CHAPTER –II

REVIEW OF LITERATURE
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2.1 INTRODUCTION

A review of literature helps the researcher to have first-hand knowledge about the research work done by others. A brief review of literature would be of immense help to the researcher in gaining insight into the select problem. In order to have a comprehensive understanding of the proposed study, the researcher has made a portal. A literature review gives an overview of the field of enquiry: what has already been said on the topic, which are the key writers, what are the prevailing theories and hypotheses, what questions are being asked and what methodologies and methods are appropriate and useful. Review of related literature is an important pre-requisite to actual planning and execution of any research work. For any worthwhile research in any filed; the research work needs an adequate familiarity with the literature available in that field of study.

To-day we cannot think about the success of a banking system without information technology and communication. It has enlarged the role of banking sector in the economy. The financial transactions and payment can now be processed quickly and easily. The banks with the latest technology and techniques are more successful in the competitive financial market. They have been able to generate more and more business resulting in greater profitability.

To know the customer perception on internet-banking on various aspects, review of literature has vital relevance. In any research work, due to literature review, the possibility of overlapping study can be eliminated and another dimension can be selected for the study. The literature review helps the researcher to overcome limitations of the existing works or may assist to extend the prevailing study. Various empirical and
theoretical studies have been undertaken at the international and national level to analyze the impact of internet banking and Information and Communication Technology (ICT) on banking sector including customers, service quality and payment system. The earlier literature mainly focus upon internet banking service on productivity and profitability primarily due to core banking system, electronic fund transfer, real time gross settlement system and electronic clearing services. From the customer angle, the studies primarily focus upon; why customers choose e-banking products and increase in their level of satisfaction due to phone banking, mobile banking, internet banking, website services, ATMs, etc. These services have not only improved the satisfaction level of customers, but also helped in reduction of processing time and transaction time. The productivity of banks in terms of time saving and attending the customers at the branches has also improved. The review of following studies throws light upon different aspects of e-banking. Though the earlier literature has focused on the different dimensions of internet banking, this study focuses on the overall perception of the customers on internet banking.

For the purpose of this study a lot of literature has been reviewed, that is, books, journals, magazines, newspapers, etc. and some of the reviewed literature are discussed below:

**Suleiman et al.,** (2005) has studied the impact of E-banking on Malaysian banking sector. The study aimed at providing an overview of E-banking adoption in Malaysia. The researcher has analyzed websites of the banks in order to know the impact of e-banking. Evaluation of websites contained 32 elements, and a survey was conducted to obtain customers’ perspective on e-banking. The researcher opines that results of the study cannot be generalized to the general population. Nevertheless, the results provide a
fair indication of what services e-banking users find useful and which group of customers were likely to use the services more\textsuperscript{11}.

\textbf{Laforet and Li, (2005)} in their study have investigated the market status of online / mobile banking in China. The objective of the study was to identify the target customers for online and mobile banking, and to compare the attitude of users and non-users towards e-banking with respect to a number of factors such as technology, security, convenience, etc. The authors selected a sample of 300 respondents from six major cities of China. The results showed that online and mobile banking users were predominantly males not necessarily young and highly educated. Security was the most important factor that motivated Chinese consumer for the adoption of online banking. But the main problems faced by the customers of Chinese banks in online banking were perception of risks, computer & technological skills, and lack of awareness\textsuperscript{12}.

\textbf{Erickson et al., (2005)} has studied the technology acceptance of internet banking in Estonia. The objective of the study was to see that to what extent customers accept internet banking as a tool for the satisfaction. The findings of the study suggest that internet banking proved to be beneficial for the customers. However, banks need to put much efforts not only into making a user friendly internet bank, but also to explain their customers how the internet bank was useful to them\textsuperscript{13}.

\textbf{Kassim, (2005)} has explored the growing needs and expectations of the consumers in Qatar. Due to competition, the banks had to offer a broader range of products and services at more competitive prices through more efficient and convenient

channels. The study investigated the discrepancy between customer expectation and perception toward E-banking services. The author compared the expected and perceived value of E-banking services through mean responses which showed that largest discrepancies were found in the availability of instructions and personnel assistance on how to use e-banking services and functionality. The author has concluded that to increase overall service quality of E-banking, management and employees should find out what customers expect in terms of procedure handling, efficiency, accessibility and updated information about products and services\textsuperscript{14}.

Lassar et al., (2005) has explored the relationship between consumer innovativeness and self-efficiency on the internet, online banking adoption and electronic commerce. To understand the relationship, they used Technology Adoption Model (TAM) which has suggested that use of technology based system totally depends upon the consumers feeling and attitude towards it. The findings of the study suggest that the level of consumers’ innovations matters when it comes to adapting and utilizing e-banking products and procedures. The results showed that products like telephone banking, EFT, online banking required active consumer role in using the product, while in bill payment, consumer needs only set up process initially and then monitor on a semi-regular basis. The author has concluded that banks offering e-banking need to recognize the importance of consumer innovation characteristics so that consumer can be well benefited\textsuperscript{15}.


Bauer et al., (2005) in their study, has validated a measurement model for the construction of website portals quality based on three dimensions that were core services, additional services and problem solving services. These dimensions were the major determinants of consumer quality perception for e-banking services. In fact, it was represented by multi-dimensional and multifactor construct. The author has concluded that by comparing e-service quality model with traditional service quality model, more detailed insights in the field of quality perception were required in order to have a detailed vision about quality\(^\text{16}\).

Gabriel et al., (2005) have tried to evaluate the quality of banking services and customer satisfaction. The authors surveyed 11936 customers of Brazilian banks. They explored five factors for assessing the services of these banks, i.e., 1. Relationship with the customer, 2. Business and financial transactions, 3. Information technology, 4. Brand, 5. Image of the bank. Out of these five factors, first two factors have significantly higher impact on customer satisfaction. The authors highlighted that as information technology changes very fast, so utmost care should be given while providing quality service to customer. Further, with the advent of information technology, banks should diversify the portfolio of services so that the customers could not move to another bank\(^\text{17}\).

Raopun, (2005) has evaluated the level of internet banking service in Thailand and compared the overall service quality of internet banking. The author used eight dimensional quality model given by David A. Garvin, namely, performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. The results of the study indicated that reliability, security system and information accuracy


were the most important perspectives and least important was the perceived quality of commercial bank. The results of the study could be used as a guideline to set up a form of service in order to satisfy the needs of target group accurately and appropriately\textsuperscript{18}.

**Wan et al.,** (2005) have evaluated the adoption of four major banking channels i.e. branch banking, ATM, telephone banking and internet banking in Hong Kong banks. They also highlighted the influence of demographic variables and psychological variables in adopting the distribution channels. The results of the study indicated that among four channels, ATM was most frequently used followed by internet banking and branch banking. Telephone banking was the least adopted banking channel. The researchers have suggested that banks should improve their website designs and navigations, strengthen website security, allow more ways in which customers could check the accuracy of their transactions and provide more useful financial information in a well organized manner\textsuperscript{19}.

**Ashiya,** (2006) has evaluated developments made by electronic payments. The author has evaluated different modes of e-payment used across the globe. The main objective of the study was to find the current offerings and development provided by electronic payments. The author evaluated different modes of e-payment such as plastic cards, debit cards, credit cards, smart cards, electronic cheques etc. These electronic ways provided an excellent instrument for payment system. The author analyzed that security was the main concern among electronic payments. However, e-payment being a sophisticated technology could be used as a tool for the enhancement of customer loyalty


and business of banks as it has reduced the risk & cost and could increase the customer loyalty\textsuperscript{20}.

\textbf{Enders et al.,} (2006) in their paper, have addressed a fundamental problem of the disruptive innovation theory which lies in the difficulty to categorize new technologies into sustaining and disruptive innovation. They further discussed different e-banking modes used by Nordea banks, i.e., e-identification, e-signature services, e-billing services, e-salary function, e-payment function. However, e-banking services should be properly analyzed for the relativity of disruption\textsuperscript{21}.

\textbf{Jain and Hundal,} (2006) have described the importance of mobile banking and barriers in the adoption of mobile banking. The objective of the study was to find the reasons why the people had not fully accepted the technology though it provided much advantage to the banking customers as compared to previous technologies. The paper attempted to identify the various barriers, viz. access problems, dissatisfaction and inability of service providers in the adoption of mobile banking services. The results of the study indicated that consumers got disheartened by the complicated function while accessing the mobile banking services which lead to rise in their dissatisfaction level, as no proper guidance was provided to them\textsuperscript{22}.

