Chapter - II

CONCEPTS AND REVIEW OF LITERATURE
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The following information is dealt-in with the related survey of the literatures in connection with the present study along with the concepts used in the study. The literature survey is the basis of the present analysis that forms the platform for the execution of the study. In this regard, the researcher has collected several work results of previous studies of the researchers and the concepts in connection with the online banking transactions. The reviews are presented significantly in an order of the services that are considered for analysis with the conceptual background.

ONLINE BANKING SERVICES

Online banking is an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website operated by the institution, such as a retail bank, virtual bank, credit union or building society. Online banking is also referred as Internet banking, e-banking, virtual banking and by other terms. The following are the reviews of related literature regarding the On-line banking or internet banking services:

Annavarjula and Beldona 2000, 5 internal organizational elements like innovative culture, technology readiness for corporate client’s employees, and top management support for business were used to explore the relationship subsequently for solving problems pertained to resources limitation within SMEs. Eventually, few

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empirical studies had examined the influence of internationalization and corporate e-banking on firm performance.

**Agarwal, N. Agarwal, R., Sharma, P. and Sherry, A. M. (2003)** explored the role of e-banking in e-democracy. With the development of asynchronous technologies and secured electronic transaction technologies, more banks and departments were using Internet for transactional and information medium. Initiatives such as E-SEVA and FSC’s are the milestones towards achieving comprehensive e-governance.

**Avinandan Mukherjee, Prithwiraj Nath, (2003)** the role of trust encompasses the exchanges and interactions of a retail bank with its customers on various dimensions of online banking. Specifically lays stress on the bank-to-customer exchanges taking place through the technological interface. Hypothesizes share value, communication and opportunistic behaviour as antecedents to trust. Trust and commitment also have a causal relationship. It was observed that shared value is most critical to developing trust as well as relationship commitment. Communication has a moderate influence on trust, while opportunistic behavior has significant negative effect. Also finds higher perceived trust to enhance significantly customers’ commitment in online banking transaction. An important contribution concerns how trust is developed and sustained over different levels of customer relationship in online banking. The future commitment of the customers to online banking depends on perceived trust.

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Akhil Sahai, Vijay Machiraju, (2001)\(^4\) the World Wide Web has unleashed people’s imagination and a plethora of new technologies have emerged. Since these technologies have sprung up to address different requirement, it has become imperative to understand how these different technologies fit together. This paper presents the state of the art of these different technologies and tries to present a coherent vision of their inter-operation. In the current scenario Indian customers are moving towards internet banking, slowly but steadily. Most of the big Indian banks like SBI, BOB and BOI etc., have stated providing internet banking services.

In contrast to traditional banking, internet banking involves non-human interactions between customers and online bank information system.

Customer satisfaction, customer retention and new customer acquisition are the key factors in i-banking system. This becomes more important since the acquisition costs in online banking exceed that of traditional offline business by 20%-40% (Reibstein, 2002)\(^5\).

Ebling, (2001)\(^6\) this paper describes an empirical study of investigating recent trend and development of the application of e-banking (banking though internet) in a typical developing country – Bangladesh, and its economic impact on local financial institutions. Currently, Bangladesh is far behind in terms of e-banking development and applications. More specifically, while it is a fact that currently many banks in Bangladesh have implemented e-banking services, however, comparing with most

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developed countries, the e-banking application in Bangladesh is only in its infancy stage and there is a huge gap to be fulfilled with new research and development effort. As such, addressing the current issues and challenges in the development of e-banking in Bangladesh is the primary motivation of this research. In addition, customer’s transaction and communication abilities have been improved by the developments of information technology. Information technology enabled electronic channels to perform many banking functions that would traditionally be carried out over the counter.

**Furst, K; Lang, W., William and Nolle, E., Daniel (2000)** presented data on the number of national banks in U.S. offering Internet banking and the products and services being offered. Only 20 percent of national banks offered Internet banking in the third quarter of 1999. However, as a group, these “Internet banks” accounted for almost 90 percent of national banking. Banks in all size system of assets and 84 percent of small deposit accounts categories offering Internet banking tend to rely less on interest-yielding activities and core deposits than do non-Internet banks. Also, Institutions with Internet banking outperformed non-Internet banks in terms of profitability.

**Jayawardhena & Foley, 2000,** contends that e-banking is providing numerous good opportunities for banks and non-bank financial institutions to add a low cost distribution channel to their existent distribution channels in order to better serve their customers by offering various products and services with high quality.

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However, he further contends that e-banking also brings about challenges to traditional banks due to the fact that it neutralizes competitive advantages rooted in a traditional banking network. It is predicted that e-banking continues mushrooming in the times to come. When e-banking is widely utilized and becomes more popular, it is very interesting to forecast the future of traditional banks operating based on their branches.

**Nour-Mohammad Yaghoubi and Ebrahim Bahmani 2010** Online banking has emerged as one of the most profitable e-commerce applications over the last decade. This study investigates which factors affect the adoption of online banking in Isfahan Province of Iran. The results indicated that the intention to use online banking is positively affected mainly by perceived behavioral control and perceived usefulness.

**Shetty, V.P. (2000)** technology is dramatically altering the ways in which financial services are delivered to consumers and continue to do so in future too. Electronic banking or the use of computers and electronic technology as a substitute for traditional paper based transactions, is here to stay.

**Tan and Teo (2000)** suggest that banks that fail to respond to Internet banking are likely to lose customers and that the cost of offering Internet banking services is often less than the cost of keeping branch banking.

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Unnithan and Swatman (2001)\textsuperscript{12} studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking by focusing on two economies, Australia and India. The study found that Australia is a country with internet-ready infrastructure as far as Tele communication, secure protocols, PC penetration and consumers’ literacy are concerned. India, by comparison, is overwhelmed by weak infrastructure, low PC penetration, developing security protocols and consumer reluctance in rural sector. Although many major banks have started offering i-banking services, the slow pace will continue until the critical mass is achieved for PC, internet connections and telephones. However, the upsurge of IT professionals with growing demands is pressuring the government and bureaucracy in the country to support and develop new initiatives for a faster spread of i-banking.

Zeithaml (2000)\textsuperscript{13} contends that despite no direct interaction between the customer and service provider, each service element provided in the electronic environment represents an opportunity for the organization to reinforce its level of quality to customers.

**ATM CARD SERVICES**

An ATM card (also known as a bank card, client card, key card, or cash card) is any payment card issued by a financial institution to its customers which enables a customer to access an automated teller machine (ATM) for transactions such as deposits, cash withdrawals, obtaining account information, and other types of


banking transactions. The payment card may be any card which has that feature enabled, and may be a debit, credit, a limited-use ATM or other card. Interbank networks allow the use of ATM cards at ATMs of financial institutions other than those of the issuing institution.

