MOVING TOWARDS E-BANKING IN AN EMERGING ECONOMY:

INDIAN SCENARIO

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ABSTRACT

The progress in information technology has slashed the costs of processing information, while the internet has facilitated its transmission, thus facilitating change in the very essence of the banking business. World over banks are reorienting their business strategies towards new opportunities offered by e-banking. E-Banking refers to electronic banking. E-banking is also pronounced as / advocated as / stated as virtual banking or online Banking or banking without wall. E-banking involves information based banking under the
Informational Technology system. E-banking has enabled banks to scale borders, change strategic behaviour and thus bring about new possibilities. This study determines the factors influencing the consumer’s adoption of E-banking in India and hence investigates the influence of perceived usefulness, perceived ease of use and perceived risk on use of E-banking. It is an essential part of a bank’s strategy formulation process in an emerging economy like India. Survey based questionnaire design with empirical test was carried out. This paper reveals the current situation of E-banking in India and the impact of E-banking on banking activities.

**Keywords:** Electronic banking, E-delivery Channels, perceived usefulness, perceived ease of use, risk, India, emerging economy.

**INTRODUCTION**

We're living in a world dominated by the new idea economy, ticking to the beat of Internet time, where customers are quality conscious, time conscious and price conscious. Technology is creating new agile players making the existing ones obsolete. Banks around the world are subject to the same radical changes -new competition, technology, deregulation, and globalization. While the entire banking industry is moving fast to improve the IT infrastructure and to implement core-banking solution to integrate the entire banking operations. Initially, banks promoted their core capabilities i.e., products, services and advice through the Internet. Then, they entered the e-commerce market as providers/distributors of their own products and services. Now-a-days many banks are providing the services through e-channels like ATMs, I-banking, M-banking, Tele-banking, Debit cards, Credit cards etc. Most of the initiatives regarding e-channels are aimed at
providing better and more efficient customer service by offering multiple options to the customers.

The fast advancing global information infrastructure (including information technology and computer networks such as the Internet and telecommunications systems) enable the development of electronic commerce at a global level. The nearly universal connectivity which the Internet offers has made it an invaluable business tool. These developments have created a new type of economy, which many call the ‘digital economy’. This fast emerging economy is bringing with it rapidly changing technologies, increasing knowledge intensity in all areas of business, and creating virtual supply chains and new forms of businesses and service delivery channels such as e-banking. The integration of e-banking applications with legacy systems implies an integrated risk management approach for all banking activities of a banking institution. E-banking advantage was that the service is available 24 hours a day, seven days a week, apart from offering simpler transaction processing and better customer interactivity. E-banking will lead to a customer-centric approach and information-yielding interactions with customers will be maximised. This study is intended to understand the preferences of customers of Indian banks on technology-based services.

LITERATURE REVIEW

Banking has never been more important to our society than it is today. The advance of communication and computer technology and the availability of the internet have made it possible that one can do most banking transactions from a remote location even without stepping into a physical financial structure – i.e., the emerging of e-banking (Boyes and Stone, 2003). E-banking has been viewed as a revolutionary progress in the banking
industry. As predicted by Microsoft’s Bill Gates – *Banks are dinosaurs and will be replaced by microcomputers*. Foreseeing the threat and the challenge from the Mr. Gates comments, as an industry, the banks are formulating strategic plans to fight back in winning their customers (Healy, 1999). Their first target is the new technology – including all new telecommunication and computer technology. The industry believes that by adopting new technology, the banks will be able to improve customer service level and tie their customers closer to the bank. American banks had launched their e-banking services among the few first in the international banking field starting as early as 1992 (American Banker, 2000). Through the competition, banks quickly realised that there are a momentous number of customers like e-banking – to do banking electronically. As a result, many banks, based on their existing 24-hour telephone banking systems, have developed and implemented several important earlier e-banking applications so that their customers are able to pay bills, transfer money among accounts, check account history, download statement information, and computerise their checkbooks online all at easy and around the clock (Graven, 2000).