\textbf{Krishnamurthy,} (2006) has highlighted the advantages, risks, innovations and convenience involved in e-banking. ATM, telephone, internet and cluster banking helped banks to deliver the products more effectively. The author also commented upon some risks such as loss of secrecy of the customers, financial stability, fraud prone

possibilities, eruption of legal claims, etc. So, the author suggested that banks should adopt such a strategy in which risks and innovation in banking products move parallel and simultaneously.  

Paul, (2006) has discussed the role of technology and scope of remote channels, their implication, strength, weakness, opportunity and threat in banking sector. The author evaluated that IT development affects banking in two ways. Firstly, it has contributed in reduction of costs associated with management of information by replacing paper based and labour intensive methods with automated processes. Secondly, it has modified the ways in which customers had access to banks’ services and products. The researcher found that the introduction of RTGS, NDS, and CFMS have increased the safety, security, efficiency and soundness in payment system. Lastly, the author has revealed that technology has a great impact on the structure of banking sector in the form of bank branches, bank personnel and alliance.  

Heng Michael et al., (2006) has analyzed the impact of e-banking on brick and mortar banks through innovation model. The researchers analyzed 8 core capabilities to assist the banks migrate to e-banking environment. Their capabilities fall into two groups relating to configuration of existing business model. They suggested that banks need to develop uniquely innovative services and products on the one hand and innovative business model that changes the way banks operate on the other. They concluded that eight core capabilities (technical dynamic capabilities and business dynamic capabilities) provided a blue print for sustaining a bank’s ability to exploit e-banking.

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Siam, (2006) has evaluated the effects of electronic banking on the profitability of Jordanian banks. The study investigated the reasons behind providing electronic banking services through internet, their impact on banking services in general, and banks profitability in particular. The results of the study revealed that electronic banking services have a negative impact on the profitability of banks in the short run because of increased capital costs involved in technical and electronic infrastructure, cost of training to employees and also the cost involved in creation of environment where the banks can operate smoothly. However, these services have a positive impact in the long run on the profitability of banks. The researcher recommended that banks need to carry out awareness and promotion campaigns to educate clients and make them aware them of feasibility through reduced time, cost, effort and also to hold training courses for employees to understand the e-banking business strategies.

Tyrone T. Lin, (2006) has studied “An internet banking system establishment with transaction rate uncertainty: A real options approach” This study investigates the entry threshold for providing a new transaction service channel via the real options approach, where the entry threshold is established by using an Internet banking system designed for the use of financial institutions under transaction rate uncertainty. Sensitivity analyses of related parameters are also conducted through numerical simulation. The results of the novel approach presented in this study provide a valuable reference for financial institutions to establish Internet banking systems.

Supriya Singh, (2006) has studied “The Social Dimensions of the Security of Internet banking” This paper examines the users’ perspective on the security of Internet banking in Australia within the social context. This user-centered design approach supplements the technological and industrial approaches to security. The user-centered research on banking was conducted at the Royal Melbourne University of Technology University and Griffith University, both of which are part of the Smart Internet Technology Cooperative Research Centre. The author has concluded that the most effective way to increase the perception of Internet banking security is to increase ease of use, convenience, personalization and trust. Without the perception of security, there will be little trust in banking and transactions on the Internet. This will impede the use of Internet banking and e-commerce which are increasingly important aspects of the nation’s critical infrastructure.

Boatang, (2006) has explored some of the issues that affected the key decisions of banks while adopting e-banking techniques. The findings of the study indicated operational constraints related to customer location, the need to maintain customer satisfaction and the capabilities of the banks. The author pointed out the need for African banks to understand customer needs, corresponding service to offer, the resources and partnership required to offer it, and develop appropriate e-banking strategies that maximized value for both customers and banks.

Chalam and Nageswara, (2006) have focused that as the computer has influenced each and every aspect of the economy, banking sector was not an exception to it. The objective of the study was to find out change in banking sector through the

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techniques of e-banking. The authors evaluated several e-banking products like ATM, EFT, ECS, EDI, telebanking, etc. The researchers concluded that emerging challenge in e-banking was due to lack of awareness among people, no cyber laws by government and low density of telephone lines and low computerization of banking activities. They recommended that banks should adopt hardware and software security measures, appoint skilled personnel and adoption of digital signature certification authority so as to tackle the major challenges in e-banking\textsuperscript{30}.

\textbf{Flavian et al.,} (2006) have explored how customers’ perceptions of traditional bank influence their decision to adopt the services of the internet. The researchers found that if the customer trusts in brick and mortar bank, then it was possible that they feel more motivated to use the online services offered by the same bank due to trustworthiness of the customer in the traditional banking system. The results of the study suggested that to use internet banking; trust, income, age, sex, education and employment were the most affecting factors for the use of online banking services and the banks can reduce their costs and widen their market through online banking adoption\textsuperscript{31}.

\textbf{Gan et al.,} (2006) have examined consumer choices between electronic banking and non-electronic banking in New Zealand. The authors evaluated that decision to use electronic banking was hypothesized to be a function of service quality, perceived risk factors, price factors, service product characteristics, individual factors and demographic variables. The findings showed that service quality, perceived risk factors, user input factors; employment and education were the dominant variables that influence

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consumers’ choice of electronic banking channels. The authors observed that consumer use e-banking because of its suitability, convenience and reliability.

Lichtenstein and Williamson, (2006) in their research article gave an outlook as to how and which specific factors affect the consumer decision, whether or not to choose internet banking service in the Australian context. The findings of the study brought out that convenience was the main motive for customer to bank on the internet, while there was a range of other influential factors that may be modulated by banks. The research suggested that banks will be able to manage consumer experiences with moving to internet banking only if they understood that such experience involves a process of adjustment and learning over time, and not merely the adoption of new technology.

Nelubiri and Sinti, (2006) have examined the impact of internet banking on customers’ attitude, their needs and behaviour. The objective of the study was to see the internet banking adoption in Malaysia. The authors used five perceived attributes that is relative advantage, compatibility, complexity, trial ability and absorbability for IB adoption. The results of the study indicated that for better understanding of internet banking acceptance, it was very necessary to observe customer attitude and perception towards internet banking. So, the banks should adopt such internet banking facilities which could enhance processing of transaction, inter-activity and customization.

Robbins, (2006) has tried to evaluate whether the adoption of e-banking by the banks affected the importance of bank location. The study looked into the state of consumer adoption of e-banking products and growth of e-banking products since 1995.

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The study also investigated whether consumer choice had changed as a result of increased e-banking use and how banks had responded. The author focused that e-banking was not a perfect substitute of physical presence of banks in the market. Consumers want the convenience of e-banking products but only of those banks which fall close to their place. So, the location of a bank branch and electronic banking were complementary to each other\textsuperscript{35}.

\textbf{Walter,} (2006) has evaluated why people use or choose technology enabled services like internet banking, telephone bill paying and internet shopping service. The author used a behavioural model for the study. The findings of the study showed that customers’ adoption rate to use internet and telephone banking was influenced by their willingness to use service, their personal capacity to engage in the service, the risks and advantage involved in the services. The author concluded that for more use of technology enabled services, it should make more customers friendly, reduce the system complexity and undue waiting time involved in the service handling\textsuperscript{36}.

\textbf{Rajesh Kumar Srivastava,} (2007) has studied “\textit{Customer’s perception on usage of internet banking}”. Internet banking is still at infancy stage in the world. Many studies focused on usage of internet banking but many factors on non-usage were overlooked. The causes were identified and researched through correcting the causative factors so that internet banking can be used by more people. This will help the banking operations to be more cost effective. The research is focused on what the customer’s perceptions are about internet banking and what are the drivers that drive consumers. Qualitative exploratory research using questionnaire was applied. 500 respondents were selected for


the study after initial screening. They were all bank customers. The study revealed that education, gender and income play an important role in the usage of internet banking. Not much research has been done on these areas as they were focused more on the acceptance of technology rather than on people\textsuperscript{37}.

\textbf{Mojdeh Ghezelayagh; (2007) has studied “Prediction of Customers’ Attitudes toward Using Internet Banking In Iran”} The present study focuses on e-commerce opportunities for improving customer services in the Iran banking sector. First part of this study reports on a survey of 31 top marketing and IT managers from three major Iranian governmental banks. The results indicate that the potential of e-commerce ranges from simple applications, such as giving information about services, to more sophisticated ones that involve customers in service designs and customization. At present, one of the key challenges of the Internet as a service delivery channel is how banks manage service quality, which holds a significant importance to customer satisfaction. On the other hand, in this new era of cyber service, marketing managers must reappraise their approach to marketing services in general and international services in particular. In the meantime, in the second part of this report, a large quantitative survey with customers has been conducted by testing and analyzing the attributes which involve the customer attitudes toward using Internet banking. The Internet banking technology is relatively new to the Iran marketplace. Data was collected using a survey of 234 banking customers in a one-state area (Tehran) and analyzed using path analysis modeling. The result of the model tests on this technology provides evidence on different factors including: ease of Use, Usefulness\textsuperscript{38}.