ATM cards can also be used on improvised ATMs, such as merchants’ card terminals that deliver ATM features without any cash drawer (commonly referred to as mini ATMs). These terminals can also be used as Cashless scrip ATMs by cashing the fund transfer receipt at the merchant’s Cashier. The first ATM cards were issued by Barclays in London, in 1967, and by Chemical Bank in Long Island, New York, in 1969. The following are the reviews of related literature in connection with the ATM Services:

Adelowo Solomon Adepoju Mohammed Enagi Alhassan (2010) over time, consumers have come to depend on and trust the Automatic Teller Machine (ATM) to conveniently meet their banking needs. But in recent times there have been a proliferation of ATM frauds in the country even and across the globe. Managing the risk associated with ATM fraud as well as diminishing its impact is an important issue that face financial institutions as fraud techniques have become more advanced with increased occurrences. The ATM is only one of many Electronic Funds Transfer (EFT) devices that are vulnerable to fraud attacks. This paper carried out an empirical research to analyze the cases of ATM usage and fraud occurrences within some banks in Minna. The research identifies the common ATM fraud, how, where and when these frauds are perpetuated and then proffer security recommendation that should be

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adhered to by both the banks as financial institutions and the ATM users in order to eliminate or reduce it to the barest minimum.

**Akinyele S.T. and K.Olorunleke (2010)** technology based self service has greatly changed the way that service firms and customers interact and are raising a host of research and practice issues relating to the delivery of e-service which has become increasingly important not only in determining the success or failure of electronic commerce but also in providing customers with superior experience with respect to the interactive flow of information. The purpose of the research study was to establish the relationship between technology and service quality in the banking industry in Nigeria. The finding has revealed that secure services as the most important dimension, followed by convenient location of ATM, efficiency.

**Burrett (2008)** states online marketing is about “carefully targeting users and getting them to interact with you while they’re engaged with the most personal, intimate medium ever invented”. Unlike a traditional media audience, internet users have control of their medium. They decide where they want to navigate, what they want to do and which links they want to click.

**Cynthia (2000)** states that the 24 hours access to the ATM machine is a double edge sword it has both advantage and disadvantage. It is easy to deduce that ATM fraud is carried out most in the day time. Also there are occurrences at night but most ATM users prefer to make withdraw during the day thus preventing incidences

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of robbery at night. On the present level of security provide by banks as regards to ATM. The responses from the tables denote that the security level is poor. Some banks do not provide any means where customers can easily report cases of ATM fraud. ATM manuals or FACTA (Fair and Accurate Credits Transactions Act) is a pertinent document that should be given to ATM users as they are been issued with ATM but from the study this is absolutely neglected.

David H. Wong, Nexhmi Rexha, Ian Phau, (2008)\textsuperscript{18} aim to re-examine the role of traditional service quality in an e-banking environment by providing a review of how traditional service quality perceptions have evolved through the current and continuing stream of change in banking technology and the corresponding changes in the nature of how banks interact with their customers.

Divya Singhal and V. Padhmanabhan (2008)\textsuperscript{19} Internet banking is becoming increasingly becoming popular because of convenience and flexibility. The present paper explores the major factors responsible for internet banking based on respondents’ perception on various internet applications. It also provides a framework of the factors which are taken to assess the internet banking perception.

Geetika, Nandan, T & Upadhyay, AK (2008)\textsuperscript{20} A study on the Internet users, conducted by Internet and Mobile Association of India (IAMAI), found that about 23% of the online users prefer IB as the banking channel in India, second to

ATM which is preferred by 53%. Out of the 6,365 Internet users sampled, 35% use online banking channels in India. This shows that a significant number of online users do not use IB, and hence there is a need to understand the reasons for not using it.

**Donell (2003)** view electronic banking as banking services that consumers can access, by using Network system or an Internet connection to a bank’s computer center, in order to perform banking tasks, receive and pay bills, and so forth. Many other financial services can be accessed via the Internet. To most people, electronic banking means 24-hour access to cash through an ATM or paychecks deposited directly into checking or savings accounts.

**Hanudin Amin Ricardo Baba Mohd Zulkifli Muhammad (2005)** Today, the advancement of mobile technologies has provided an opportunity for financial innovations introduced by financial providers is mobile banking. This study adopts a technology acceptance model (TAM) to investigate factors that providers in introducing new financial innovations. One of the emerging financial determines an individual’s intention to use mobile banking among bank customers in Labuan and Kota Kinabalu. The TAM includes perceived credibility, perceived self-efficacy and normative pressure. Our results support the extended TAM in predicting bank customers’ behavioral intention to use mobile banking. Determinants are perceived usefulness, perceived ease of use, perceived credibility and perceived self-efficacy. Normative pressure was found to be a weak determinant in explaining bank customers’ intention to use mobile banking. The study also demonstrates the

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22 Hanudin Amin Ricardo Baba Mohd Zulkifli Muhammad An analysis of mobile banking acceptance by Malaysian customers International journal of service industry management, 2005,16(5)416-435
significant effect of perceived ease of use on behavioral intention through perceived usefulness.

Shastri (2001)\textsuperscript{23} analyzed the effect and challenges of new technology for banks. Technology has brought a sea change in the functioning of banks. The earlier manual system of preparation of vouchers is slowly being automated thereby saving a lot of time and effort. The use of automated teller machines (ATMs) and introduction of IT are more than in the past.

Sourabh Sharma & K S Thakur, (2010)\textsuperscript{24} this paper is a survey of public and private sector bank customers' responses toward computerization of banking services. The objective of this paper is to measure the customers' awareness, perception, and the level of satisfaction with regard to Virtual Banking Services offered by the Indian public and private sector banks in the city of Jaipur. This survey declares that in comparison, private sector bank customers are satisfied with regard to ATM, I-Banking and IVRS services. However, the study also reveals that public sector banks are preparing to take on private sector banks in this regard.

Sven C. Berger, (2009)\textsuperscript{25} "This article aims to explain the adoption of self-service technology with pro-active sales applications (automated teller machines or kiosk systems) in brick-and-mortar outlets with special respect to personality traits,

\textsuperscript{24} Sourabh Sharma & K S Thakur, A Comparative Study of Customer Satisfaction from Virtual Banking in Public and Private Sector Banks April-june 2010, vol.xxxi, no 1, Vinimaya archives.
relationship characteristics and previous online banking usage. The study validates the framework and identifies relevant moderating effects.