Facing extremely intensive competition from non-banking sector, the banking industry has adopted a more aggressive approach in the development of new e-banking services. For instance, some large banks have started to install advanced software to process all consumer loan applications online, a new paperless e-loan process. And interestingly, the signatures will be created from images collected by special electronic signatures (e-signature), which has been available and legal since 2000. In UK, banks now view e-banking from new distribution channel before to new business models in which e-banking service is considered together with banks’ strategic planning, business process, and product/service package offering (Li, 2002; Brown et al., 2004). Empirical studies from the consumer side of e-banking have been reported recently, such as one focusing on the quality of customers on
the utilisation of current e-banking services (Hitt and Frei, 2002), and another recent one examining the customer attitudes towards e-banking and concluding that online banking marketing will gain importance at a faster rate in the coming years (Kaynak and Harcar, 2005). Other new e-banking services have targeted mortgage lending, consumer lending, and small business loan products. As an integral part of the e-business, the e-banking industry has been growing at a rapid pace, to help banks cut costs, increase revenue, and become more convenient for customers (Halperin, 2001). A recent research even investigated the impact of e-banking on building inter-firm relationships within 200 Australian banks and showed that an effective e-banking may enhance inter-firm relationships through improved traditional communications (Rao, 2004). Currently, it is believed that a combination of a low percentage of customers using e-banking services on a consistent basis and a relatively low start-up cost in developing e-banking services – will make the impact of e-banking (positive or negative) quite limited on the bottom line of most financial institutions (Marenzi et al., 2001). On another hand, e-banking services could be highly demanded and desirable to accommodate the sudden, rapid growth that has occurred in other information-intensive industries such as travel and securities brokerage. Some new e-banking services have gained a growing popularity such as e-payments and statement aggregation involving e-mail statements, e-mail alerts, online loan decisions, fraud protection, and inter-bank funds transfer capabilities (Stoneman, 2001). The e-banking sector has been growing to reach a competitive level, and has become a serious competitor to traditional banks. With the advantages of quick and easy application process, less technical glitches, more funding options, and low minimum opening deposit requirement, traditional banks have to compete more relying on their conventional face-to-face services, first-name calling friendly environment, and trust and secure feeling of transacting business with a person in a financial institution (Hirst, 2000).
There are several important decisions a bank must make in the development of e-banking services. Top of its priority is to address the bank’s privacy policy and procedures – which will be scrutinised by the related governmental regulatory bodies.

Second on the priority list is about e-banking disclosure policies to fully define the bank’s responsibilities and liabilities and also those of its customers regarding the e-banking service. Next decision is related to the design of the package of e-banking services to be offered to its customers. Those e-banking services could be ranging from a standard package, or a more complex service offerings (including bond purchases, wire transfers, and e-payments), and even a whole package (including tax payments, cash orders, bill payment, direct payment, new account enrolments, and commercial cash management).

Finally, the development of e-banking service has encouraged the adoption of a decentralised approach to give banks more needed flexibility to distribute online access to a much larger number of employees and potential customers. The decentralization approach is motivated by the fact that a decentralised system could respond to customer’s e-requests in a more timely fashion. In fact, the most criticised aspect of the current e-banking service is the slow response to customers’ e-requests (Sathye, 1999; Szymanski and Hise, 2000; Beckett, 2000). Customers do not like to be ignored. Under today’s highly competitive market, banks must respond to customers’ requests in their e-banking services more promptly and forcefully (Hewson and Coles, 2001; June and Cai, 2001; Black et al., 2001; Karjaluoto et al., 2002). While e-banking has been a fast-growing industry among all types of e-business, it has argued that somehow its positive impact was overestimated in some claims and its limit was underestimated more often (Wolfe, 2004). With the statistics of about 80% of all banking transactions are currently still conducted at bank branches, while only 13% are performed through the internet and another 12% via the phone. But the
same study predicts that the e-banking services will be very likely to dominate consumer choice in the near future (Wolfe, 2004). Risk in the banking industry has always existed, but providing e-banking services actually has increased or modified some traditional risks associated with banking activities, in particular strategic, operational, legal and reputation risks, thereby influencing the overall risk profile of banking (Duran, 2001). As a result, the Basel Committee established the Basel Guidelines consisting out of 14 principles for banks to manage the risk of e-banking (Rehm, 2003). It has been recognised that to make e-banking a success, it must be not through it being a resource of income, but rather for its money saving ability and a port of interaction with customers (Wade, 2003). One of the essential ingredients for a successful e-banking operation is therefore simplicity and user-friendliness in the financial planning and management process (Hamisah, 2003). Many new e-banking initiatives have aimed to become more customer focused while improving e-banking service quality (Knights and McCabe, 1997).

