CHAPTER – II
CONCEPTS AND REVIEW OF LITERATURE

This chapter deals with several important concepts related literature and theoretical information which have been formulated for the support of the study.

Technology has become the engine for triggering rapid change. It is no longer considered merely for transaction processing or confined to management information systems. It implies the integration of information system with the communication technology and of innovative application to product manufacturing, design and control. With the development of technology, the world has become a global village and ushered in a revolution in the banking industry. R.C. Dangwal, Kailash Sakalani and Swate Anand, 2010.1

“As per the statistics, India has experienced a high growth rate in the last four years, the consumers’ spending has claimed up to 75 % as a result the Banking Industry is expected to grow further in the future days. (Radhakrishnan, 2008)2

Van Hoeck, (2001)3. With cyber cafes and kiosks springing up in different cities access to the Net is going to be easy. Internet banking (also referred as e banking) is the latest in this series of technological wonders in the recent past involving use of Internet for delivery of banking products & services. E-business has been continuously growing as a new industry during the last decade

In the wake of the internet revolution, electronic commerce emerged and allowed businesses to interact more effectively with their customers and other corporations. In this proliferated information age, banking industry has been using this new communication channel to reach its varieties of customers.

1 Dangwal R.C., Kailash Sakalani and Swate Anand, the upcoming Technology and the associated innovations, by Pg.26, Professional banker. January 2010. The Icfai University Press.
Electronic commerce (e-commerce) has become a very important technological advancement for businesses by changing business practices. Brodie et al (2007). Internet banking is changing the banking industry and is having the major effects on banking relationships. Banking is now no longer confined to the branches where one has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts. E-banking technologies have proliferated in recent years, and the availability of a wide range of products has led to increasing adoption among consumers. These technologies include direct deposit, computer banking, stored value cards, and debit cards Servon and Kaestner, (2008). The terms ‘PC banking’, ‘online banking’, ‘internet banking’, ‘telephone banking’ or ‘mobile banking’ refer to a number of ways in which customers can access their banks without having to be physically present at the bank branch. E-banking may be understood as a term that covers all these ways of banking business electronically Leow and Bee, (1999).

Today banks have centralized operations and are increasingly moving towards core banking solutions network-based computing, new delivery channels, such as networked ATMs, internet banking, smartcards based products etc. Filomina P.George, Dr.S.Mercia Selva Malar, Mr. Sudheendran M. 2009. Internet banking (IB) is a radical technological innovation with potential to change the structure and nature of banking. To sustain business competitiveness, more and more banks are transforming from their traditional

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7 Filomina P.George, Dr.S.Mercia selva malar, M.Sudheendran, Technology enhanced service – scape commercial banks in India, Pg.39, August 2009, professional banker. The Icfai University press.]
approach of “bricks and mortar” into a “clicks and mortar” one under the recent emergence of electronic commerce and business. Chau, P & Lai.V, 2003\(^8\).

**A.Subbiah & S Jeyakumar 2008\(^9\)** Core banking is a newly developed concept adopted by banks. In future, the smooth functioning of banks will depend on the pace of technological up-gradation. The Indian banking system is one of the largest, if not the largest, in the world today. The branch network is extensive and these branches are now spread out into the remote corners of our country. Information technology has immense potential for widespread branch banking. The benefits of core banking are reduced transaction costs, increased customer satisfaction, rapid implementation of e-banking services, management of ever-increasing transaction volume and better security.

The customer is directly benefited by way of happy banking experience. Core banking is a new trend which has increased the speed of banking transactions. Rapid improvement in technology, faster communication facilities and availability of high computer power, net banking and core banking has resulted in a revolution in the banking industry world-wide.

**Miranda-Petronella, (2009)\(^10\)** E-banking is the first of those banking services that really economize time, because it allows to the user to accomplish from behind the computer many operations in the bank account, represents the computational solution that allows to the holder to have access at distance at the capitals from his account, purposing to obtain information about his account situation and the situation of the effected operations, of the payment and of the capitals transfers over a beneficiary, by a computational application, of a authentication method and of a communicational average, the **e-banking** is

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absolutely necessary in the integration conditions. Technology enhances Commercial Bank’s ability to deliver financial services in new and innovative ways.