\textsuperscript{38} Prediction Of Customers’ Attitudes Toward Using Internet Banking in Iran, mojdehghezelayagh; [2007]
Mohamad Rizal Abdul Hamid, Hanudin Amin, Suddin Lada, Noren Ahmad, (2007) have studied “A Comparative Analysis Of Internet Banking In Malaysia And Thailand”. The purpose of this paper is to compare the internet banking system in Malaysia and Thailand. Using comparison as the theoretical base, a secondary data was used to determine the differences between both countries with respect to Internet banking. Analysis of the data indicates that both nations are dissimilar in providing basic services offered by their commercial banks. Belief on lack of effort on educating the consumers toward internet banking further affected the usability of internet banking in both countries. This study hopes to contribute to the literature on internet banking in Malaysia and Thailand.

Manoharan, (2007) has highlighted the e-payment system in India and its performance impact on Indian banking sector. The author described that competition in banking industry has forced the banks to rethink the way they operate their business. So, e-banking has made it possible to find alternate banking practices. In the paper, the author divided the payment system in India into three parts, i.e., large value payment system, retail payment system, and retail electronic system. Each one includes different categories of e-payment. The author has studied the performance of various Indian payment systems in the last three years in which RTGS emerged as the principal payment system in India for wholesale payment. Still new 90 per cent of transactions were cash based. So, an effort should be made to increase the use of e-payment, and RBI should make efforts to strengthen the legal framework of electronic banking system.

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39 A Comparative Analysis Of Internet Banking In Malaysia And Thailand, Mohamad Rizal Abdul Hamid, Hanudin Amin, Suddin Lada, Noren Ahmad, Journal Of Internet Business Issue 4 – 2007
Ramani, (2007) has studied the impact of e-payment system on Indian banking sector. E-payment was required for handling large volume of business payment and remittances for hassle free, quicker and faster payment remittances at low cost, and paperless transactions. The researcher highlighted various steps taken by RBI for the e-payment. It includes RTGS, deferred net settlement system such as electronic clearing services debit and credit, electronic fund transfer and NEFT. The researcher has studied that these methods have increased the use of core banking solutions, data warehousing and data mining. E-payment has reduced the chances of fraud, improved customer service by cutting the delay in payment obligation.\footnote{Ramani, D. (2007),"The E-Payment System", E-business, Vol.7, No.5, pp.35-41.}

Singh and Malhotra, (2007) have made an attempt to discover the factors affecting a bank’s decision to adopt internet banking in India. The study was based on 88 banks comprising of public, private and foreign banks covering financial years from 1997 to 2005. The results of the study showed that large banks having high fixed expenses, high income and expenditure tend to use more technology. The adoption of this innovation by other banks increases the probability that a decision to adapt will be made as it has increased the profitability and productivity of banks.\footnote{Singh, B.; and Malhotra, P. (2007),“Determinants of Internet Banking Adoption by Banks in India”, Emerald Internet Research, Vol. No.3, pp. 323-339.}

Emad Abu-Shanab and Michael Pearson, (2007) have studied “Internet Banking in Jordan: An Arabic Instrument Validation Process”. Internet banking is booming in Jordan and it is time for banks and customers to reap the benefits from such technology. Bank customers’ propensity to use internet banking is dependent on their attitudes towards such technology. This work validates an Arabic technology acceptance instrument through a rigorous process so that banks can better understand the factors that affect the customer’s intention to use the internet banking technology. The work utilized
the backward translation method and developed an Arabic instrument for eleven constructs that yielded an acceptable level of reliability. Conclusions, implications and future work are provided at the end of the paper\textsuperscript{43}.

**Laukkanen**, (2007) has highlighted the attributes in multi-channel electronic banking. The main objective of the study was to understand the diverse retail channel preference of online bank customers by examining their channel attribute preferences in electronic banking. For the research purpose, the author divided the customers into two groups those who pay their bills over the internet, and those who use a mobile phone for the service. With the help of conjoint analysis, the results of the study revealed that internet and mobile users differ in their preferences towards electronic channels attributes in bill paying. It was found that screen size followed by location and response time were the most important attributes for internet users. However, locations followed by screen size and response time were the most important attributes for mobile users. The author concluded that banks and producers should diversify consumer group so that the use of electronic banking techniques and services could be increased\textsuperscript{44}.

**Liao and Wong**, (2007) have empirically explored the major considerations associated with internet-enabled e-banking systems and systematically measured the determinants of customer interactions with e-banking services. In order to study customers’ interaction with internet banking, the respondents were asked to explain the extent of using internet banking service. The results suggested that perceived usefulness, ease of use, security, convenience and responsiveness to service requests significantly explained the variation in customer interactions. Exploratory factor analysis and


reliability test indicated that these constructs they possessed significant convergent and discriminatory validities. Both perceived usefulness and perceived ease of use have significant impact on customer interactions with e-banking services. Perceived security, responsiveness and convenience also represented the primary avenues influencing customer interactions. The findings had managerial implications for enhancing extent of e-banking operations and developing viable e-banking systems and services.\(^{45}\)

**Gupta. P.K, Jamia Millia Islamia, (2008)** have studied “Internet Banking in India - Consumer Concerns and Bank Strategies”. Internet banking has attracted the attention of banks, securities trading firms, brokerage houses, insurance companies, regulators and lawmakers in developing nations since the late 1990s. This paper presents the data, drawn from a survey of Internet banking consumers and the services providers that offer Internet banking and develops a functional model for maximizing value to the consumers, which the banks may choose to adopt Internet banking strategically. The paper identifies the weaknesses of conventional banking and explores the consumer awareness, user patterns, satisfaction and preferences for Internet banking vis-à-vis conventional form of banking and also highlights the factors that may affect the bank’s strategy to adopt Internet banking. It also addresses the regulatory and supervisory concerns of Internet banking.\(^{46}\)

**Kautish, (2008)** has described the paradigm shift of banking sector from traditional banking to online banking. The objective of the paper is to discuss the derivation of value added tool of online banking system which was used to attract new customers and retain the existing ones. The author has discussed two bank models


\(^{46}\) Internet Banking in India – Consumer Concerns and Bank Strategies, P.K. Gupta, Jamia Millia Islamia, Global Journal of Business Research, Volume 2,Number 1,2008.
integrated banking model where the banks provide internet banking service as an extension to their basic services like ATM and phone banking. So, it is a kind of hybrid approach and the other is stand alone internet banking model, where the banks totally rely on the online channel. To improve the services through e-banking, banks should think from the customers’ perspective and there should be creativity and innovation in designing and implementation of e-banking processes. The author has concluded that as the e-banking is a relatively new concept in the global banking scenario, the best of this concept is yet to come.\(^{47}\)

**Sarangapani and Mamatha**, (2008) have explained the concept of e-banking and highlighted all the concerns and challenges while implementing the same. The authors emphasized that e-banking was necessary not only for improving the quality of services rendered to the customers but also for better marketing of products. The authors evaluated various e-banking modems for banking transactions like ATM, EFT, ECS, SPNS, PC banking, mobile banking and internet banking. But they mainly emphasized on virtual banking, smart cards, e-cheques and internet banking. They analyzed the websites of various banks for internet banking adoption in which private sector banks were providing maximum IB services followed by public sector banks, foreign banks and old private sector banks. The author suggested some measures which could contribute towards greater adoption of e-services. The customers should be taken into confidence that the transactions made by them are risk free, and there is no scope of any fraud. Furthermore, the system should be free from legal intricacies.\(^{48}\)


Suresh, (2008) has highlighted that recently developed e-banking technology has created unpredicted opportunities for the banks to organize their financial products, profits, service delivery and marketing. The objectives of the study were to evaluate the difference between traditional and e-banking, and to identify the core capabilities for the best use of e-banking. The author analyzed that e-banking will be an innovation if it preserved both business model and technology knowledge, and disruptive if it destroys both the model and knowledge. He also differentiated e-banking from traditional banking in five ways, namely, value proportion, market scope, cost structure, profit potential and value network. However, in order to exploit technical and business capabilities of e-banking, banks should generate more customers inside and outside India so that more revenues could be generated that lead to better future of Indian economy\textsuperscript{49}.