Filotto et al. (1997) illustrated that the adoption rates of ATM were higher among young users. In addition, Barnett (1998) findings proved that younger consumers are more comfortable in using e-banking. Katz and Aspden (1997) findings explained that males were more likely to adopt e-banking than females.

Hasan (2002) found that online home banking has came out as a significant strategy for banks to attract and retain customers. About 75 percent of the Italian banks have adopted some form of internet banking during the period 1993-2000. The study also found that the higher likelihood of adopting active internet banking activities is by larger banks, banks with higher involvement in off-balance sheet activities, past performance and higher branch network.
Mishra (2005) in his paper explained the advantages and the security concerns about internet banking. According to him, improved customer access, offering of more services, increased customer loyalty, attracting new customers are the primary drivers of internet banking. But in a survey conducted by the online banking association, member institutions rated security as the most important concern of online banking.

Nyangosi et al. (2009) collected customer’s opinions regarding the importance of e-Banking and the adoption levels of different e-Banking technologies in India and Kenya. The study highlighted the trends of e-banking indicators in both countries. The overall result indicates that customers in both countries have developed a positive attitude and they give much importance to the emergence of e-banking.

Chau and Lai (2003) conducted a study and concluded that ‘perceived ease of use’ might be the single most significant determinant of users’ acceptance of internet banking perceived usefulness and accessibility followed perceived ease of use. Other factors such as task familiarity, personalisation and alliance services also exhibited positive influences on attitude through significant influence on perceived usefulness.

In India the result of a study conducted by Malhotra and Singh (2007) indicates that larger banks, younger banks, non-governmental banks, and banks with more fixed assets, banks with more deposits, and the banks with lower number of branches are more eager than other banks to present electronic banking services. Furthermore the banks that have smaller market share find the use of e-banking as a useful tool to attract more customers. In addition the more banks turn to offering electronic banking services, the more other banks are willing to develop their electronic services. Lee (2009) based on the results of his study, points out that the perceived risk (in five dimensions, that is, performance, social,
temporal, financial and security risks) have a negative influence on customers’ attitudes but a positive effect on the perceived usefulness. Besides, customer’s attitudes have a direct influence on their behavioral intention to use electronic banking services. Calisir and Gumussoy (2008) have concluded that internet banking, ATM and phone banking substitute each other. The study also indicates that internet banking is considered to be efficient for ease of use and access, and that the users of internet banking lack confidence in the security of the web sites of internet banking.

Sadeghi and Heidarzadeh (2010) have provided a model on customer’s satisfaction of using electronic banking services which comprises seven factors: convenience, accessibility, accuracy, security, usefulness, bank image, and web site design. Some of these factors illustrate a significant statistical difference between males and females. Another study indicates that perceived usefulness, trust and government support all positively associated with the intention to use online banking in Vietnam. Contrary to the technology acceptance model, perceived ease of use was found to be not significant in that study (Chong et al., 2010). Proença and Rodrigues (2011) observed that Portuguese users of self-service technology (SST) banking services are likely to be young to middle-aged individuals, with medium to high levels of education. They have a greater propensity to complain and are more price-sensitive than non-users of such services. Peevers et al. (2011) investigated some aspects of electronic banking found that there is no significant differences detected between customer attitude scores for usability of interactive voice response (IVR) calls involving funds transfers with, or without, an SMS confirmation. Meuter et.al (2000) found that customers distinguish the quality of customer interactions that take place during service delivery and the quality of the outcome the customer receives in the service encounter. Customers perceive the quality of services of Internet banking based on the performance of online delivery systems – not on the processes in which the delivered
service is developed and produced. Because customers perceive Internet banking service quality based on relatively standardized outcomes determined by online systems.

From the review of literature, we found that education is one of the crucial factors for expanding e-banking. Younger consumers and males are more comfortable in using e-banking. Convenience and accuracy, feedback and complaint management, efficiency, queue management, accessibility and customization were found to be primary dimensions of e-banking service quality. However, most of the studies are carried out in foreign countries. In light of the above findings, the present study is undertaken in Indian context to find out bankers perspectives on e-banking.

1. CONCEPTUAL FRAMEWORK

1.1 WHAT IS E-BANKING?

"e" – a prefix meaning "electronic" as in, for example, e-mail, e-banking or e-commerce.

