effect on intention to adopt and use IB

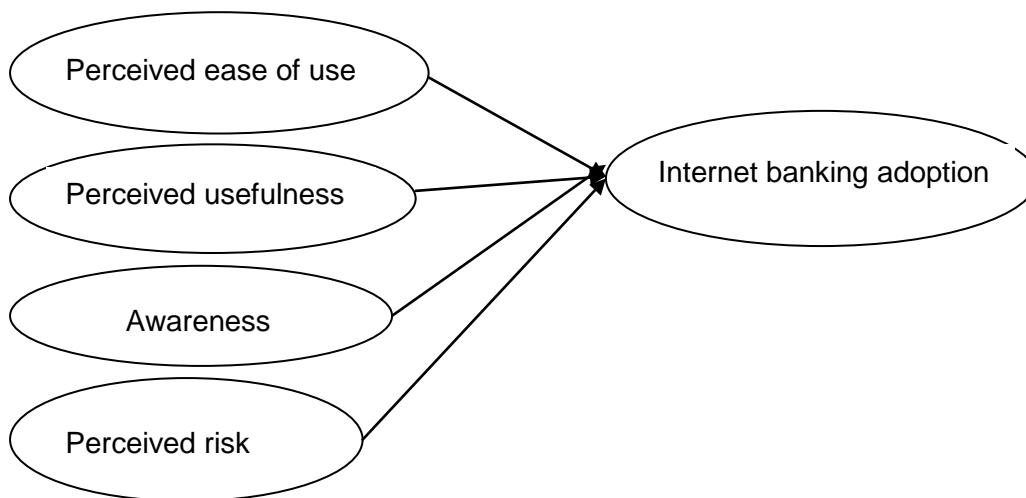


Figure 1: Model

Perceptions of risk are a powerful explanatory factor in consumer behavior as individuals appear to be more motivated to avoid mistakes than to maximize purchasing benefits (Mitchell 1999). The construct Perceived Risk reflects an individual's subjective belief about the possible negative consequences of some type of planned action or behavior, due to inherent uncertainty.

Pavlou (2002) refers to perceived system risk as the overall amount of uncertainty perceived by an organization in a particular purchase situation. The Perceived Risk associated with online transactions may reduce perceptions of behavioral and environmental control, and this lack of control is likely to negatively influence e-commerce usage intentions (Pavlou, 2003). E-commerce applications should be enhanced by reducing the level of perceived risk (Belkhamza and Wafa, 2009). Owing to the open Internet technology infrastructure and lack of sufficient laws concerning e-commerce activities, the trust and trust related-concepts (that is, perceived risk, credibility, image and reputation) have been integrated with the adoption models to explain IB adoption behavior (Ozdemir and Trott,2009; Pavlou, 2003; Pikkarainen et al, 2004; Suganthi and Balachandran, 2001; Suh and Han, 2002; Eriksson et al, 2005). Diffusion of innovation literature is often silent on perceived risk as a factor influencing the diffusion of an innovation, despite adoption behavior often being a process of dealing with the uncertainty about incorporating an innovation into ongoing practice (Andrews, and Boyle, 2004; Mahajan et al, 1990). Services are inherently more risky than products and that the major reason for this is the higher levels of uncertainty which are associated with services (Mitchell 1999; Mitchell and Greatorex, 1993; Mitchell and Greatorex, 1990). Polatoglu and Ekin (2001) also found that perceived risk was one of the major factors affecting consumer adoption, as well as customer satisfaction of Internet banking services. Perceived risk usually arises from uncertainty. Hence we hypothesize:

H4: Perceived risks have a negative impact on intention to adopt and use IB.

RESEARCH METHODOLOGY

The key intention of this paper is to evaluate those factors that manipulate the nature of customers towards online banking and their growing tendency towards the online

financial institutions. A survey instrument in the form of questionnaire was developed through data collected from previous studies on acceptance of Internet banking. We constructed several questions in the questionnaire based on the objectives of the research. Questions were adapted from the previous studies. Likert scale is used in order to identify the respondents' perceptions towards Internet banking adoption. During the interviews we sought general information from the managers about online banking and asked them to discuss the reasons for undertaking online banking and to highlight online banking development challenges. We also asked them to discuss the issues relevant to the future of the initiative. The questionnaires were based on customers' intention to adopt internet banking.

Sample

Convenience sampling method was used. It is a type of nonprobability sampling which involves the sample being drawn from that part of the population which is close to hand. That is, a sample population selected because it is readily available and convenient. The reasons of using this sampling type are twofold. First, it offers an easy way to obtain the raw data for the further analysis. Second, it saves times and costs since the respondents can be randomly selected.