Thamaraiselvan Natarajan, Senthil Arasu Bala-subramanian, Sivagnanasundaram Manickavasagam (2010) in the retail banking context, convergence of technologies has given birth to different channels of distribution like Automatic Teller machines (ATM), internet banking, and mobile banking. This enables the customer to avail the banking services at anytime and anywhere. These technological interfaces are known as self service technologies (SSTs). Customers availing banking services through these SSTs get more benefits in terms of time, cost and energy. Despite these benefits the customer trial, adoption and repeat usage of SSTs vary among banking customers. Although the kinds of service one can avail from these SST are similar, the patronage among the SSTs differs. The SST channel choice could be attributed to various factors viz., Nature of service to be availed or purpose, Perceived risk, Requirements and Benefits. When it comes to predicting customer priority among alternatives, Analytical hierarchy process (AHP) has been proved as an effective technique. This paper explores the factors influencing customer choice of SSTs by employing AHP technique.

Wise and Ali (2009) argued that many banks in Bangladesh want to invest in ATMs to reduce branch cost since customers prefer to use them instead of a branch to transact business. The financial impact of ATMs is a marginal increase in fee

income substantially offset by the cost of significant increases in the number of customer transactions. The value proposition however, is a significant increase in the intangible item customer satisfaction. The increase translates into improved customer loyalty that in result in higher customer retention and growing organization value. Internet banking is a lower-cost delivery channel and a way to increase sales. Internet banking services lies in the increased retention of highly valued customer segments. This paper describes a case study about the major issues and challenges in the development of the electronic banking (e-banking) industry of a relatively underdeveloped nation. This research shows that even in many less developed nations; the application of e-banking can help their local banks reduce operating costs and provide a better and fast service to their customers. The research objectives are to investigate the current trends and developments in e-banking and provide managerial insights for the banking industry in those underdeveloped nations. The collected data are examined through statistical analysis tools. Managerial implications are discussed with suggestions for future research.

Technology has become the engine for triggering rapid change. It is no longer considered merely for transaction processing or confined to management information systems. It implies the integration of information system with the communication technology and of innovative application to product manufacturing, design and control. With the development of technology, the world has become a global village and ushered in a revolution in the banking industry. R.C. Dangwal, Kailash Sakalani and Swate Anand, (2010).28

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TELEBANKING SERVICES

Tele banking is the process of handling bank accounts over the phone. It is also referred to as telephone banking. This service is commonly offered by banks, credit unions and credit card companies. There are often fees associated with using this service.

Using a telephone to check a bank account balance, transfer money or review account history is considered to be safe and convenient by some patrons. The provision of Tele banking allows customers to carry out all of these transactions without accessing a mobile application, finding a computer or visiting a branch location. Telephone banking therefore appeals to people who want immediate, spoken feedback on their bank accounts and who are concerned about the security associated with other remote banking options.

Telephone banking makes customer service and bank account information available to a patron 24 hours a day, 7 days a week with no interruptions due to holidays or weekends. This is a useful asset when traveling overseas or working hours that make traditional banking access difficult. This service often has nominal fees attached to it, especially as more financial institutions move toward self-service solutions that include mobile applications, paperless account maintenance and online banking opportunities. Fees and service options related to Tele banking vary from one financial institution to the next and are not regulated by the FDIC.

Telephone banking is a service provided by a bank or other financial institution, that enables customers to perform financial transactions over the
telephone, without the need to visit a bank branch or automated teller machine. Telephone banking times can be longer than branch opening times, and some financial institutions offer the service on a 24 hour basis. From the bank's point of view, telephone banking reduces the cost of handling transactions by reducing the need for customers to visit a bank branch for non-cash withdrawal and deposit transactions.

To use a financial institution's telephone banking facility, a customer must first register with the institution for the service, and set up some password (under various names) for customer verification.

To access telephone banking, the customer would call the special phone number set up by the financial institution. The service can be provided using an automated system, using speech recognition and DTMF technology or by live customer service representatives.

The types of financial transactions which a customer may transact through telephone banking include obtaining account balances and list of latest transactions, electronic bill payments, and funds transfers between a customer's or another's accounts. Cash withdrawals and deposits require the customer to visit an automated teller machine or bank branch. The following are the main reviews related to the Tele-banking and telephone banking services of the modern banks:

Anne J. Broderick, Supattra Vachirapornpuk, (2002)\textsuperscript{29} one of the key challenges of the Internet as a service delivery channel is how service firms can

\textsuperscript{29} Anne J. Broderick, Supattra Vachirapornpuk, (2002) "Service quality in Internet banking: the importance of customer role", Marketing Intelligence & Planning, Vol. 20 Iss: 6, pp.327 – 335
manage service quality as these remote formats bring significant change in customer interaction and behavior. Drawing on theoretical frameworks of service quality and adapting these to particularly reflect the remote delivery format of the Internet, this study proposes and tests a service quality model of Internet banking. The research uses participant observation and narrative analysis of a UK Internet banking in particular the Tele banking activities, Web site community to explore how Internet and Tele banking customers perceive and interpret the elements of the model. Findings show that the level and nature of customer participation had the greatest impact on the quality of the service experience and issues such as customers’ zone of tolerance regarding the Tele-banking activities.

Tele banking (TB) is a radical technological innovation with potential to change the structure and nature of banking. To sustain business competitiveness, more and more banks are transforming from their traditional approach of “bricks and mortar” into a “clicks and mortar” one under the recent emergence of electronic commerce and business. Chau, P & Lai.V, (2003)  

Damien Hutchinson, Matthew Warren, (2003) in their article stated that as a continually growing financial service of electronic commerce, Telephone banking requires the development and implementation of a sound security procedure. This involves designing effective methods via which users can be authenticated in a remote environment. Specifically for Telephone banking there is a real need for a way uniquely to identify and authenticate users without the possibility of their authenticity

being cloned. Some technologies in use have been presented for meeting the security requirements for national, regional and global Telephone banking assurance. Concentrates on presenting a security framework for Telephone banking based on discovering and defining these pathways in terms of adequate authentication mechanisms. They propose a framework concerning how to identify security requirements for Internet banking such that the transactions being conducted are secured within their respective environments.

**Pooja Malhotra, Balwinder Singh, (2010)**[^32], This exploratory study is an attempt to present the present status of telephone banking in India and the extent of telephone banking services offered by the banks. In addition, it seeks to examine the factors affecting the extent of telephone banking services. The purpose of the study is to help fill significant gaps in knowledge about the telephone banking landscape in India. This paper contributes to the empirical literature on diffusion of financial innovations, particularly telephone banking, in a developing country, i.e., India.