E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. 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.

In simple words, e-banking implies provision of banking products and services through electronic delivery channels. Electronic banking has been around for quite some time in the form of automatic teller machines (ATMs) and telephone transactions. In more recent
times, it has been transformed by the internet – a new delivery channel that has facilitated banking transactions for both customers and banks. For customers, the internet offers faster access, is more convenient and available around the clock irrespective of the customer’s location. Technology innovation and fierce competition among existing banks have enabled a wide array of banking products and services, being made available to retail and wholesale customers through an electronic distribution channel, collectively referred to as e-banking.

It is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following terms all refer to one form or another of electronic banking: personal computer (PC) banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC banking and Internet or online banking are the most frequently used designations. However, the terms used to describe the various types of electronic banking are often used interchangeably.

1.2 DIFFERENT FORMS OF E-BANKING

The terms ‘PC banking’, ‘online banking’, ‘Internet banking’, ‘Telephone banking’ or ‘mobile banking’ refer to a number of ways in which customers can access their banks account without having to be physically present at the branch of a bank. E-banking may be understood as the term that covers all the ways of banking business electronically.
Tele-Banking

Tele-banking service is provided by phone. To access an account it is required to dial a particular telephone number and there are several options of services. Options included:

- ✂ Checking account balance
- ✂ Funds transfer between current, savings and credit card accounts
- ✂ Bill payments
- ✂ Stock exchange transaction
- ✂ Receive statement via fax
- ✂ Loan payment information
PC Banking

The increasing awareness of the importance of literacy of computer has resulted in increasing use of personal computers through the entire world. Furthermore, incredible plummet of cost of microprocessor has accelerated the use of computer. The term ‘PC banking’ is used for banking business transacted from a customer’s PC. Using the PC banking or home banking now customers can use their personal computers at home or at their office to access their accounts for transactions. For subscribing to and dialing into the banks Intranet proprietary software system is use for password. Basically, there are two types of PC banking. The first type is online banking, in which bank transactions are conducted within closed networks. The customer needs specialized software provided by his bank. The second type is Internet banking, which German banks have been offering since the mid-nineties, although the only product they were offering at the time of information. Unlike closed networks, Internet banking permits the customer to conduct transactions from any terminal with access to the Internet.

Internet Banking

Internet banking would free both bankers and customers of the need for proprietary software to carry on with their online banking transactions. Customer behavior is changing rapidly. Now the financial service is characterized by individuality, independence of time, place and flexibility. These facts represent huge challenges for the financial service providers. So the Internet is now considered to be a ‘strategic weapon’ to satisfy the ever-
changing customer’s demand and innovative business needs. Adequate legal framework and maximum security are the two essential factors for Internet banking. The comprehensive security infrastructure includes layers of security from the network to the browser, including sophisticated encryption that protects customers’ from intrusion when they access the bank over the public network.

Mobile Banking

Actually mobile banking is a variation of Internet banking. Mobile banking is a good example of how the lines between the various forms of e-banking are becoming gradually blurred. Due to the new transmission technologies such as WAP (Wireless Application Protocol), portable terminal like mobile phones, personal digital assistant (PDA) or small hand-held PCs are providing bank customers with access to the Internet and thus paving the way to Internet banking. It assures immense flexibility and makes the financial services independent of time and place. However, the use of mobile banking is still in a nascent state. The slower transmission speed of the WAP standard and the limited amount of information available are just two of the factors inhibiting the use of those terminals.

1.3 E-BANKING: INDIAN SCENARIO

To cope with the pressures of growing competition, Indian commercial banks have adopted several initiatives and e-banking is one of them. The competition has been especially tough for the public sector banks (PSBs), as the newly established private sector and foreign banks have already sharpened their competitive edge. Some of the proactive PSBs have been
striving hard to make their structures flexible enough to accommodate technological changes. Adoption of technology has facilitated alternative channels for delivery within the PSBs, and, in turn, put pressure on them to restrict or limit the branch network and employ a better skilled workforce. E-banking, facilitated by the technological revolution, has strongly impacted strategic business considerations for Indian banks (including the PSBs) by cutting down costs of delivery and transaction massively.