One Can View
- Own accounts and related ones
- Credit and Debit cards
- Fund’s Time deposit, Savings certificates
- Loans
- Treasury bond
- Latest transactions of current month
- View, print and save monthly statements (since year 2004)

One can Transfer
- Between accounts
- To another account (Digital signature required)
- To credit card
- To another credit card (Digital Signature required)
- To any charity

One can Request
- Cheque book
- To change the mailing address
- To inquire or complain,
- To add related account (Power of attorney, parent/child or account with different customer number)
- To manage supplementary cards,
- To dispute credit card,
- To make External transfer (Digital signature required) & Digital Signature registration
Also, one can
- Stop credit card
- Subscribe in Alerts service (SMS /E mail)

Consumers are attracted to these technologies because of convenience, increasing ease of use, and some instances cost saving Anguelov et al. (2004)\(^{11}\). All business, including small and medium scale industries, no matter their geographical locations, are all beneficiaries of e-banking. It encompasses all kinds of commercial transaction that is conducted on an electronic medium, mostly through the internet.

E-banking links business to customers no matter their geographical location. It allows companies to make new business contacts from different global business alliances, test new products and services, and make market research and other enquiries all at a minimum cost both financial and otherwise (Shin, 2008).\(^{12}\)

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

Customer satisfaction, customer retention and new customer acquisition are the key factors in i-banking system. This becomes more important since the acquisition costs in online banking exceed that of traditional off line business by 20%-40% (Reibstein, 2002)\(^{13}\). The i-banking, thus now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services (Arunachalam and Sivasubramanian, 2007)\(^{14}\) business, including small and medium scale

industries, no matter their geographical locations, are all beneficiaries of e-banking. It encompasses all kinds of commercial transaction that is conducted on an electronic medium, mostly through the internet.

Cristina, Beatrice, (2008)\textsuperscript{15} The evolution of electronic banking(e-banking) started with the use of automatic teller machines (ATMs) and has included telephone banking, direct bill payment, electronic fund transfer and online banking.

**ELECTRONIC BANKING (E-BANKING)**

E-banking or electronic banking refers to conducting banking activities with the help of information technology and computers. E-banking is a mix of services which include Internet banking, Mobile banking, ATM kiosks, Fund Transfer System, Real Time Gross Settlement (payment & settlement system), Credit/Debit/Smart/Kisan Cards, Cash management services, and Data warehousing, Operational data for MIS and Customer Relationship Management. Latest innovations in technology like broadband transmission, internet access via mobiles and WebTV will further provide impetus to digital revolution. Banks are scanning the image of a cheque which can be zapped to another bank, into the depository and back to customer’s bank. Banking transactions can be carried out 24 hours a day using these methods. In fact concept of Anytime, Anywhere banking is making it easy for customers to access their money more conveniently.

**INTERNET BANKING SERVICES**

Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank’s website, without the intervention or inconvenience

ANYWHERE BANKING

With expansion of technology, it is now possible to obtain financial details from the bank from remote locations. Withdrawals from other stations have been possible due to inter-station connectivity of ATM. The Rangarajan committee had also suggested the installation of ATM at non-branch location, Airports, Hotels, Railway stations, office computers, Remote banking is being further extended to the customer's office and home. Internet banking is a new delivery channel for banks in India. The i-banking channel is both an informative and a transactional medium. However, i-banking has not been popularly adopted in India as expected (Ravi et al., 2007). E-banking has been around for some time in the form of automated teller machine and telephone transactions. More recently, it has been transformed by the internet – a new delivery channel that is fast, convenient, available round the clock, and from whatever the customer's location (Saleh and Andrea, 2002). Electronic distribution channels provide alternatives for faster delivery of banking services to a wider range of customers (Kaleem and Ahmad, 2008). Most of the consumers who start banking online do it because they need to pay bills frequently and would like to do it with minimum effort. Besides that, people use the internet banking to keep an eye on their money matters, view their account balance and check receiving payments from other parties Kolodinsky, J.M., Hogarth, J.M. and Hilgert, M.A. (2004).

In addition to previous e-banking delivery systems, Automated Teller Machines (ATMs) and telephone transaction processing centres, online banking provides banks a new and more efficient electronic delivery tool (Costanzo, 2000).

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17 Saleh and Andrea 2002 challenges of the e-banking revolution, a quarterly magazine of international monetary fund (IMF), vol. 39,no.3,pp 34-56.
AUTOMATED TELLER MACHINES (ATMS)

The cash machine or automated teller machine (ATM) are self service vendor machine that help the banks to provide round the clock banking services to their customers at convenient places without visiting to the bank premises. They enable the banks to transact more business by offering various services in cost effective way on one side and to get more customer satisfaction on the other. To avail the ATM services customers are provided with ATM card, which is a small plastic card with magnetic strip, containing information about the name of bank, name of the customer, card number, validity period and signature panel. The magnetic strip contains information about the customer which enables the banks to verify the identity when the card is inserted at the slot provided in ATM. The following functions can be performed on ATM.