**MOBILE BANKING SERVICES**

**Mobile banking** is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or tablet.

Mobile banking differs from mobile payments, which involve the use of a mobile device to pay for goods or services either at the point of sale or

remotely, analogously to the use of a debit or credit card to effect an EFTPOS payment.

The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers.

Mobile banking has until recently (2010) most often been performed via SMS or the mobile web. Apple's initial success with iPhone and the rapid growth of phones based on Google's Android (operating system) have led to increasing use of special client programs, called apps, downloaded to the mobile device. With that said advancements in web technologies such as HTML5, CSS3 and JavaScript have seen more banks launching mobile web based services to complement native applications. A recent study (May 2012) by Mapa Research suggests that over a third of banks have mobile device detection upon visiting the banks' main website. A number of things can happen on mobile detection such as redirecting to an app store, redirection to a mobile banking specific website or providing a menu of mobile banking options for the user to choose from. The following are the main reviews of related previous studies in connection with the Mobile banking services of the today’s modern banking world:

**S. Anitha (2010)**

The endeavor of this paper is to throw more light on the study, methodology, modus operandi and its results banks have introduced a new lucrative technology called mobile banking which is using mobile phones as a

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33 S.Anitha, Mobile banking, February 2010, pg 32. Professional banker, the Icfai university press.
medium for extending banking services to target a large number of customers. With the advent of this new channel, it is possible to bank from anywhere at any-time and in any condition through either SMS or WAP by linking one’s bank account to a mobile phone.

Chellappa (2002) argue that not all but most transactions are conducted through Web browsers that connect to merchant sites. According to them, consumer perceptions of security are developed through visibly sufficient mechanisms that are carried out through the processes of encryption, protection, verification and authentication. The mechanisms of encryption, digital authentication, protection, and verification of on-line identity influence the Internet customers’ perception on information security and increase the likelihood of consumer confidence and trust. How that confidence is supported by the banks for the mobile banking activities and mobile transactions. This is a particular development from the banking traditions.

Hasan (2002) found that online mobile banking has emerged as a significant strategy for banks to attract customers. Almost 75 percent of the Italian banks have adopted some form of mobile banking during the period 1993-2000. It also found that the higher likelihood of adopting active mobile banking activities is by larger banks, banks with higher involvement in off-balance sheet activities, past performance and higher branching network.


Hernan E. Riquelme, Rosa E. Rios, (2010)\textsuperscript{36} this paper seeks to test the factors that can influence adoption of mobile banking among current users of internet banking in Singapore and gender as a moderating variable. Usefulness, social norms and social risk, in this order, are the factors that influence the intention to adopt mobile banking services the most. Ease of use has a stronger influence on female respondents than male, whereas relative advantage has a stronger effect on perception of usefulness on male respondents. Social norms (or the importance of others in the decision), also influence adoption more strongly among female respondents than male.

Jamie Anderson, (2010)\textsuperscript{37}, M-banking is one of the newest approaches to the provision of financial services through information communication technology (ICT), made possible by the widespread adoption of mobile phones even in low income countries. Emerging mobile banking (m-banking platforms) in developing markets enable two sided markets, bringing together mobile handset users with other mobile users and commercial partners. It is the argument of this paper that the emergence of m-banking platforms has the potential for spill-over effects, and that these spill-over effects will require regulatory authorities to develop appropriate policy responses.

Júlio Püschel, José Afonso Mazzon, José Mauro C. Hernandez, (2010)\textsuperscript{38} this paper's objective is to propose an integrated framework to investigate the adoption intention of mobile banking technology and to test it in the Brazilian context.

The framework offers an integrated view, taking into account more predictors than other studies on the adoption of innovations for non-users, the framework was able to explain approximately 69 percent of the dependent variable (intention to adopt mobile banking) variation, which is a figure higher than those obtained in previous studies. It was also observed that the predictors' influence over the criterion variable was different for each group of mobile banking users and non-users.

Koenig-Lewis, Adrian Palmer, Alexander Moll, (2010) this paper aims to investigate the barriers for adopting mobile banking services. The results of the study indicated that compatibility, perceived usefulness, and risk are significant indicators for the adoption of m-banking services. Compatibility not only had a strong direct effect but was also identified as an important antecedent for perceived ease of use, perceived usefulness and credibility. Trust and credibility are crucial in reducing the overall perceived risk of m-banking.

Lisa Wessels, Judy Drennan, (2010) aim to identify and test the key motivators and inhibitors for consumer acceptance of mobile phone banking (M-banking), particularly those that affect the consumer's attitude towards, and intention to use, this self-service banking technology. Perceived usefulness, perceived risk, cost and compatibility were found to affect consumer acceptance of M-banking. The results also support a mediation model, whereby attitude transfers the affects of the consumers' perceptions to their intention to use M-banking.

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Rao et al. (2003) provide a theoretical analysis of Internet banking in India and found that as compared to banks abroad, Indian banks offering online services particularly mobile banking services still have a long way to go. For online banking to reach a critical mass, there has to be sufficient number of users and the sufficient infrastructure in place. I.T. has introduced new business paradigms and is increasingly playing a significant role in improving the services in the banking industry through mobile banking activities.

Mobile banking (also known as M-Banking, m-banking, SMS Banking etc.) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking is a way for the customer to perform banking actions on his or her cell phone or other mobile device. It is a quite popular method of banking that fits in well with a busy, technologically oriented lifestyle. It might also be referred to as M-banking or SMS banking. The amount of banking you are able to do on your cell phone varies depending on the banking institution you use. Some banks offer only the option of text alerts, which are messages sent to your cell phone that alert you to activity on your account such as deposits, withdrawals, and ATM or credit card use. With the combination of two most recent technological advancements—internet and mobile phone, a new service (mobile data service) is thus enabled and the first such wireless internet commercial transaction is performed by the banking industry (Barnes and Corbitt, 2003).