In India, currently, there are two types of customers- one who is a multi-channel user and the other who still relies on the branch as the anchor channel. The primary challenge for banks is to provide consistent service to customers irrespective of the kind of channel they use. The channels broadly cover the primary channels of branch (i.e, teller, platform, ATM), phone (i.e. call centre, interactive voice response unit), and internet channel (i.e. personal computer, browser, wireless) banking. Banks in India have been working towards a vision that includes trans-formed branches, enhanced telephone services, and leading-edge internet banking functions that provide a consistently positive multi-channel experience for customers. Even for PSBs, the ongoing and future investments in technology are massive. At present, the cumulative amount earmarked by 10 major PSBs add up to a hefty `2,200 crore plus. It is expected that the provision of financial services through a versatile technology platform will enable these banks to acquire more customers, cut costs, and improve service delivery. Though many positive signs are already visible in India, including a higher acceptance of technology by banks and customers, it is a reality that most projects have not yet been deployed on a large scale.
E-BANKING IN INDIA: MAJOR CONCERNS

First, in India, there is a risk of the emergence of a ‘digital divide’ as the poor are excluded from the use of the internet and so from the financial system. Empirical evidence shows that richer countries possess higher concentrations of internet users (higher than income concentration) in comparison with poorer countries [Hawkins 2002]. In India (where the poverty ratio is still adverse at 26.1 per cent of total population), it is likely that wealthier people will rapidly migrate to e-banking platforms leaving the poor to bear the cost of the physical infrastructure of branches in the form of transaction fees or non-competitive interest rates on their deposits.

Second, even today, the operational environment for public, private and foreign banks in the Indian financial system is quite different. A handful of foreign banks operating in India first offered e-banking services to their customers such as ATMs, computerized monthly statements, secure online operations, etc. The new generation of private sector banks (who did have developmental obligations similar to their counterparts in the public sector) did not possess a legacy of manual practices and, hence, were able to adopt easily modern banking practices with state-of-the-art-operations. However, challenges before the public sector banks are plenty and of a different kind. While, they have to handle volumes which are mind boggling, there are also issues of legacy, old habits and political pressures. Systems of accounting, control and delegation were set up decades ago and adoption of technology in terms of ‘real time’ banking and its compatibility with all phases of banking is not yet adequately perceived. Further-more, the security risk involved in computerisation is
directly related to the size of the network. For PSBs, the major problems are in the form of security risks, network downtime, scarcity of trained personnel, expensive system upgrades and recurring costs given the massive scale of their current operations.

Third, confidentiality, integrity and authentication are very important features of the banking sector and were very successfully managed the world over in pre-internet times. Communication across an open and thus insecure channel such as the internet might not be the best base for bank-client relations as trust might partially be lost [Grethen 2001]. Though at different levels in the computerisation spectrum, both public and private banks in India have realised the importance of Public Key Infrastructure (PKI) solutions. PKI is expected to guarantee the required level of trust and to provide for the security needs of all e-communities in terms of confidentiality, integrity, non-repudiation services, etc. However, the size of the initiative is going to vary significantly between public and private banks. For private banks, security considerations are an important value-added and risk reduction utility for their online and real time transactions. But for public sector banks, computerisation is the first agenda – a massive exercise given their very large branch networks and security is the second priority. But this endangers the position of public sector banks in the immediate period as breaches of security and disruptions in the system’s availability can damage a bank’s reputation. The more a bank relies on electronic delivery channels, the greater the potential for reputational risks.

Fourth, e-banking has created many new challenges for bank management and regulatory and supervisory authorities. They originate not just from increased potential for cross-border transactions but also for domestic transactions based on technology applications
which raise many security related issues [Hawkins 2002]. The Basel Committee on Banking Supervision’s Electronic Banking Group (EBG) (2001) has defined risk management principles for electronic banking. They primarily focus on how to extend, adapt, and tailor the existing risk-management framework to the electronic banking setting. It is necessary to know whether the efforts undertaken by the RBI are sufficient to ensure a reasonable level of security.

Fifth, there are some serious implications of international e-banking. It is a common argument that low transaction costs potentially make it much easier to conduct cross-border banking electronically. For many banks, cross-border operations offer an opportunity to reap economies of scale. But cross-border finance also needs a higher degree of cross-border supervision. Such cooperation may need to extend to similar supervisory rules and disclosure requirements (for efficiency and to avoid regulatory arbitrage) and some harmonising of legal, accounting and taxation arrangements. The real question here is whether India at the present juncture is adequately prepared to face the consequences of cross border e-banking?