Samuel Kwaku Obeng, (2008) has studied “Rural Banking In Ghana: It’s Impact on Rural Farmers (A Case Study of Abokobi Rural Area)” This study examined the impact of rural banking on rural farmers in Ghana. The convenient sampling procedure was used to select thirty (30) farmers and four workers at the rural bank studied for the research. Regression analysis was the major statistical tool used to analyze the data collected from the rural banks. SPSS and Microsoft Excel software were used for the analysis. From the research, it was found out that the higher the interest rate, the lower the demand for loans. This was not depicted in the secondary data collected from the Abokobi Area Rural Bank. The higher interest rates tends to have an adverse effect on the development or growth of the farmers or businesses in Ghana since they depend very much on availability and accessibility to funds at reasonable or favourable rates\textsuperscript{50}.

\textsuperscript{50} Rural Banking in Ghana: It’s Impact on Rural Farmers (A Case study of Abokobi Rural Area) Samuel kwakuobeng, Samven’s Research and Consultancy Unit, July, 2008
Raja et al., (2008) has evaluated the impact of e-payment system on the business opportunities. They identified that due to the growth of internet users, various electronic payment mechanisms have been developed to cater to the diversity of applicants. The researchers classified the e-payments into three main groups, namely, cash like systems, cheque like systems, and hybrid systems which were further classified into credit cards, debit cards and electronic cheques. They identified three main issues related to e-payment that were security issues, low interest among businessmen, and heavy reliance on traditional payment methods. They also analyzed that there were technical and cultural problems which hinder the path of e-payments. However, to make e-payments more effective, security threats should be reduced; and people should realize that traditional payment methods are more time consuming than electronic payment methods. They should also realize that plastic card payments are more convenient, easier and more secure than cash or cheques.

Sarangapani and Mamtha, (2008) have studied the impact of Information Technology on banking sector and its security related aspects. Due to recent developments in banking industry and with the introduction of Basel-I and II implementation; customers are more demanding now and it requires innovation in banking services. The researchers found that now the banking industry has been more customer-oriented with unlimited marketplace, extensive product breadth and e-enabled services provided to the customers. The authors also studied e-security aspects of banking which pose damage and threat to the existing e-banking system. The authors concluded that existing legal framework was adequate to meet the challenges of e-banking; and it has become essential to create awareness of e-banking among customers, banks and society. The review of literature provided that e-banking services

have a negative impact on banks’ profitability in the short run because of increased
capital costs on account of technical and electronic infrastructure, training their
employees and also to create the environment where the banks can be electronically
operated smoothly. However, these services have a positive impact on the profitability of
banks in the long run. Despite the increasing importance of E-banking services, the
research pertaining to E-banking in Indian context has been limited. While concluding, it
can be said that e-banking services are complementary to the existing branch network
and not a substitute to it\(^52\).

**Divya Singhal and V. Padhmanabhan, (2008)** have studied *“A Study on Customer Perception towards Internet Banking: Identifying Major Contributing Factors”*. Internet banking is 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\(^53\).

**Francesca Arnaboldi and Peter Claeys, (2008)** have studied *“Internet Banking in Europe: a comparative analysis”*. The objective of this paper is to compare the performance of these two models across countries, so as to examine the role of differences in the banking system and technological progress. A fuzzy cluster analysis on the performance of banks in Finland, Spain, Italy and the UK shows that internet banks are hard to be distinguished from banks that follow a click and mortar strategy; country borders are more important. The author find that the strategy of banking groups to

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incorporate internet banks reflects some competitive edge that these banks have in their business models. Extensive technological innovation boosts internet banking.\(^{54}\)

**Hao Chen and Jean-Pierre Corriveau**, (2009) have studied “Security Testing and Compliance for Online Banking in Real-World”. There is a continuous growing in the number of customers, who use online banking, because of its convenience. There are two current online banking problems. First, to observe a lack of attention and researches focus on security issues relevant to the clients’ side of online banking systems. Second, there are many security products used in online banking systems. However, security testing is still in its infancy and little is available to verify if those security products are working properly to discuss the current security testing categories and standards, as well as common security testing approaches.\(^{55}\)

**Prema. C**, (2009) has studied “Factors Influencing Consumer Adoption of Internet Banking in India”. The Banking industry has undergone a dramatic change since internet penetration and the concept of internet banking. Internet banking is defined as an internet portal, through which customers can use different kinds of banking services. Internet banking has major effects on banking relationships. The primary objective of this research is to identify the factors that influence internet banking adoption. Using PLS, a model is successfully proved and it is found that internet banking is influenced by its perceived reliability, Perceived ease of use and Perceived usefulness. In the marketing process of internet banking service, marketing experts should emphasize these benefits. Its adoption provides these benefits and awareness can also be improved to attract consumers’ attention to internet banking service.\(^{56}\)

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\(^{56}\) Factors Influencing Consumer Adoption of Internet Banking in India, Prema.C, Assistant professor, Karunya School of Management, Karunya University, Coimbatore, India.
Ming-Chi Lee, (2009) has studied “Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit”. Online banking has emerged as one of the most profitable e-commerce applications over the last decade. This paper explores and integrates the various advantages of online banking to form a positive factor named perceived benefit. In addition, drawing from perceived risk theory, five specific risk facets – financial, security/privacy, performance, social and time risk – are synthesized with perceived benefit as well as integrated with the technology acceptance model (TAM) and theory of planned behavior (TPB) model to propose a theoretical model to explain customers’ intention to use online banking. The results indicated that the intention to use online banking is adversely affected mainly by the security/privacy risk, as well as financial risk and is positively affected mainly by perceived benefit, attitude and perceived usefulness. The implications of integrating perceived benefit and perceived risk into the proposed online banking adoption model are discussed.

Yassaman Mastoori, (2009) has studied “Reasons Barring Customers from Using Internet Banking in Iran: An Integrated Approach Based on Means-End Chains and Segmentation”. The advent of information technology has influenced the banking industry to a great extent. It has enabled the banks to perform their tasks more effectively. The purpose of this study is to find out why Iranian bank customers, in particular, those bank customers to whom Internet banking services have already been offered are not using Internet banking. Furthermore, when non-adopters comprise the majority of the population, describing all non-adopters as one homogeneous group may not be accurate. Hence, the second objective of this study is to find the homogeneous groups (segments) of Internet banking non-adopters. For this purpose, Association

57 Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit, Ming-Chi Lee, Electronic Commerce Research and Applications 8, 2009, pp. 130–141.
Pattern Techniques (APT) was applied which is a two-stage method and has its foundations in the mean-end theory. In the first stage, 32 Iranian bank customers were interviewed in-depth using laddering interviewing technique. The analysis results of the collected data indicate that the main reasons which bar these customers from using Internet banking are lack of knowledge about Internet banking, lack of trust in the system, and limited Internet banking services. Further analysis revealed that different customers indeed had different reasons for not using Internet banking. The cluster analysis revealed five segments of Internet banking non-adopters, namely, Skeptics, Traditional clients, The Distrustful, the Time-conscientious, and The Cost-sensitive. The description of each segment and respective suggestions for each segment are provided.

Deepshikha Jamwal & Devan and Padha, (2009) have studied “Internet Banking Systems in India: Analysis of Security Issues” Internet banking which is a security-based system. There are various risk issues and Internet fraud that can affect the customer’s view of the service quality provided by the banks. The wireless Internet is a recent trend followed by the banking systems in India. There has been a sharp rise in the Internet banking over the last decade globally and this trend is also followed up in India due to the significant rise in banks offering various banking services through Internet. The paper aims to protect customer’s privacy and protect against fraud at providing a specific focus to identify the security issues in Indian banking system and also the impact of demographics in influencing Indian Internet users in consuming different services online.

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58 Reasons Barring Customers From Using Internet Banking In Iran: An Integrated Approach Based On Means-End Chains And Segmentation, Yassaman Mastoori; [2009], University Essay From Luleå/Business Administration And Social Sciences

Pooja Malhotra, Balwinder Singh, (2009) have studied “The Impact of Internet Banking on Bank Performance and Risk: the Indian Experience” This paper describes the current state of Internet banking in India and discusses its implications for the Indian banking industry. Particularly, it seeks to examine the impact of Internet banking on banks’ performance and risk. Using information drawn from the survey of 85 scheduled commercial bank’s websites, during the period of June 2007, the results show that nearly 57 percent of the Indian commercial banks are providing transactional Internet banking services. The univariate analysis indicates that Internet banks are larger banks and have better operating efficiency ratios and profitability as compared to non-Internet banks. Internet banks rely more heavily on core deposits for funding than non-Internet banks do. However, the multiple regression results reveal that the profitability and offering of Internet banking does not have any significant association, on the other hand, Internet banking has a significant and negative association with risk profile of the banks\(^60\).