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R.K.Uppal (2010) In present day banking, total automation of banking operations is an imperative need for all banks to attract more customers, provide efficient services, and survive in the emerging new competition, apart from the profit motive which is the primary objective of the business. In order to achieve these goals of business, various channels have been developed through technology. ‘Mobile Banking’ is one of the best alternative channels available to customers for quick, correct and efficient service at anytime and anywhere. The present paper is devoted to explore the extent of Mobile banking in Indian banking industry where cell phone users are increasing at unexpected rate. Time period taken for study is 2000 - 2001 to 2006 - 2007 because this period is the eye-witness of infant condition of IT and during the same period IT became mature. Simple statistical tools like average, standard deviation, co-efficient of variation are used to calculate the efficiency of various bank groups providing the service of M-banking. On the basis of analysis, the paper concludes that the private sector banks are on the top in providing the M-banking services to their customers and have high profitability as compared to other bank groups under study except foreign banks. The paper also highlights the benefits of M-banking to customers as well as to bankers and suggests some strategies with their possible solutions like to spread awareness regarding M-banking and to increase its area and scope to enhance M-banking services in India, particularly in rural and semi-urban areas.

DEBIT CARD SERVICES

A debit card (also known as a bank card or check card) is a plastic payment card that provides the cardholder electronic access to his or her bank account(s) at a financial institution. Some cards may bear a stored value with which a payment is made, while most relay a message to the cardholder's bank to withdraw funds from a payer's designated bank account. The card, where accepted, can be used instead of cash when making purchases. In some cases, the primary account number is assigned exclusively for use on the Internet and there is no physical card.

In many countries, the use of debit cards has become so widespread that their volume has overtaken or entirely replaced cheques and in some instances, cash transactions. The development of debit cards, unlike credit cards and charge cards, has generally been country specific resulting in a number of different systems around the world, which were often incompatible. Since the mid-2000s, a number of initiatives have allowed debit cards issued in one country to be used in other countries and allowed their use for internet and phone purchases.

Unlike credit and charge cards, payments using a debit card are immediately transferred from the cardholder's designated bank account, instead of them paying the money back at a later date.

Debit cards usually also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash. Merchants may also offer cash back facilities to customers, where a customer can withdraw cash along with their purchase.
B. Janki (2002) analyzed that how technology is affecting the employees’ productivity through debit cards. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management etc. The study concludes that technology is the only tool to achieve their goals. Such technology is how supporting the Debit Card services of banks in the present day customer needs. How it is operated by the traditional employees with technological advancements is also studied.

Mohammed Sadique Khan and Siba Sankar Mahapatra, Sreekumar, (2009) this study aims at evaluating the service quality of internet banking (i-banking) services with reference to credit card services in India from customer’s perspective. A structured questionnaire containing 44 quality items is administered to various target groups. Seven quality dimensions, viz. reliability, accessibility, user friendliness, privacy/security, efficiency, responsiveness and fulfillment, are identified based on principal component factor analysis. Demographic analysis of data reveals that gender is hardly a bias for use and evaluation of service quality of i-banking in most of the cases across various categories of customers. A valid mathematical model is proposed to assess the overall service quality using regression analysis. The results show that customers are satisfied with quality of service on four dimensions such as reliability, accessibility, privacy/security, responsiveness and

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fulfillment, but least satisfied with the ‘user-friendliness’ dimension. The empirical findings not only prioritize different parameters but also provide guidelines to bankers to focus on the parameters on which they need to improve.

**Dr. Saroj Upadhyay, Deblina Ganguly (2009)** have said that in today’s competitive environment, the banks are making efforts to acquire new customers and also trying to retain the existing ones. With increased number of banks, products and services and with practically zero switching costs, customers are easily switching banks, if they are not satisfied with the services offered by their existing banks. Banks are finding it difficult to attract new customers, and more importantly retain existing customers. This article is aiming at bring in to light the advancement of debit card uses and the prospects for the cardholders.

**Sultan Singh, Ms. Komal, 2009** This paper presents the impact of Debit card on customer satisfaction. This is a comparative study of three major banks i.e. State Bank of India, ICICI bank and HDFC bank. This paper has been divided into two sections. First section presents the introduction of Debit card, brief history of three Banks compiled through the literature available in the field. It also includes the review of the various services provided by the three banks under study. Second section presents the result obtained on the basis of the data collected for the three banks.

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CREDIT CARD SERVICES

A credit card is a payment card issued to users as a system of payment. It allows the cardholder to pay for goods and services based on the holder's promise to pay for them. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user.

A credit card is different from a charge card: a charge card requires the balance to be paid in full each month. In contrast, credit cards allow the consumers a continuing balance of debt, subject to interest being charged. A credit card also differs from a cash card, which can be used like currency by the owner of the card. A credit card differs from a charge card also in that a credit card typically involves a third-party entity that pays the seller and is reimbursed by the buyer, whereas a charge card simply defers payment by the buyer until a later date.

The size of most credit cards is $3 \frac{3}{8} \times 2 \frac{1}{8}$ in ($85.60 \times 53.98$ mm), conforming to the ISO/IEC 7810 ID-1 standard. Credit cards have a printed or embossed bank card number complying with the ISO/IEC 7812 numbering standard. Both of these standards are maintained and further developed by ISO/IEC JTC 1/SC 17/WG 1. Before magnetic stripe readers came into widespread use, plastic credit cards issued by many department stores were produced on stock ("Princess" or "CR-50") slightly longer and narrower than 7810. The following are the literature reviews related to the credit card services of the modern banks studied by several researchers:
Malhotra, P & Singh, B, (2009)\footnote{Malhotra, P & Singh, B., “The Impact of Internet Banking and credit cards on Bank Performance and Risk: The Indian Experience,” Eurasian Journal of Business and Economics, vol. 2, no. 4, pp. 43-62, 2009.} the financial products and services have become available over the Internet and technology, which has thus become an important distribution channel for a number of banks. Banks boost technology investment spending strongly to address revenue, cost and competitiveness concerns. The purpose of present study is to analyze such effects of IB and its’ impact on the credit cards in India, where no rigorous attempts have been undertaken to understand this aspect of the banking business.

Ratnasingam (2002)\footnote{Ratnasingam Pauline (2002), “The Importance of Technology Trust in Web Services Security”, Information Management & Computer Security, 10 (5): 255-260.} argued that the impact of technology trust in Web services implies the use of security services such as digital signatures, encryption mechanisms, and authorization mechanisms. This paper relates to the condition of the consumers’ perceptions on security issues in E-banking and the particular usage of credit cards. The use of credit cards and the perception of the customers towards the credit cards are signified. Mainly consumers' perceptions are derived from the set of technologies that are customarily visible to them over the credit cards services.

Jalan, B. (2003)\footnote{Jalan, B. (2003), “Strengthening Indian Banking and Finance: Progress and Prospects”, IBA Bulletin, Vol. XXV, No. 3 (March), PP. 5-14.}, IT revolution has brought about a fundamental transformation in banking Perhaps no other sector has been affected by advances in technology as much as banking & finance. It has the most important factor for dealing with the intensifying competition & the rapid proliferation of financial innovations. For which the banks to concentrate on the issue and management of credit cards for

the customers. The credit card usage is also to be invited by the banks for the easy banking.