The use of paper cheques has been supplemented step-by-step with e-cheques (i.e., electronic images) allowing banks to have more storage capacity, reduce costs, and improve customer services (Rose and Hudgins, 2005). Banks have traditionally been in the forefront of harnessing technology to improve their products and services. They have over the time been using electronic and telecommunication networks for delivering a wide range of value added products and services. The range of services and products offered by different banks vary widely both in their contents and sophistication. E-banking provides enormous benefits to consumers in terms of the ease and cost of transactions Luis V. Casaló, Carlos Flavián, Miguel Guinalíu, (2008).

The relationship between digital capital of internet banking However, it can be thought of as a service that allows customers to use some types of computers to access account-specific information and possibly conduct transactions from a remote location – such as at home or at the workplace (Saleh and Andrea,

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The customer can never overspend because the system rejects any transaction which exceeds the balance in his account. The bank never faces a default because the amount spent is debited immediately from the customer’s account.

Rajesh Kumar Srivastava (2007) The growth in e-banking with the increase in the range of interface options available to access online banking solutions has resulted in a steady increase in the number of customers interacting through remote channels to a greater extent than before. In a climate of increasing online competition, banks that have chosen to retain extensive branch networks are re-aligning the roles of staff in these branches and moving towards a relationship-driven sales culture (Durkin, 2007). E-banking also can increase competition among banks, and allows banks to penetrate new markets and thus expand their geographical reach. Some even see e-banking as an opportunity for countries with underdeveloped financial systems to leapfrog into advanced stages. Customer in such countries can access services more easily from banks outside one’s own country through wireless communication systems, which are developing more rapidly than traditional ‘wired’ communication networks (Gao and Owolabi, 2008).

In contrast to traditional banking, i-banking involves non-human interactions between customers and online bank information system. Customer satisfaction, customer retention and new customer acquisition are the key factors in i-banking system. This becomes more important since the acquisition costs in online banking exceed that of traditional offline business by 20%–40% (Reibstein, 2002).

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24 Rajesh Kumar Srivastava (India), Innovative Marketing, Volume 3, Issue 4, 2007
CREDIT CARDS/DEBIT CARDS

Credit Card is a post paid card. The Credit Card holder is empowered to spend wherever and whenever he wants with his Credit Card within the limits fixed by his bank. Debit Card, on the other hand, is a prepaid card with some stored value. Every time a person uses this card, the Internet Banking house gets money transferred to its account from the bank of the buyer. The buyers account is debited with the exact amount of purchases. An individual has to open an account with the issuing bank which gives debit card with a Personal Identification Number (PIN). When he makes a purchase, he enters his PIN on shops PIN pad. When the card is slurped through the electronic terminal, it dials the acquiring bank system - either Master Card or VISA that validates the PIN and finds out from the issuing bank whether to accept or decline the transactions. The customer can never overspend because the system rejects any transaction which exceeds the balance in his account. The bank never faces a default because the amount spent is debited immediately from the customers’ account.

MOBILE BANKING

Mobile banking (also known as M-Banking, m-banking, SMS Banking etc.) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as a mobile phone. Mobile banking is a way for the customer to perform banking actions on his or her cell phone or other mobile device. It is a quite popular method of banking that fits in well with a busy, technologically oriented lifestyle. It might also be referred to as M-banking or SMS banking. The amount of banking you are able to do on your cell phone varies depending on the banking institution you use. Some banks offer only the option of text alerts, which are messages sent to your cell phone that alert you to activity on your account such as deposits, withdrawals, and ATM or credit card use. With the combination of two most recent technological advancements—internet and mobile phone, a new service (mobile data service) is thus enabled and the first such wireless internet commercial transaction is performed by the
banking industry (Barnes and Corbitt, 2003). It is believed that m-banking will provide another new channel for banking services, especially for certain remote areas where online internet is still unavailable. Strategic implications and customer perception of m-banking services are explored (Laukkanen and Lauronen, 2005) with a focus on the consumer value creation and a better understanding about the customer-perceived value of m-banking services.

From the bank viewpoint, adoption of Internet banking will lead to cost reduction and improved competitiveness. This service delivery channel is seen as powerful because it can retain current Internet-based customers who continue using banking services from any location. Moreover, the electronic service channel can also provide efficient services to customers via the mobile technology Prendergast G. and Marr N. (1994).