Gunajit Sarma and Pranav Kumar Singh, (2010) have studied “Internet Banking: Risk Analysis and Applicability of Biometric Technology for Authentication” This paper mainly focuses on providing banking services to customers using web with highly secured technology. Implementing technology is the responsibility of management in order to highlight the points towards the use of biometric technology in internet banking system for risk management of banks regular activities through authentication\(^61\).

Thomas Ogoro Ombati, Peterson Obara Magutu, Stephen Onserio Nyamwange, (2010) has studied “Technology and Service Quality in the Banking

Industry - Importance and Performance of Various Factors Considered in the Electronic Banking Services™. The purpose of this research paper was to establish the relationship between technology and service quality in the banking industry in Kenya. The research was carried through a cross-sectional survey design which questioned respondents on e-banking services. The respondents of the study were customers of banks using e-banking services (internet banking, mobile banking and ATM). The sample in this study consisted of 120 respondents who are users of the e-banking services. The data collected was analyzed by use of frequency, percentage, means and correlation analysis. The findings revealed that, secure services as the most important dimension, followed by convenient location of ATM, efficiency (no need to wait), ability to set up accounts so that the customer can perform transactions immediately, accuracy of records, user friendly, ease of use, complaint satisfaction, accurate transactions and operation in 24 hours\textsuperscript{62}.

Vinayagamoorthy.A, Senthilkumar.K, (2010) have studied “Role of Reach of Internet Banking in India”. The Internet Banking is changing the banking industry and it has a bearing on having the major effects on banking relationships. Internet Banking involves delivery of banking products and services. In the world of banking, the development in information technology has an enormous effect on development of more flexible payment methods and more- user friendly banking services. Electronic Banking services are new and the development and diffusion of these technologies by financial institutions is expected to result in more efficient banking system\textsuperscript{63}.


\textsuperscript{63} Dr. A. Vinayagamoorthy, K. Senthilkumar, Role Of Reach Of Internet Banking In India,
Fadhel.S.Alabdullah, FahadH.Alshammari, Rami Alnaqeib, Hamid A.Jalab, A.A.Zaidan, B.B.Zaidan, (2010) have studied “Analytical Study on Internet Banking System” The Internet era is a period in the information age in which communication and commerce via the Internet has become a central focus for businesses, consumers, government, and the media. The Internet era also marks the convergence of the computers and communications in industries and their associated services and products. Now a day, the availability of the Internet makes it widely used for everyday life. In order to lead business to success, the business and specially the services should provide comfort use to its customers. The bank system is one of the most important businesses who may use the website. The using of the web-based systems should contain special requirements to achieve the business goal. This paper presents the functional and non-functional aspects of the web-based banking system.

Olorunsegun Shittu, (2010) has studied “The Impact of Electronic Banking In Nigeria Banking System (Critical Appraisal Of Unity Bank Plc)”. Electronic banking system has become an important practice among commercial banks in Nigeria. Through the cluster sampling technique, data was collected by means of questionnaires from 40 Unity Bank officers and the result shows that Unity Bank electronic banking guidelines are in line with the CBN electronic banking guideline. The bank has an effective electronic banking system which has improved its customer’s relationship and satisfaction. To this end, It is recommended that the bank information technology training program should be encouraged among the staff of Unity Bank and necessary legal codes in banking should be established in order to enhance the growth of the industry.

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65 Olorunsegun Shittu, The Impact Of Electronic Banking In Nigeria Banking System (Critical Appraisal Of Unity Bank Plc), Research Project Department Of Management Science, Faculty Of Engineering And Technology, Ladoke Akintola University Of Technology, Ogbomoso, Oyo State Nigeria
Hamdan.O.Alanazi, Rami Alnaqeib, Ali K.Hmood, M.A.Zaidan, Yahya Al-Nabhani (2010) have studied “On the Module of Internet Banking System”. Because of the speed, flexibility, and efficiency that it offers, the Internet has become the means for conducting growing numbers of transactions between suppliers and large international corporations. In this way, the Internet has opened new markets to the world and has accelerated the diffusion of knowledge. The meaning of Internet markets or online business has been widely used in these days. The success of the business depends on its flexibility, availability and security. Since that the web-based systems should have a special way to design the system and implement it. Now a day, the Internet Banking System is widely used and the banks look to provide the best quality system with increased availability, fast response, secure and safety to use.

Uppal. R. K., Bishnupriya Mishra, (2011) have studied “Excellency in banking services - A new road map for banks in the emerging new competition” The present study analyzes the widening gap between desirability and availability regarding reliability, accuracy, confidentiality, flexibility, e-channels, high attention to customers, low service charges and overall satisfaction of the customers in three bank groups i.e. public sector banks, Indian private sector banks and foreign banks. The survey was conducted in Chandigarh in the month of October, 2008. Three banks have been selected one each from three bank groups; PNB from public sector banks, HDFC bank from Indian Private Sector banks and Amro bank from foreign banks have been taken for consideration. On the basis of five point Likert type scale, survey concludes that desirability regarding all the parameters is very high as compared to availability of banking services. And on the basis of this empirical survey, study recommends some measures to bridge this gap.

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between the D/A of service quality parameters in the banking sector in the emerging competition\(^{67}\).

**Koskosas I.,** (2011) in his study *“The Pros and Cons of Internet Banking: a Short Review”* has stated that Bank fees often strike fear in the heart of the average banking customer. According to a survey by Bank-rate, a company that reports on banks and banking, customers continues to get smashed with higher fees, ranging from ATM charges to minimum-balance fees. In addition, some customers are even charged a commission fee just to speak to a real live bank teller! In a recent checking account pricing study, it was found that interest-bearing checking account customers are charged the worst. This review in internet banking seeks to show an alternative to banking through “bricks and mortar” and provides an understanding of the pros and cons of going online. Many traditional banks offer some online services, but the very cheapest choices some will find are internet only banks, which operate specifically online. Customers can get the same services online that are used to from traditional banks, such as checking and savings accounts, CDs, and other financial products and services. Those who are interested in paying lower fees for better customer service, they should investigate internet banking\(^{68}\).

**Muhammad Shakil Ahmad, Shahid Rashid, Muhammad Tahir-Masood, Ehtesham Ul Mujeeb,** (2011) has made a study on *“E-Banking: A Case Study of Askari Commercial Bank Pakistan”* This paper has covered the operational issues related to e-banking as well as customer’s perception on usage of e-banking a case study of Askari Bank, Pakistan. 40 staff members and four customers are selected as sample for this study. Both qualitative and quantitative methods are used to present the results.

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\(^{68}\) Koskosas i., “The Pros And Cons Of Internet Banking: A Short Review”, Business Excellence And Management, Volume 1 Issue 1 / December 2011
Descriptive statistics is applied to describe the demographic variables while for operational problems correlation was used. Finally cross case analysis present customers’ perception about e-banking practices. Analysis shows that customers are not ready to adopt new technology and that is why their satisfaction level with e-banking is low. Internet speed and government policies are not supportive for e-banking in Pakistan. Due to lack of trust on technology and low computer literacy rate, customers hesitate to adopt new technology. In order to promote IT culture in Pakistan, government has to reduce the internet rate. To promote the benefits of e-banking on media so that more user get facilitated from e-banking services.

R. K. Uppal, (2011) has studied on “Internet banking in India: Emerging risks and new Dimensions”. ‘Internet 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 Internet banking in Indian banking industry. Time period taken for study is 2000-01 to 2006-07 because this period is the eye-witness of infant condition of IT and during the same period IT became mature. On the basis of analysis, the paper concludes that the private sector banks are on the top in providing the I-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 I-banking to customers as well as to bankers and suggests some strategies with their possible solutions like to spread awareness regarding I-banking and to increase its area and scope to enhance I-banking services in India, particularly in rural and semi-urban areas.

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Ruby Shukla, Pankaj Shukla, (2011) have made a study on “E-Banking: Problems and Prospects”. The e-banking constitutes an electronic alternative network of payments and benefit of services. The need of creation of electronic alternative channels has been distinguished well in advance by the foreign banking organizations, which relied mainly on the outburst that was observed in the use of internet. The benefits are many, both for the customers and for the banks. The banks that are activated in the Internet are susceptible mainly to the systematic, law part and to the reputational risk and the customers of the electronic banking channel are puzzled concerning the subject of safety of their transactions and personal data. The aim of this report is, not only to analyze the meaning of electronic banking and to present all the alternative providing banking service networks, but also to focus on the advantages and on the risks that the growth of electronic banking has brought about.