**K. Saikrishna (2009)** this article discusses the innovations in information technology being used in the Indian banking system. The advent of technology in banking has widened the scope for entry in the new markets and has helped the banks to develop innovative products, services and effective delivery channels. This article is also portraying the advanced use of credit cards for the financial transactions of the individual. Because, the use of this credit card is an innovative Information technology that is being used in Indian Banking System.

**GENERAL E-BANKING SERVICES**

The following are the reviews of related literatures in connection with the general e-banking services that are in connection with their impact, progress and prospects from the perception of the banking customers; they were searched in different dimensions and with different factors by the several researchers on different issues towards the e-banking activities:

**John Simpson (2002)**, this paper investigates the risk, efficiency and rate of progress in the implementation of electronic commerce (e-commerce) in a sample of banks from a developed country (the US), and a sample of banks from developing and emerging markets. The results confirm that the US is very advanced in its electronic-banking (e-banking) actuation. There is evidence suggesting that e-banking is driven

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51 K.Saikrishna Leveraging IT for better banking services by. Pg.44, professional banker, August 2009.
52 John Simpson The impact of the Internet in banking: observations and evidence from developed and emerging markets, Telematics and Informatics, vol.19, issue 4, November 2002, Pages 315-330
largely by the prospects of operating costs minimization and operating revenue maximization. Costs are lower and revenues higher when banking services are delivered through a branch network. The results also suggest that perceptions of banking risk may be partially driven by similar factors. Using a basic risk-scoring model, bank risk scores (reflecting a bank's ability to repay depositors) are regressed against operating efficiency measures.

**B.Janki (2002)**\(^{53}\) analyzed that how technology is affecting the employees’ productivity. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management etc. the study concludes that technology is the only tool to achieve their goals.

**Jørn Flohr Nielsen, (2002)**\(^{54}\) Internet banking is now such a well-established fact in the most developed countries that it is possible to map its actual role in customer relations. This paper traces important antecedents of Internet banking adoption and analyses its impact on relationship-marketing performance. Based on structural equation modeling, the findings offer some support for the view that the more advanced Internet applications adopted and the more attractive the Web site, the more the banks are able to keep profitable customers. However, the results question whether it pays to be a first-mover and organizational factors related to market

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orientation and customer-relationship management seem to have a much stronger impact on customer-related performance.

As Karjaluoto et al. (2002)\(^{55}\) argued that ‘banking is no longer bound to time and geography. Customers over the world have relatively easy access to their accounts, 24 hours per day, and seven days a week’. The author further argued that, with internet banking services, the customers who felt that branch banking took too much time and effort are now able to make transactions at the click of their fingers.

Liao and Cheung (2002)\(^{56}\) found that Singaporeans expectations regarding accuracy, security, transaction speed, user-friendliness, user involvement, and convenience were the most important quality attributes in the perceived usefulness of internet-based e-banking.

Laura Bradley, Kate Stewart, (2002)\(^{57}\) Although Internet banking is a growing phenomenon, the underlying factors driving and inhibiting its diffusion are not well understood. This paper presents empirical research that investigated the factors driving and inhibiting Internet banking. The main component of the research was a Delphi study of expert opinion. This paper gives a brief overview of the academic literature on the diffusion of innovation and Internet banking. The conduct and findings of the Delphi study are then reported. The paper concludes that Internet banking will become an extremely important distribution channel in the future, with the drivers overcoming the inhibitors in influencing the rate. Further to this, the paper

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indicates that the existing diffusion of innovation literature identifies some of the factors instrumental in the diffusion of Internet banking. However, this study identifies additional issues.

**Ratnasingam (2002)**[^58] argued that the impact of technology trust in Web services implies the use of security services such as digital signatures, encryption mechanisms, and authorization mechanisms. This paper relates to the condition of the consumers’ perceptions on security issues in E-banking. Mainly consumers’ perceptions are derived from the set of technologies that are customarily visible to them over the Web.

**Ramayah et al. (2002)**[^59] suggest that users will eventually lose interest in using Internet banking if they feel that it is not useful to use Internet banking even though the system is rather easy to handle.

**Sciglimpaglia, D.Ely, (2002)**[^60] many financial institutions are actively developing new electronic banking products for their retail customers. These efforts can succeed only if their managers focus the promotion of the new services toward those customers who are most likely to find them attractive. The analysis of a 6-branch financial institution presented in this study suggests that instructions are vulnerable to loss of customers to rivals with extensive online services. The likelihood of current customers being tempted to do business online with another institution was

shown to increase with the level of customer transaction use on the internet. Current
customer account relationships are found to be predictive of electronic services use in
general. And, interest in the use of specific online services is related to differing
customer relationships in addition to ordinary demographic and balance information.
These findings can be useful in identifying potential users from a customer
relationship management perspective.

**Zeithaml (2002)**⁶¹ argues that organizations should focus on all the encounters
that occur prior to, during and after internet transactions. He further argues that
organizations should focus on all the encounters that occur prior to, during and after
internet transactions. If organizations focus on developing efficient internet services,
it can become a prevailing factor to increase the overall service offerings It may
contribute to maintaining and enhancing the image and reputation of the firm which
will in turn lead to acquire the trust of customers.

**Rao et al. (2003)**⁶² provide a theoretical analysis of Internet banking in India
and found that as compared to banks abroad, Indian banks offering online services
still have a long way to go. For online banking to reach a critical mass, there has to be
sufficient number of users and the sufficient infrastructure in place. I.T. has
introduced new business paradigms and is increasingly playing a significant role in
improving the services in the banking industry

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Awamleh et.al. (2003) survey Jordanian banks and find limited evidence of web usage at the intermediate level while the basic level use is dominant. They also find the banks in Jordan are not fully utilizing concepts and applications of web banking.

Amy wong, Amrik Sohal (2003) examined in their study that the relationship between the dimensions of service quality and customer loyalty in a retail chain departmental store selling in Victoria, Australia. The results showed that service quality is positively associated with customer loyalty and that the most significant predictor of customer loyalty in the city retail district is empathy, while the most significant predictor of customer loyalty is the country retail district is tangibles.

Donell (2003) viewed electronic banking as banking services that consumers can access, by using network system or an Internet connection to a bank’s computer center, in order to perform banking tasks, receive and pay bills, and so forth. Many other financial services can be accessed via the Internet. To most people, electronic banking means 24-hour access to cash through an ATM or paychecks deposited directly into checking or savings accounts (Hillier, 2002).