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

Diniz et al. (2005) propose and test a model of three dimensions to evaluate virtual business environments from the user’s point of view:

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functionality, security and usability. They select three banks in Brazil for IB services testing on the model’s dimensions

Diniz(1998)\(^{34}\) in his view states that Electronic banking encompasses a broad range of established and emerging technologies. Some are “front end” products and services that consumers opt for, such as ATM cards and computer banking; others are “back end” technologies used by financial institutions, merchants, and other service providers to process transactions, such as electronic check conversion. Some are tied to a consumer bank account; others are unrelated to a bank account but instead store monetary value in a database or directly on a card. It is the types of services through which bank customers can request information and carry out most retail banking services such as balance reporting, inter-account transfers, bill-payment, etc., via telecommunication network without leaving their home /organization. Amin.H. 2007.\(^{35}\)

Arasli, H., Mehtap-Smadi, S. and Katircioglu, S. T. (2005)\(^{36}\) Banks have realized that in order to remain competitive, they need to restructure their services to make use of rapid technology as well as to offer diverse service portfolio.

E-banking has emerged as a significant and rapidly growing component of the world economic exchange. Through e-banking the world economic exchange has been reduced to a tiny global village in terms of its information capacity and the resources it holds which can be accessed by anybody from anywhere in the globe (Hwang et al., 2007).\(^{37}\)

\(^{34}\) Diniz, E. (1998), Web banking in USA, Journal of Internet Banking and Commerce, vol. 3 (2),
Providing i-banking is increasingly becoming a ‘need to have’ than a ‘nice to have’ (M.S. Khan, S.S. Mahapatra and Sreekumar, 2009)\textsuperscript{38} service.

The i-banking, thus, now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services (Arunachalam and Sivasubramanian, 2007)\textsuperscript{39}. Internet banking is a new delivery channel for banks in India. The i-banking channel is both an informative and a transactional medium. However, i-banking has not been popularly adopted in India as expected (Ravi et al., 2007)\textsuperscript{40}.

**CUSTOMER SATISFACTION**

Customer satisfaction is a critical issue in the success of any business system, traditional or online. In a turbulent commercial environment in order to sustain the growth and market share, customer satisfaction is critical for establishing long term client relationship. (Peterson R.A. and et. al.(1997).\textsuperscript{41}

**SERVICE QUALITY DIMENSIONS**

In the view of changing scenario, the service quality dimensions have become vital. However among all, responsibility, reliability, easy use, accessibility, security, efficiency have vital bearing on the success of the e-banking. The research is the common method of measuring service quality. Service quality can thus be defined as the difference between customer expectation of service and the customer experience. If the expectations are


greater than performance, then the perceived quality is less than the satisfaction level and hence customer dissatisfaction occurs. (Olorurnirvo F)\textsuperscript{42}

Service differentiation is necessary for the growth and development of service businesses. (Thomas, Dan R.E.,1978)\textsuperscript{43} Today, the Internet has been believed to become a full-fledged delivery and distribution channel supporting for consumer-oriented applications aimed at effectively and efficiently providing financial products and services to customers in the banking sector (Pham, 2010)\textsuperscript{44}.

Additionally, internet banking offers the option to provide economic and convenient services without reducing the quality of services offered to customers (Akinci et al., 2004)\textsuperscript{45}. Service quality is one of the main factors determining the success/failure of electronic commerce. Therefore, customer perception and preferences of service quality have a significant impact on bank’s success. E-banking does not only encompass the way one shops over the internet, but also the ways one carries out banking transactions. This allowed customers, more independence in the choice on where and when to bank. It is an obligation for banks to apply better strict security levels due to the many kinds of threats that are recently identified with these alternative channels (Smith, 2006)\textsuperscript{46}.

Abha Chandra, Mrs.Vinitha Sharma,(2010)\textsuperscript{47} Privacy preserved e-society consists of three intangible factors firstly applications, which have data to share with authorized clients; secondly clients who want data that contains in

\textsuperscript{44} Pham, L. 2010. A conceptual framework for e-banking service quality in Vietnam. of Accepted to be published in The Business Studies Journal
\textsuperscript{47} Abha Chandra Mrs.Vinitha Sharma, Analytical Research on Indian Online Banking and Users’ Privacy January 2010 - Volume-2, Issue 2
the applications and finally the privacy control factor which is required to maintain records about the purposes. People now a day are more concerned about their personal information, which is supposed to be leaked out from the organizations to which they are trading online.