Choosing this campus is because of two reasons. First, those business and economics student are revealed with the knowledge of applied business and economics. At the same time, they are equipped with the knowledge of computer science, where the concept of Internet banking is not an alien for these students. Second, it was found that there is no study ever conducted in the campus, it leaves a motivation to the research to perform a study in order to investigate the students' adoption for Internet banking in the near future.

Table 1: Profile of respondents

Demographics	Items	No. of respondents	Percent
Gender	Male	42	78.84
	Female	11	21.15
Age group	20-30	43	82.7
	31-40	06	11.5
	41-50	02	03.8
	> 50	01	01.9
Education	Secondary education	06	11.5
	Graduate	15	28.8
	Post graduate	29	55.8
	Other	02	03.8
Occupation	Public sector	04	07.7
	Private sector	13	25.0
	Self employed	02	03.8
	Other	33	63.5

Table 1 shows the profile of the respondents. The sample shows that the number of male (78.84%) respondents is higher than the number of female (21.15%) respondents. The sample shows that the largest age group that responded was from 20 to 30 years of

age (82.7%), followed by age 31 to 40 (11.5%), then 41 to 50 (03.8%) and >50 (1.9%). In the education background more than 55% of the respondents were postgraduate and more than 28% were graduates. And around 64% were students (other in table), 25% worked in private sector, others were self employed and worked in public sector.

DISCUSSIONS AND FINDINGS

Although internet banking provides flexibility in performing financial transaction, fast and easy, however individuals are still reluctant to adopt the system because of several reasons. First, the security and privacy are two elements in the perceived risk. Without a proper knowledge of the system, individuals are not interested to test the system. Perceived usefulness, ease of use and consumer awareness has positive impact on the intention to adopt internet banking while perceived risk has negative impact on it. When online banking is perceived as useful, customer's intention to adopt it would be greater. Likewise bank customers are likely to adopt internet banking when it is easy to use. This shows that bank customers anchor their online banking adoption intention to the beneficial outcomes and ease of use process of the system. Further, the research instrument was tested for reliability using Cronbach's coefficient alpha estimate. The Cronbach's alpha values for all dimensions range from 0.60 to 0.93, exceeding the minimum alpha of 0.6 (Hair et al., 1998), thus the constructs measures are deemed reliable.

Table 2: Reliability results

Determinants	No. of items	Reliability for this sample
PU	9	0.934
PEU	5	0.860
AW	7	0.936
PR	11	0.600

Table 3: Factor loadings

Determinants	Loadings	Eigen value	Cumulative % of variance
Perceived usefulness		7.206	22.518
PU1	0.780081		
PU2	0.681048		
PU3	0.761725		
PU4	0.827245		
PU5	0.464396		
PU6	0.835373		
PU7	0.647373		
PU8	0.737646		
PU9	0.609254		
Perceived ease of use		6.117	41.634
PEU1	0.558357		
PEU2	0.577729		
PEU3	0.537585		
PEU4	0.569031		
PEU5	0.824878		

Consumer awareness		5.829	59.850
AW1	0.850832		
AW2	0.711179		
AW3	0.6588387		
AW4	0.600542		
AW5	0.662101		
AW6	0.662596		
AW7	0.658444		
Perceived risk		3.230	69.942
PR1	0.833768		
PR2	0.65829		
PR3	0.759744		
PR4	0.6508855		
PR5	0.679542		
PR6	0.741896		
PR7	0.679381		
PR8	0.794939		
PR9	0.650991		
PR10	0.713879		
PR11	0.643713		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.

Principal component factor analysis with a varimax rotation was conducted. The aim of factors analysis is to confirm the construct validity of the scales could be performed adequately by using principle component analysis. In order to reach this, the minimum factor loading of 0.6 on its hypothesized constructs is proposed (Nunnally, 1978). A number of analyses were conducted for factors analysis. Factor loading values were obtained using varimax rotation. According to the above table, most of the factor loading for each instrument exceeded 0.6, meeting the essentially significant level of convergent validity. Using an eigenvalue greater than 1 as a selection criterion, four factors emerged. These character factors accounted for 69% of the variance and the factor loading for all items were greater than 0.6. Hence the results show that H1, H2, H3 and H4 are confirmed. The results are consistent and are supported by previous studies.

CONCLUSION

The result of this study shows that perceived usefulness, perceived ease of use, consumer awareness and perceived risk are the important determinants of online banking adoption.

This study meets the desired objective; but it suffers from one setback. Study concludes that majority of customers are accepting online banking because of many favorable factors. Analysis concluded that usefulness, ease of use of the system awareness about online banking and risks related to it are the main perusing factors to accept online banking system. These factors have a strong and positive effect on customers to accept online banking system

The relatively small size of the sample limits generalization of the outcome of the study. The study is concentrated on a particular location and hence the result may vary with location and the demography of the people. Similar study can be conducted in other colleges and universities and results can be compared.

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