Ziqi Liao and Michael Tow Cheung (2002) Consumer attitudes toward the usefulness of and willingness to use Internet e-retail banking were identified and

measured. Our survey was undertaken in Singapore, because its geography and well-developed infrastructure implied similar and small physical- and Tele-communication costs, thereby highlighting the differences between traditional and Internet-based retail banking upon the latter's introduction. The data showed that expectations of accuracy, security, network speed, user-friendliness, user involvement and convenience were the most important quality attributes underlying perceived usefulness. Regression discovered that willingness to use depended significantly on the first five factors, allowing the interdependencies or marginal rates of substitution between them to be estimated. Our results draw attention to demand-side changes in explaining the recent slowdown in Internet e-retail banking, and may also be useful for development planning and marketing.

Internet banking (IB) is a radical technological innovation with potential to change the structure and nature of banking. To sustain business competitiveness, more and more banks are transforming from their traditional approach of “bricks and mortar” into a “clicks and mortar” one under the recent emergence of electronic commerce and business. Chau, P & Lai, V, 200368.

Mobile banking (also known as M-Banking, m-banking, SMS Banking etc.) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking is a way for the customer to perform banking actions on his or her cell phone or other mobile device. It is a quite popular method of banking that fits in well with a busy, technologically oriented lifestyle. It might also be referred to as M-banking or SMS banking. The amount of

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banking you are able to do on your cell phone varies depending on the banking institution you use. Some banks offer only the option of text alerts, which are messages sent to your cell phone that alert you to activity on your account such as deposits, withdrawals, and ATM or credit card use. With the combination of two most recent technological advancements—internet and mobile phone, a new service (mobile data service) is thus enabled and the first such wireless internet commercial transaction is performed by the banking industry (Barnes and Corbitt, 2003)\(^\text{69}\).

Agarwal, N. Agarwal, R., Sharma, P. and Sherry, A. M. (2003)\(^\text{70}\) explored the role of e-banking in e-democracy. With the development of asynchronous technologies and secured electronic transaction technologies, more banks and departments were using Internet for transactional and information medium. Initiatives such as E-SEVA and FSC’s are the milestones towards achieving comprehensive e-governance.

Avinandan Mukherjee, Prithwiraj Nath,(2003),\(^\text{71}\) The role of trust encompasses the exchanges and interactions of a retail bank with its customers on various dimensions of online banking. Specifically lays stress on the bank-to-customer exchanges taking place through the technological interface. Hypothesizes share value, communication and opportunistic behaviour as antecedents to trust. Trust and commitment also have a causal relationship. It was observed that shared value is most critical to developing trust as well as relationship commitment. Communication

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has a moderate influence on trust, while opportunistic behaviour has significant negative effect. Also finds it highly perceived trust to enhance significantly customers’ commitment in online banking transaction. An important contribution concerns how trust is developed and sustained over different levels of customer relationship in online banking. The future commitment of the customers to online banking depends on perceived trust.

**Damien Hutchinson, Matthew Warren, (2003)** in their article stated that as a continually growing financial service of electronic commerce, Internet banking requires the development and implementation of a sound security procedure. This involves designing effective methods via which users can be authenticated in a remote environment. Specifically for Internet banking there is a real need for a way uniquely to identify and authenticate users without the possibility of their authenticity being cloned. Some technologies in use have been presented for meeting the security requirements for national, regional and global Internet banking assurance. Concentrates on presenting a security framework for Internet banking based on discovering and defining these pathways in terms of adequate authentication mechanisms. They propose a framework concerning how to identify security requirements for Internet banking such that the transactions being conducted are secured within their respective environments.

**(Fredriksson, 2003)** knowledge about defining high-quality service delivery over the Internet becomes crucial for banks, which want to stay competitive on the

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marketplace. If banks have knowledge about the quality attributes they can use to measure the quality of their online services and the overall satisfaction of their customers with each of these attributes, it would be much easier for them to take necessary measures and steps to improve the overall service quality.

Gerrard and Cunningham (2003)\textsuperscript{74} found a positive correlation between convenience and online banking and remarked that a primary benefit for the bank is cost saving and for the consumers a primary benefit is convenience.

Gopalakrishnan. S, Wischnevsky. J.D, Damanpour. F, (2003)\textsuperscript{75} the Internet is an outcome of the convergence of multiple technologies and its applications has the potential to strongly influence many industries. Focusing on the banking industry, we examine the factors that influence the adoption of the Internet at three levels of analysis: the external context of the industry; the industry; and the firm. At the external context level, we analyze how the development of a favorable external context facilitates the adoption of a new technological application: Internet banking. At the industry level, we examine the types of innovations that a new technological application engenders, the role incumbents, and new entrants play in promoting the adoption of Internet banking, and other factors that impact the speed of Internet banking diffusion. At the firm level, we examine differences in banks' strategies and organizational designs associated with the adoption of Internet banking as an added delivery channel versus as a separate business. We conclude by discussing unique


\textsuperscript{75} Gopalakrishnan. S, Wischnevsky. J.D, Damanpour. F “A multilevel analysis of factors influencing the adoption of Internet Banking” Engineering Management, Nov 2003, Volume: 50,issue, pg 413-426
features in the emergence and adoption of Internet banking and its potential performance implications.

Guru, B., Vaithilingam, S., Ismail, N. Guru et al. (2003)\textsuperscript{76} evaluate the websites of banks in 12 Islamic countries. They find that the majority of Islamic countries are still in the early stages of developing IB. Only some Islamic banks in the Middle East have well-developed IB websites. And Prasad, R. (2000)\textsuperscript{92} examined the various electronic channels utilized by the local Malaysian banks and also accessed the consumers’ reactions to these delivery channels. It was found that Internet banking was nearly absent in Malaysian banks due to lack of adequate legal framework and security concerns. However over 60 percent of the respondents were having Internet access at home and thus represented a positive indication for PC based and Internet banking in future.

Jalan, B. (2003),\textsuperscript{77} IT revolution has brought about a fundamental transformation in banking. Perhaps no other sector has been affected by advances in technology as much as banking & finance. It has the most important factor for dealing with the intensifying competition & the rapid proliferation of financial innovations.

Jabnoun and Al-Tamimi (2003)\textsuperscript{78} examined perceived services quality in commercial banks in the United Arab Emirates, emphasizing the importance of service quality to maintain market share, concluding that customers value human


skills the most in service quality. Finally, the importance of ease of use in determining successful IT adoption has been highlighted in much previous literature (Davis, Bagozzi and Warshaw 1989; Moore and Benbasat 1991; Taylor and Todd 1995).