1.4 ADVANTAGES OF E-BANKING

The main advantages of E-banking are:-

- The operating cost per unit services is lower for the banks.
- It offers convenience to customers as they are not required to go to the bank's premises.
- There is very low incidence of errors.
- The customer can obtain funds at any time from ATM machines.
• The credit cards and debit cards enables the Customers to obtain discounts from retail outlets.
• The customer can easily transfer the funds from one place to another place electronically

1.5 CONSUMER ACCEPTANCE OF E-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. Research on consumer attitude and adoption of E-banking (EB) 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. The adoption of EB forces consumers to consider concerns about password integrity, privacy, data encryption, hacking, and the protection of personal information. E-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). Consumers who use EB use it on an ongoing basis and need to acquire a certain comfort level with the technology to keep using it. In the study by, 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 (PU), security and privacy are the main perusing factors to accept online banking system. According to study conducted by Perceived Usefulness (PU), Perceived Ease of Use (PEU), perceived credibility and computer self-efficacy are the factors affecting adoption of EB. Technology Acceptance Model (TAM) provides a conceptual framework for this study. In the technology context of use, the frequency of use and duration of experience with the technology have been found to capture the customer’s use of technology. In this study consumer attitude or intention to use is evaluated by PU, PEU, PR (Perceived Risk) and usage pattern by frequency and duration of EB use.

1.5.1 Perceived Usefulness (PU)

Perceived usefulness is one of the components of Technology Acceptance Model (TAM), which has been widely used by information system researchers. According to “PU is the extent to which a person believes that using a particular system will enhance his or her performance” defined PU as the extent to which a person deems a particular system to boost his or her job performance. The importance of PU has been widely recognized in the field of electronic banking. It is the primary prerequisite for mass market technology acceptance, which depends on consumer’s expectations about how technology can improve and simplify their lives. Empirical studies on TAM have suggested that PU has a positive effect on the adoption of information technology.

1.5.2 Perceived Ease of Use (PEU)

According to perceived ease of use is the extent to which a person believes that using a particular system will be free of effort. It is a critical factor in the development and delivery
of EB services. Perceived ease-of-use is a person's subjective perception of the effortlessness of a computer system, which affects the PU thus having an indirect effect on a user's technology acceptance. Also, the longer an individual has been using EB the more likely they are to find it easy to use. The easier it is for a user to interact with a system, the more likely he or she will find it useful. There is substantial empirical support for this view. It affects the consumer’s intentions to use EB found that PEU was not positively correlated with online banking use. This indicated that PEU does not statistically significantly affect the use of online banking. In contrast, found that PEU had a significant positive effect on behavioral intention. This finding refers to the fact that users who have a higher computer self-efficacy are likely to have more positive PEU.

1.5.3 Perceived Risk (PR)

The distant and impersonal nature of the online environment and the implicit uncertainty of using a global open infrastructure for transactions have rendered risk an inevitable element of e-commerce. The main components of PR are perceived security and trust, which have emerged as the top issues inhibiting EB adoption. This construct reflects an individual’s subjective belief about the possible negative consequences of some type of planned action, due to inherent uncertainty which is likely to negatively influence usage intentions. Trust is at the heart of all kinds of relationships. Recent research indicates that trust has a critical influence on user’s willingness to engage in online exchanges of money and sensitive personal information. Trust refers to an expectation that others will not behave opportunistically. Consumer’s perceived trust in online payment system is defined as consumer’s belief that e-payment transactions will be processed in accordance with their expectations. It is defined in terms of the individual’s perception of: the security of the system; the service provider’s reputation; loss of privacy; and concerns about risks.
associated with the reliability of EB. Trust can be defined as a user’s confident belief in a bank’s honesty toward the user. Consumer’s trust in their online transactions is important and has been identified as a key to the development of the system. Customer’s trust is a function of degree of risk involved in the situation where there is a physical separation between the bank and the customer, circumstances are difficult to predict, and the relationships are difficult to monitor. There are still customers who fear to make use of EB, as they are concerned with security aspects of such a system. Previous research has found the risk associated with possible losses from the online banking transaction is greater than in traditional environments. Many studies showed PR as an important factor that influences online banking adoption; which is negatively related.