Rahmath Safeena, Hema Date and Abdullah Kammani, (2011) have made a study on “Internet Banking Adoption in an Emerging Economy: Indian Consumer’s Perspective”. Information technology Services are considered as the key driver for the changes taking place around the world. Internet banking (IB) is the latest and most innovative service and is the new trend among the consumers. This study determines the factors influencing the consumer’s adoption of internet banking in India and hence investigates the influence of perceived usefulness, perceived ease of use and perceived risk on the use of IB. It is an essential part of a bank’s strategic formulation process in an emerging economy like India. Survey based questionnaire design with empirical test was carried out. The results have supported the hypothesis.

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72 Rahmath Safeena, Hema Date and Abdullah Kammani, Internet Banking Adoption in an Emerging Economy: Indian Consumer’s Perspective, National Institute of Industrial Engineering (NITIE), Mumbai, India, International Arab Journal of e Technology, Vol. 2, No. 1, January 2011
M.L.Kulthon Kasemsan and Nantana Hunngam, (2011) have studied on “Internet Banking Security Guideline Model for Banking in Thailand”. The purpose of this research is to study the Internet banking security guideline model for banking business in Thailand. At the present, the uses of the Internet have grown rapidly, but there are not many customers who use the Internet banking services because they do not trust the bank security systems. As a result, the study of the Internet banking security guideline model and tools development as well as information technology were conducted to ensure the security of the Internet banking services by using the concept of reliability, innovation adoption theory, the quality of the Internet connection and e-commerce law. The results of the research showed that the customers paid attention to the security, risk awareness, ease of use, and quality of Internet connection, respectively. Furthermore, it can also be concluded that a comparative study between the Internet banking and mobile banking should be studied as well as the study of social factors, and security factors to ensure the security in order to meet with the customers’ needs73.

DR. K.Krishnakumar; V.Selvam, (2011) have made a study on the title “An Empirical Study On Factors Influencing E- Banking Services: With Special Reference To ICICI Bank In Gobichettipalayam Town” This study has made “an empirical study on factors influencing the e-banking services: with special reference to ICICI bank in Gobichettipalayam town”. The main objective of this study is to identify the factors which are influencing the customers’ to open account with ICICI Bank and the problems faced by the customers’ while using E-banking74.

74 Dr. K.Krishnakumar; V.Selvam, An Empirical Study On Factors Influencing E- Banking Services: With Special Reference To Icici Bank In Gobichettipalayam Town, International Journal of Multidisciplinary Research Vol.1 Issue 6, October 2011, ISSN 2231 5780, page131-146
In the Banking Industry, it has been in the form of online banking, which is now replacing the traditional banking practice. Online banking has a lot of benefits which add value to customers’ satisfaction in terms of better quality of service offerings and at the same time enable the banks gain more competitive advantage over other competitors. There are some associated risks identified in the study that seem to hinder the success of e-banking services and thus constitute major concern to both financial institutions and customers. This paper therefore, examines, if customers’ choice of banks is influenced by the quality of e–banking services provided. Stratified sampling was used; while the survey instrument was a developed Questionnaire comprising open ended and Likert type of questions.

Vijay M. Kumbhar, (2011) has studied on “Factors Affecting the Customer Satisfaction in E-Banking: Some Evidences from Indian Banks”. This study evaluates major factors (i.e. service quality, brand perception and perceived value) affecting the customers’ satisfaction in e-banking service settings. This study also evaluates the influence of service quality on brand perception, perceived value and satisfaction in E-banking. Required data was collected through customers’ survey. The result indicates that, Perceived Value, Brand Perception, Cost Effectiveness, Easy to Use, Convenience, Problem Handling, Security/Assurance and Responsiveness are important factors in customers satisfaction in e-banking. It explains 48.30 per cent of variance. Contact Facilities, System Availability, Fulfillment, Efficiency and Compensation are comparatively less important because these dimensions explain 21.70 percent of variance.
in customers’ satisfaction. Security/Assurance, Responsiveness, Easy to Use, Cost Effectiveness and Compensation are predictors of brand perception in e-banking. Fulfillment, Efficiency, Security/Assurance, Responsiveness, Convenience, Cost Effectiveness, Problem Handling and Compensation are predictors of perceived value in e-banking.

Alhaj Abubakar Aliyu, Sayf M.D Younus, Rosmaini Bin HJ Tasmin, (2012) have made a study entitled “An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors. Case of Nigeria” This paper investigates the factors that influence the consumer adoption of Electronic banking in Nigeria and found that there is a need to conduct research on Electronic banking adoption behaviour. This study examines the relationship between Electronic banking adoption and the determining factors for critical success of Electronic Banking in Nigeria. Hence, the results show that the relevant factors that determined the adoption of Electronic banking in Nigeria include the level of its six factors, namely awareness, ease of use, security, cost, reluctance to change and accessibility. The results of this study show that four factors examined are significantly important to the adoption of Internet banking in Nigeria. However, perceived ease of use and reluctant to change are found to be insignificant in determining its adoption. This study provides insightful understanding of academic staff and non academic staff perception about Electronic banking adoption in their banking transactions. Banks and other private sectors in Nigeria, which are interested in promoting Electronic Banking, might find these findings helpful in guiding their efforts.

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Kumbhar, V.M., (2012) has studied on “Reliability Of “E-bank qual” Scale: Retesting In Internet Banking Service Settings”. The purpose of this study was to test reliability and validity of E-Bank Qual scale. Basically this scale was developed for the measurement of service quality and customer satisfaction in e-banking. In the present study, the author has conducted a survey of internet banking users and examined the reliability and the validity of E-Bank Qual scale. This scale was tested using Cronbach’s alpha reliability test which is a well-known test. Result of the reliability and validity test shows that System Availability, e-fulfillment, Accuracy, Efficiency, Security, Responsiveness, Easy to use, Convenience, Cost Effectiveness, Problem Handling, Compensation, Contact, Brand perception and Perceived value are the most important dimensions of E-Bank Qual Scale and it is reliable and valid for its further use.

Komal, Vandna Rani, (2012) have studied on “Progress of Banking in India: Customers’ Perspectives”. The present paper is concerned with the various ways of doing banking electronically. This paper has been divided into four sections dealing with four aspects of E-banking i.e. ATM, Internet banking, Mobile banking and Credit cards. This paper is basically concerned with the customer aspect of banking searching for customer satisfaction level. This is a comparative study of Public sector banks, Private sector Indian banks and Private sector foreign banks.

Muneer Abbad, Juma’h M. Abed, Mustafa Abbad, (2012) have studied on “The Development of E-Banking in Developing Countries in the Middle East” The purpose of this research is to explore current developments in the field of e-banking in Jordan, as a representation of similar developing countries in the Middle East.

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79. Dr. Komal, Dr. Vandna Rani, Progress Of Banking In India: Customers’ Perspectives, Business Intelligence Journal - January, 2012 Vol.5 No.1.
Jordanian commercial banks provide e-banking services for both individuals and companies. The aim of this research was to investigate which online e-banking services are most in demand in the banks in the study sample, and to explore the most influential variables which influenced customer demand for online banking services. The findings are that the most demanded services are requested for balance inquiries, bank statements, cheque books, payment of bills, transfers from one account to another, telephone banking, requests for interest rates, and requests for currency rates and money wiring (internal and external). Furthermore, the variables most influencing customer demand for these services are the diversity of online banking services, and their relative ease of use. Other variables are the level of education of customers, as well as their perceptions of the level of risk and the volume of costs.

Usha N. Patil, (2012) has studied on “Internet Banking in India: Risk Analysis and Adoption in an Emerging Economy” Internet banking allows customers to conduct financial transactions on a secure website operated by their retail or Virtual bank, credit union or building society. Information technology Services is considered as the key driver for the changes taking place around the world. Internet banking (IB) is the latest and most innovative service and is the new trend among the consumers.

Gajanan T. Waghmare, (2012) has studied on “Present Scenario and Future Prospects of E-Banking in Indian Banking Sector”. One of the most important areas of banking where Information Technology has a positive influence is on substitutes for traditional funds movement services. With the advent of online banking, electronic funds transfer and other similar products & services for funds transfer within a quick time

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80 MuneerAbbad, Jumah M. Abed, Mustafa Abbad, The Development of E-Banking in Developing Countries in the Middle East, Journal of Finance, Accounting and Management, 3(2), 107-123 July 2012.
81 DR. USHA N. PATIL, Internet Banking In India: Risk Analysis And Adoption In An Emerging Economy, Indian Streams Research Journal, G.S. Gawande College Unmarkhed, Dist- Yavatmal ( M. S.), Vol.2, Issue.III/April; 12pp.1-4
which was impossible a few years ago. With networking and inter connection, new problems are taking place related to security, privacy and confidentiality to e-banking transactions. On Conclusion, the banking sector have a need to prepare a new business model by management and customer services, satisfaction with a variety of products, services and controlled cost to stay in the long run\textsuperscript{82}.