**Mathew Joseph, George Stone, (2003)** The installment of customer friendly technology (such as menu driven automated teller machines, telephone and Internet banking services) as a means of delivering traditional banking services has become commonplace in recent years as a way of maintaining customer loyalty and increasing market share. Traditional brick and mortar banks are using technology to meet the competitive challenge posed by online banks, as well as a method of reducing the cost of providing services that were once delivered exclusively by bank personnel. The present research investigates some of the various roles technology plays in the US banking sector and how technology in general impacts the delivery of banking service.

**Ong Hway-Boon, Cheng Ming Yu (2003)** one of the most significant implications of technological advances in the banking sector is the possibility of delivering banking services through electronic channels (e-channels). E-channels provide alternatives for faster delivery of banking services to a wider scope of customers. However, prior to the implementation of e-channels, several factors and investment costs must be identified to ensure a more cost effective and efficient execution of e-channel services. The results of the survey suggested that banks’ operation management is the main factor affecting the success of ATMs, PC and

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branch banking, while product innovation and knowledge development factors are found to have the most significant effect on the success of banking kiosks and phone banking respectively.

**Patrick Ibbotson, Lucia Moran, (2003)**  
Internal and external forces continue to impact on the financial service sector, making it ever more difficult for traditional banks both to retain their existing small to medium sized enterprises (SME) client base, and to acquire new business clients. The traditionally poor relationship between banks and their small corporate clients has been well documented throughout the years; however, the increased use of electronic banking channels by SME banking customers threatens to change the very nature of that relationship. This paper examines the current nature of the relationship between SMEs and their banks in Northern Ireland and investigates the level of usage of and satisfaction with electronic banking channels in this region.

In the study by IAMAI, it was found that the people are not doing financial transactions on the banks’ Internet sites in India because of reasons such as security concerns (43%), preference for face-to-face transactions (39%), lack of knowledge about transferring online (22%), lack of user friendliness (10%), or lack of the facility in the current bank (2%).

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Rao and Prathima (2003) provided a theoretical analysis of i-banking in India, and found that as compared to the banks abroad, Indian banks offering online services still have a long way to go. For online banking to reach a critical mass, there has to be sufficient number of users and the sufficient infrastructure in place.

Santos (2003) emphasizes that e-channels enable consumers to compare offers online, and hence online consumers would expect the same or even higher levels of service quality.

Siriluck Rotchanakitunmnuai, Mark Speece, (2003), Many Thai Banks are currently implementing internet banking. Banks that offer service via this channel claim that it reduces costs and makes them more competitive. However, many corporate customers are not highly enthusiastic about internet banking. An understanding of why corporate customers do not accept internet banking can assists banks to implement this self-service technology more efficiently. Those already using Internet banking seem to have more confidence that the system is reliable, whereas non-users are much more service conscious, and do not trust financial transactions made via Internet channels. Non-Internet banking users tend to have more negative management attitudes toward adoption and are more likely to claim lack of resources. Legal support is also a major barrier to Internet banking adoption for corporate customers.

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Stuart J Barnes and Brian Corbitt (2003)\textsuperscript{86} the internet and the mobile phone - two technological advancements that have profoundly affected human behavior in the last decade - have started to converge. The products of this association are mobile data services. Using a variety of platforms, services are being created to enable mobile devices to perform many activities of the traditional internet, albeit in a reduced format for mobile devices. One area of activity is mobile (m-) banking (one of the first areas of commercial transaction on the wireless internet). Banking is an area that has extended in many different ways in recent years, including telephone and online banking. M-banking provides yet another channel for banking services, and in emerging markets, provides some possibility for becoming a primary channel. This paper examines the strategic implications of m-banking and the strategic positioning of m-banking services in different markets. The paper concludes with a discussion of the future for m-banking services.

Steve Worthington (2003)\textsuperscript{87} the article is based on both secondary and primary research into the use of plastic payment cards in China. The secondary research offers an understanding of the history and current situation of payment cards in China. As barriers to entry into China remain high for foreign banks, particularly if they wish to pursue a branch centric approach to distribution, the article also draws attention to the advantages of a card centric approach to market entry. Other Asia-Pacific markets such as Australia, Hong Kong, Korea and Japan have already embraced the plastic card as a means of payment at the point-of-sale.


**Vijayan and Shanmugam (2003)**

Vijayan and Shanmugam (2003) study the service quality of IB in Malaysia and find that two of the top five Malaysian banks have a four star rating out of a maximum five star rating. The remaining three top banks have a three star rating based on a 40-item evaluation instrument.

**Verghese and Ganesh (2003)**

Verghese and Ganesh (2003) analyzed customer services in PSBs and old private sector banks based on the responses of 776 customers in Kerala. They found that there is no difference between the two types of the bank branches.

**Yibin, MU (2003)**

Yibin, MU (2003) indicated the improvement of the system infrastructure. According to him, improvements of the system infrastructure are to: a) improve the system for credit cards and other forms of electronic transaction; b) build-up transaction reporting services; c) improve payment system; and d) improve telecommunications infrastructure. Once the infrastructure is placed properly, then banks can push customers to use new delivery channels by giving guarantee on security.

**SUMMARY**

The present research is to find out the customers’ perception towards e-banking services of the customers of the public and private sector bank respondents. This research is based on the gap between the previous researchers and their views on

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the customer satisfaction, the customers’ perspectives, the customers’ problems and 
prospects on the online banking, the impact of online banking, the misappropriations 
in the e-banking and so on. Hence, the researcher has framed the objectives for his 
study on the basis of the problems stated as the perception of the customers towards 
the e-banking transactions and services at both the public and private sector banks in 
the particular area Chennai.

The previous studies were related to any one of the services or two to three 
services of the e-banking activities of the banks of any one sector. The studies might 
be related to the particular activity, the perception or the satisfaction of the customers. 
But the present research has been formed on the basis of that gap existed from the said 
phenomena and the present phenomena like efficiency of operations, the usage, the 
results, the satisfaction, the problems, etc. Hence, the researcher has followed the 
objectives and the statement of the problem formulated in this line to reveal the results 
for this present study.

This present study will strengthen the above by means of the comparative 
results, the statistical tools appropriately used, the proper findings, the right solutions 
or suggestions for the prospects of the researcher. It would ensure the accuracy of the 
objectives, the significance of the study and the design formulated. It is summarized 
that the present study is in all means become satisfactory with the thirst areas existed 
in the customers’ perception towards the e-banking services that are inevitable in the 
present day technology.