OBJECTIVES OF THE STUDY

The present study aims to examine the progress of E-banking in India. In this broader framework, an attempt is made to achieve the following specific objectives:

- To analyze the present E-banking scenario concerned with ATM, Internet banking, Mobile banking and Credit cards in India.

- To study the customer acceptance of E-banking in India

- To study the effectiveness of customer acceptance of E-banking in India

- To study the accessibility of customer acceptance of E-banking in India

- To study the impact of threat of customer acceptance of E-banking in India
RESEARCH MODEL AND HYPOTHESES

Perceived Usefulness (PU) and Perceived Ease of Use (PEU) is significant factors affecting acceptance of an information system or new technologies and previous research has empirically found positive relationship between PEU and PU as critical factors on the use of e-banking. Hence an application perceived to be useful perceived to be easier to use than another is more likely to be accepted by users. Services are inherently more risky than products and the major reason for this is the higher levels of uncertainty which are associated with services also found that Perceived Risk (PR) was one of the major factors affecting consumer adoption, as well as customer satisfaction of E-banking (EB) services. PR usually arises from uncertainty. By applying these into E-banking (EB) context we hypothesize:

H: 1 Effectiveness (Perceived usefulness) has a positive effect on use of EB.

H: 2 Accessibility (Perceived ease of use) has a positive effect on use of EB

H: 3 Threat (Perceived risks) have a negative impact on use of EB.

2. 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 E-banking (EB).
2.1 SAMPLING

Respondents for this study are the Public undertaking And Private Sector Banks account holders. Convenience sampling method was used. The reasons of using this sampling type are dual. First, it saves times and costs since the respondents can be randomly selected. Second, it offers an easy way to obtain the raw data for the further analysis. 150 survey questionnaires were distributed among the participants, 135 questionnaires were filled and returned, and 125 fully filled questionnaires were taken for the final analysis. Thus the effective response rate of survey is 83.34%. After discarding incomplete and indistinct responses 125 responses were taken for final analysis.

DATA COLLECTION

Data collected from two sources:-

Primary Data

- Primary Data has been collected from Public undertaking And Private Sector Banks Customers as well as bank managers from the area of Bhubaneswar (Odisha) region by administering the questionnaire and personal interview.

Secondary Data

- Journals, Books, Magazines, Electronic Data

ANALYSIS

Each questionnaire item was scored on a five-point Likert scale 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Likert (1932) developed the principle of
measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, and so tapping into the cognitive and affective components of attitudes. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions. These ordinal scales measure levels of agreement/disagreement.

Table 1

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Effectiveness (PU) has a positive effect on use of E-Banking (EB)</td>
<td>15 (12 %)</td>
<td>23 (18 %)</td>
<td>20 (16 %)</td>
<td>25 (20 %)</td>
<td>42 (34 %)</td>
<td>3.46</td>
</tr>
<tr>
<td>2</td>
<td>Accessibility (PEU) has a positive effect on use of EB</td>
<td>23 (18 %)</td>
<td>22 (18 %)</td>
<td>18 (14 %)</td>
<td>26 (21 %)</td>
<td>36 (29 %)</td>
<td>3.26</td>
</tr>
<tr>
<td>3</td>
<td>Threat (PR) have a negative impact on use of EB</td>
<td>14 (11 %)</td>
<td>20 (16 %)</td>
<td>19 (15 %)</td>
<td>32 (26 %)</td>
<td>40 (32 %)</td>
<td>3.51</td>
</tr>
</tbody>
</table>

Total Respondents 125
In sum, PU and PEU clearly have a positive effect on the use of online banking and PR has negative effect. Based on our data analysis H1, H2 and H3 were supported statistically.

Statistical Package for Social Sciences (SPSS) version 12 was also used as the analysis tool. The demographic profile of the respondents is shown in table 2 and table 3.

Demographic Profile of the Respondents

Table 2: Electronic banking delivery channel users and non-users

<table>
<thead>
<tr>
<th>Electronic Banking Delivery Channel</th>
<th>Frequency (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Users</td>
</tr>
<tr>
<td>ATM</td>
<td>125 (100 %)</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>85 (68 %)</td>
</tr>
<tr>
<td>Tele Banking</td>
<td>41 (32.8 %)</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>34 (27.2 %)</td>
</tr>
</tbody>
</table>
Out of the respondents 100% were using ATMs, 68% were using internet banking services, 32.8% were using tele banking services and 27.2% were using mobile banking services.