Zhengwei Ma, (2012) has studied on “Factors Affect the Customer Satisfaction of Internet Banking: an Empirical Study in China”. The purpose of the paper is to analyze factors of customer service quality that could influence internet banking customer satisfaction in the Chinese commercial banking sector. Moreover, the paper also tries to explain the relationship between customer service quality and customer satisfaction, and to find some major facts for keeping high level internet banking customer satisfaction. Finally, it is observed that privacy, reputation and price are the key factors that affect customer satisfaction in the internet banking service\textsuperscript{83}.

Majid Karimzadeh, Dastgir Alam, (2012) have studied on “Changing Indian Banking Strategies for Transformation”. The Reserve Bank has played a pivotal role in this process of transformation of the banking sector with the use of IT. As the central bank, the Reserve Bank has strived to create a conducive environment for promoting technological adoption and encompassing the financial sector. Moreover, being an important institution in the financial sector, it too has undergone the process of technological change. Finally, the Reserve Bank has endeavored to streamline technological changes in a manner that would help to enhance the inclusiveness of the banking sector\textsuperscript{84}.

Kamal K. Gupta, Dr. Ipshita Bansal, (2012) have studied on “Development of an Instrument to Measure Internet Banking Service Quality in India”. This paper attempts to develop a reliable and valid instrument of measuring Internet banking service quality in India, and also analyses the impact of Internet banking service quality dimensions on the Overall Internet Banking Service Quality and customer satisfaction. A sample of 1350 Internet banking customers of private sector, public sector and foreign banks was surveyed in the Delhi Metropolitan Area. Results of Exploratory Factor Analysis (EFA) revealed five dimensions - Security/Privacy, Reliability, Efficiency, Responsiveness, and Site Aesthetics. This five dimensional model arrived through EFA was validated through a Confirmatory Factor Analysis (CFA). The proposed research model shows acceptable fit indices. Impact of these dimensions on the Overall Internet Banking Service Quality and customer satisfaction are analyzed using multiple regression technique. Findings indicate that all dimensions carry significant impact on the Overall Internet Banking Service Quality perceptions and customer satisfaction. However, Security/Privacy and Efficiency dimensions carry the maximum impact on the Overall Internet Banking Service Quality and satisfaction respectively.\footnote{Development Of An Instrument To Measure Internet Banking Service Quality In India, Kamal K. Gupta, Dr. Ipshita Bansal, Researchers World-Journal of Arts, Science & Commerce, Vol.-iii, Issue 2(2), April 2012.}

Ranjit Kumar Sahoo, Sukanta Chandra Swain, (2012) have made a study entitled “Study of Perceived Value and Performance of E-Banking in India with a Special Reference to Punjab National Bank”. Purpose of this paper is to find out whether e-banking is performing as per the perception amongst the customers and the employees or is there a gap between the perceived value and the performance. In fact, e-banking promises a lot to serve flawlessly in no times. However, what the reality is a matter to be substantiated. The study for this is mostly based on the primary data collected from the customers and employees of Punjab National Bank of India. It is
recommended that instructions to use e-banking services should be made available. Banks should take initiation to bring awareness among the masses to trust the bank services and let them make sure that these services are already tested and the best.

**Raies Ahmad Mir, RifatAra and Altaf Dar**, (2013) in their study titled, “Customer Attitude and Factors Influencing Users Acceptance of E-Banking in J&K”, the main objectives of the study are 1) To incorporate Technology Acceptance Model (TAM) in the analysis of the factors influencing users acceptance of E-Banking in J&K. 2) To study the influence of TAM model on Perceived usefulness (PU) Perceived ease of use (PEOU) Perceived credibility (PC) as well as Customer attitude (CA) as the fundamental determinants. This paper investigates the factors which are affecting the acceptance of e-banking services among the customers. The conceptualization was then tested with primary quantitative survey data collected from students studying in different colleges/Universities of Kashmir Division of state J&K. Correlation and regression analysis and Sign two-tailed were used to test the key hypothesis derived from literature.

**Maduku**, (2013) made a study titled, “Predicting retail banking customers’ attitude towards Internet banking services in South Africa”. This paper investigates the predicatators of retail banking customers’ attitude towards the adoption of Internet banking services in South Africa. This study extended the Technology Acceptance Model (TAM) by including trust, subjective norm and demographic variables, and presents an empirical validation in South Africa. The results suggest that perceived usefulness, perceived ease

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of use and trust have significant positive relationships with attitude, while subjective norm has a relationship with attitude, albeit a moderate relationship. Consumers’ trust of the Internet banking system emerged as the strongest predictor of their attitude, while demographic variables were found to be weak and poor predictors of customers’ attitude. The managerial implications of these findings on efforts aimed at increasing the adoption of Internet banking use among retail banking customers in South Africa and others operating in similar contexts are noted in this paper. This research also adds value to existing studies of Internet banking in South Africa. Moreover, it makes a contribution to the current literature on customers’ attitude towards Internet banking services, which is largely under-researched in South Africa\textsuperscript{88}.

**Ms. Fozia**, (2013) has made “*A Comparative Study of Customer Perception toward E-banking Services Provided By Selected Private & Public Sector Bank in India*”. The purpose of this paper is to determine the customer’s perception toward the e-banking services. The result of the study clearly shows that different age group of customers and different occupation group of customers have different perception toward the e-banking services. The results also propose that demographic factors impact significantly internet banking behaviour, specifically, occupation and age. Finally, this paper suggests that an understanding about the customer’s perception regarding the e-banking services of public and private banks it will help to the banker to understand the customers need in better way\textsuperscript{89}.


Komwut Unyathanakorn and Nopadol Rompho, (2014) in their study entitled, “Factors Affecting Customer Satisfaction in Online Banking Service”, have observed that the Internet has become a vital part of people’s daily lives. It has changed consumer behaviour in many ways. This study focuses on factors that affect customer satisfaction with the use of online banking services provided by commercial banks. The American Customer Satisfaction Index Model and the Thailand Customer Satisfaction Index Model are applied to evaluate customer satisfaction. The findings can be used as guidelines to improve the quality of the online banking system.90

Archana Patil, (2014) made a study titled, “Customer Satisfaction of Online Banking - A Comparative Study in public sector bank and private sector bank w.r.t. SBI and ICICI in Pune (Chinchwad) City”, this study aims at evaluating services quality of online banking in Pune city, one of the fast growing cities of Western India. This paper mainly compares, online banking services of SBI Bank one of the leading public sector banks and ICICI bank, a leading private sector bank. The paper presents the data, drawn from a survey of Internet banking consumers from two leading banks i.e. SBI and ICICI and develops a functional model for maximizing value to the consumers. Data was analysed statistically to investigate the service quality of internet banking. It is found that as ICICI is a pioneer bank in India into online banking, it excels into the quality dimensions as compared to SBI bank; however in the last few years, SBI came out as a leading public sector bank, providing internet services successfully.91

S. Fatemeh Sakhaei, Ahmad J. Afshari and Ezzatollah Esmaili, (2014) in their study entitled, “The Impact of Service Quality on Customer Satisfaction in Internet Banking”, this paper presents a study to investigate service quality indexes in Internet Banking. The purpose of this research is to understand the impact of service quality factors of Internet Banking on customer satisfaction in Iran. To study the relation between service quality and customer satisfaction, first a hybrid model based on the previous works has been proposed. Six service quality dimensions namely reliability, efficiency, responsiveness, fulfillment, security / privacy and website design have been established based on the literature review. This study evaluated the influence of service quality on customer satisfaction in Internet Banking. The study shows that the Six service quality dimensions have meaningful relationship with customer satisfaction in Internet Banking and reliability has most relation and website design has least relation to customer satisfaction\textsuperscript{92}.

Martin Anane and Felix Oppong Asamoah, (2015) in their study entitled, “Customers’ Satisfaction and Attitude towards Electronic Banking Services in Ghana: A Case Study of Selected Banks in Kumasi Metropolis”, examines customers’ satisfaction and attitude towards electronic banking services in selected banks in the Kumasi Metropolis of Ghana. From the survey findings, the result indicated that 189 respondents representing 94.5% regularly used e-banking to transact business with their various banks. The study findings indicated that customers’ anticipations before the use of e-banking have been realised with current services as 152 (76%) of the respondents strongly agree and 48 (24%) respondents agree that e-banking services charges being considered as moderate fee, 82 (41%) respondents strongly disagree with this assertion.