### Table 3: Profile of Respondents

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Items</th>
<th>Number of Respondents</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>80</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>45</td>
<td>36</td>
</tr>
<tr>
<td>Age Group</td>
<td>21-24</td>
<td>70</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>24-27</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>27-30</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>05</td>
<td>04</td>
</tr>
<tr>
<td>Education</td>
<td>Post Graduate</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Fellow Program</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>05</td>
<td>04</td>
</tr>
</tbody>
</table>

The above table describes the demographic profile of the respondents which consists of gender, age group and education. We found that out of the respondents 64% male were using e-banking services, 56% in the age group of 21-24 were e-banking user and 80% Post Graduate students were using highest electronic banking services.
FINDINGS

This study examines the influence of Effectiveness (PU), Accessibility (PEU) and Threat (PR) of E-banking (EB). As expected, the results have supported the hypothesis that effectiveness and accessibility have positive effect on the use of electronic banking and threat has negative effect on the use of electronic banking. The results of the analysis conducted on the factors indicated that PR, PU & PEU on E-banking were found to be the most influential factors explaining the use of electronic banking services. The result shows that PR is negatively related to the acceptance of E-banking (EB) use which supports the hypothesis.

Graph 1
In this graph **Series 1** represents effectiveness (has a positive effect on use of electronic banking), **Series 2** represents accessibility (has a positive effect on the use of electronic banking) and **Series 3** represents threat (have a negative impact on use of electronic banking). It shows that customers feel that E-banking is an essential part of their routine work because it is a useful tool to save time and free from hassle. 35% and 25% of the customers are strongly agreed that effectiveness and accessibility is the most influential factor which attracts the customer for using E-banking services in India.

The finding also depicts many factors like security and privacy and awareness level increased the acceptance of E-banking services among Indian customers. The finding show that if banks provide them necessary guidance and ensure safety of their accounts, customers are willing to adopt E-banking. In addition, this study suggests that online banking companies could develop trust-building mechanisms to attract customers, such as statements of guarantee, increased familiarity through advertising, and long-term customer service. The proposed model makes an important contribution to the emerging literature on ecommerce, especially with regard to electronic banking.

**RECOMMENDATIONS**

In order to ensure a successful practice of e-banking in India, we recommend the followings:-

- E-banking systems should be simple to use, fast and user friendly.
• E-banking services should be standardized so that wherever the solution is used the customer is familiar with the procedure followed. Government should compel the banking sectors to automate their operation and going online by a specific period.

• Provide adequate training and technological support to develop the manpower.

• Appropriate legal framework.

• Proper infrastructure development.

• Government should implement the cyber laws to ensure proper security about customers information (i.e. Credit card number).

• Government should establish proper educational institution to create efficient IT professionals to support e-banking in India.

• Developing of integrated e-banking software.

• Government, in collaboration with the banks, should educate and inform its citizens and customers on the workability and effectiveness of E-banking. This will increase the confidence level of customers.

• The clearing house operation in India should be fully automated system.

• Banks should have adequate research and technological background in this regard.
• Bank can charge normal profit to enlarge the market size on the electronic banking products.

• Political commitment to improve governance and institutional strength is essential for successful application of e-banking.

• As e-bank users mostly use ATMs and POS in most cases, the banks should emphasize on providing uninterruptible service.

CONCLUSION

The e-banking revolution has fundamentally changed the business of banking by scaling borders and bringing about new opportunities. In India also, it has strongly impacted the strategic business considerations for banks (including the PSBs) by significantly cutting down costs of delivery and transactions. In this paper, we have identified some such impediments in the Indian context and have suggested ways to overcome them in order to move forward with the wave of e-banking successfully. As 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. This 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. By using a longitudinal study in the future, we could investigate our research model in different time periods and make comparisons, thus providing more insight into the phenomenon of e-banking adoption. The banks have to encourage the existing users of internet banking, tele banking and mobile banking to use these services more frequently, as the study showed that the majority of the users are not even using these services at least once a week. The banks could encourage customers to use these services more frequently through rewarding customers for conducting transactions through these electronic channels with incentives such as reduced service charges.

REFERENCES