16 (8%) of the respondents disagree with the assertion, 80 (40%) respondents agree and 22 (11%) respondents strongly agree that the e-banking service charges were moderate. All the respondents have complete satisfaction with the use of e-banking. The study concludes that the use of e-banking services have increased banking service quality and established customers’ satisfaction93.

Pallavi Mehta, (2015) has made a study titled, “Online Banking Services and Customer Satisfaction: A Comparative Study of Public and Private Banks in Udaipur City”, this paper tries to find the usage frequency of customers and their satisfaction level with respect to online banking services offered by public and private banks in Udaipur city. It is found that the customers of both public and private banks are satisfied with the services provided by the banks and the preference to use online banking services does not depend upon the profession of the consumers. The male and female consumers are both nowadays using online banking services for their convenience and the trend of online shopping, fund transfer, deposits etc. is increasing at a fast pace94.

D.N.V.Krishna Reddy and M.Sudhir Reddy (2015) in their study entitled, “A Study on Customer’s Perception And Satisfaction Towards Electronic Banking In Khammam District”, has stated that today the sophisticated Information technology has taken important place in the future development of financial services, especially banking sector evolution is affected more than any other financial provider groups. Increased use of mobile services and use of internet as a new distribution channel for banking transactions and international trading requires more attention towards e-banking security

against fraudulent activities. E-Banking has a lot of benefits which add value to enhance customers’ satisfaction in terms of better quality of service offerings and simultaneously enable the banks gain more competitive advantage over other competitors. This paper contains consumer perception toward the convenience and willingness to use E-banking services is identified and measured. Customer satisfaction level towards the E-Banking has been identified.

Adelowo Oluremi Titilope, (2015) has made a study titled, “The Perception and Use of Electronic Banking among Business Executives in Lagos State, Nigeria”. The study focused on perception and use of e-banking services among business executives in Ikeja Local Government Area, Lagos, Nigeria. The study aimed at finding out what influence the use of e-banking services by business executives. The study made use of cross-sectional survey design. The study area was stratified into communities and organizations sampled randomly as possible for the study. Findings revealed that ATM is the most used e-banking service while International Card Scheme is the least used. Gender and level of education are the two demographic variables that influenced business executives the most in their use of e-banking services. There are generally both positive and negative reviews about service quality and security/privacy of the e-banking services. The study revealed that business executives believe that the e-banking services were easy to use, useful and convenient. The study recommended that security/privacy and service quality of e-banking services/platforms should be improved and that effort should be directed to improving users’ confidence in the use of the platform.

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Darmesh Krishanan, Aye Aye Khin and Kevin Low Lock Teng, (2015) has made a study entitled, “Attitude towards Using Mobile Banking in Malaysia: A Conceptual Framework”. Despite the fact that various researches have been carried out on mobile banking adoption only a small quantity of studies were conducted in Malaysia. As a result, literature on the key determinants of the intention to adopt mobile banking within Malaysia is insufficient. Therefore, there is a need to comprehend the factors influencing the intention to adopt mobile banking services in the Malaysian market. This research fills the gap by integrating Technology Acceptance Model (TAM) with perceived risk and perceived cost. The main objective of the study is to determine the factors that influence the intention to adopt mobile banking services. This conceptual study reviews the past literatures and proposes eight research hypotheses interlinking eight variables that are Usefulness, Easefulness, Relative advantage, and Perceived risk, Attitude towards Using, Perceived Cost, Age, Education and Intention to Adopt Mobile Banking. The paper concludes with a discussion on the future of mobile banking in Malaysia.

P. Raja and J. Selvakumari, (2015) have made a study entitled, “A Study on the Satisfaction Level of Internet Banking”. This paper tries to analyze the satisfaction level of internet banking users of Dindigul Taluk of Tamil Nadu. Apart from analyzing the satisfaction level of the users, the other objectives of the paper are to find out their awareness level towards various services of internet banking and study the problems faced by them in availing this service. It is found from the study that internet Banking has pervaded throughout the life. The middle aged people are much interested in using internet banking. The banks are taking steps to increase its net banking utilization among

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other people too. The users have started using this facility just recently and for less than 5 years. As regards storage of password, 98.9 percent of the respondents have revealed the places when they have stored their passwords. It may be a due hint to the password thieves.  

M. Abdul Hakkeem and Y. Moydheen Sha, (2015) in their study entitled, “An Empirical Study towards Customer Satisfaction in Internet Banking services with special reference to Tiruchirappalli District”, have stated that Electronic banking or e-banking is automated delivery of new and traditional banking products and services directly to the customer through electronic communication like computer, ATMs, and internet websites.

The customer satisfaction level based on the analysis of data relating to 200 respondents indicates that there is a significant correlation between age and occupation with other factors. In the analysis it was observed that particular age group has used these services; the satisfaction of the customer majorly influenced the convenience, awareness, and responsiveness. In the present technology society, most of the banking customers prefer and switch to e-banking facilities. So the banker may improve their services, loyalty to customers and their retention by increasing awareness of other age groups and concentrating on the factors contributing to customer satisfaction.

Garima Srivastav and Arun Mittal, (2016) have made a study entitled, “Impact of Internet Banking on Customer Satisfaction in Private and Public Sector Banks”. This is an exploratory research paper which discussed the impact of various Internet banking (IB) services on the overall satisfaction levels of the banking customers. Data were

collected from 500 respondents (250 from private sector banks and 250 from public sector banks) in India (Delhi-NCR), constituting a 65% response rate. The application of this analysis revealed that customers wanted the private sector banks to improve upon the features like quality of service, frequency of reminder given for password change, safety, privacy of ID and password, and proper entering of the details in the bank registers. In case of the public sector banks, customers had different sets of concerns - like they were much worried about the lack of development in rules and regulation of E-banking as well as the poor regulatory framework in Internet banking. However, security issues aroused a common concern from the customers in case of both sectors of banks. The results also showed that the customers were ready to adopt Internet banking provided they were given necessary guidelines and constant built up of trust\textsuperscript{100}.

P. Jayakumar and M. Vincent Sahayaraj, (2016) in their study entitled, “A Study on Customer Satisfaction of Modern Banking System”, have stated that the purpose of current study is to understand as to what all factors make a customer a satisfied customer. Both private and public banks have been considered separately in order to get better and clear understanding. The overall study shows that the customers are willing to use the modern services like the online banking, ATM etc. they prefer the facility provided by the modern banking but some factors like Responsiveness and reliability have effect on their level of satisfaction. The satisfaction level of customers increases towards the use of modern banking services if the bank provides more reliable services with quality they promised and on time. SBI has been successful in implementing tangible factors like modern equipment, infrastructural facilities, quality of materials used etc. They have been successful in achieving a satisfying relationship with

customers. Most of the respondents felt that the employees of the SBI are very keen to satisfy their customers\textsuperscript{101}.

2.2 CONCLUSION

In all above review of literature various reviews have been made by many researchers. They have made evaluation of the performance of commercial banks. The earlier studies differed from one another in the selection of period, selection of banks, selection of indicators and selection of statistical tools and techniques. In contrast, the present study focuses its attentions on the impact of reforms on Indian banking system in post liberalization era. An executive literature review was made on research made in the area of e-banking, banking services, modern technology, technology adoption, customer perception, attitude, personality, behavior and satisfaction. It is found that there is customer perception, which is vital in making a research on IBS. Hence, this study aims to cover the customer perception on the internet banking service offered by the selected banks.

2.3 RESEARCH GAP

It can be understood from the review that the research work tries to fill a few gaps in the subject of the study. The above studies throw light on the impact of technological innovations and the revolution made by internet banking. These studies explore the need, impact and the problems associated with the various innovations taking place in the banking sector. Yet only very few attempts have been made to examine the attitude and the perceptions of the customers with regard to the role of internet banking in the growth and development of banks. These studies failed to analyze the relevant issues expasised the customers in making use of internet banking. The present study

attempts to bridge the gap by analyzing the customers’ perception and their level of satisfaction on internet banking services of the banks. Some research studies have been undertaken on consumer attitudes towards Internet banking. Yet these studies have been taken up with educated people, government employees, professionals, Businessman, and students in other districts. Hence the researcher has conducted the study in Tirunelveli district with customers of all categories irrespective of educational status and employment. The technology, banking rules and regulations are often changed with regard to operation of Internet banking.

Further, there have been many studies published in many foreign countries on internet banking based on customers’ perception, but the number of such studies on this area in Indian context is meager. Therefore, this study is of significance to bridge this gap. The present study will be used to identify the Customers’ Perception on Internet Banking in Tirunelveli District.