There are many types of banks in India, which provide net banking or online banking service to the consumers through Internet. The significant point to be noted with respect to these banks is to make their personal and financial information totally secure so that no unauthorized person or organization should acquire their data to mistreat over the Internet. An empirical study is conducted to evaluate the existence and format of privacy policies of different banks of India in conducting online banking through their websites.

**Abhav Jain B S Hundal, 2006**

Rapid changes in the financial services environment- increased competition by new players, product innovations, globalization and technological advancement— have led to a market situation where battle for customers has become intense. In order to rise up to the challenges, service providers are even more interested to enhance their understanding of consumer behavior patterns. This paper examines the forces that can act as barriers in mobile banking service adoption. A quantitative survey sheds more light on this research issue. The data was collected from a survey in the Northern region of India and includes 330 respondents.

**E. AbuShanab, J.M. Pearson,(2007)**

The purpose is to investigate the key determinants of the adoption of internet banking in Jordan. The paper also attempts to validate the appropriateness of the Unified Theory of Acceptance and Use of Technology (UTAUT) within the context of internet banking. The results of this study indicate that UTAUT provides a good foundation for future technology acceptance research. The three main predictors relevant to this study

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48 Abhay Jain B S Hundal Barriers In Mobile Banking Adoption In India. The IUP journal of Bank Management, August,2006, issue 3, pg 64-73

(performance expectancy, effort expectancy, and social influence) were significant and explained a significant amount of the variance in predicting a customer's intention to adopt internet banking. The results also indicate that gender moderated the relationships between the three independent variables and the dependent variable (behavioral intention).

**Adelowo Solomon Adepoju Mohammed Enagi Alhassan 2010**

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


explored the role of e-banking in e-democracy. With the development of asynchronous technologies and secured electronic transaction technologies, more banks and departments were using Internet for transactional and information medium. Initiatives such as E-SEVA and FSC's are the milestones towards achieving comprehensive e-governance.

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50 Adelowo Solomon Adepoju Mohammed Enagi AlhassanChallenges of Automated Teller Machine (ATM) Usage and Fraud Occurrences in Nigeria – A Case Study of Selected Banks in Minna Metropolis *Journal of Internet Banking and Commerce, August 2010, vol. 15, no.2*

Ahmad Zakaria Siam, (2006)\textsuperscript{52} This study aims at examining the effects of electronic banking on bank’s profitability in Jordan. How banking sector finds itself before a new fact imposed by technology revolution and digits to change their work mechanisms from traditional means to electronic means and the challenges banks face as a result. Furthermore, this study investigates the reasons behinds providing electronic banking services through internet, their impact on banking services in general and banks profitability in particular. Risks and challenges involved are discussed. The importance of this study and the factors that make it unique is that, it discusses solely the topic of the effects of electronic banking on banks profitability, while most of other studies discuss the topic in general term. The findings of the study are the impact of electronic banking on banks profitability will be feature of the short run due to the capital investment by the banks on infrastructure and training but will be positive on the long run.

Ahmed Audu, Sany Sanuri Mohd. (2010)\textsuperscript{53} This paper aims at investigating the relationship between the electronic banking facilities, customers employment sector and customers age group choice of banks. The results show that there is no significant relationship between electronic banking facilities and customers’ choice of banks. It was however found that there is significant relationship between customers’ employment sector and customers’ age-group on one hand and their choice of banks on the other hand. It was recommended that the management of Nigerian commercial banks should find the relevant factors that are considered important by customers of various age group to appropriately segmenting the target market.

\textsuperscript{52} Ahmad Zakaria Siam, Role of the Electronic Banking Services on the Profits of Jordanian Banks, American Journal of Applied Sciences 3 (9): 1999-2004, 2006
Akhil Sahai, Vijay Machiraju, (2001)\textsuperscript{54} The World Wide Web has unleashed people’s imagination and a plethora of new technologies have emerged. Since these technologies have sprung up to address different requirements, it has become imperative to understand how these different technologies fit together. This paper presents the state of the art of these different technologies and tries to present a coherent vision of their interoperation. In the current scenario Indian customers are moving towards internet banking, slowly but steadily. Most of the big Indian banks like SBI, BOB and BOI etc., have stated providing internet banking services.

Akinyele .S.T. and K.Olorunleke (2010)\textsuperscript{55} technology based self service has greatly changed the way that service firms and customers interact and are raising a host of research and practice issues relating to the delivery of e-service which has become increasingly important not only in determining the success or failure of electronic commerce but also in providing customers with superior experience with respect to the interactive flow of information. The purpose of the research study was to establish the relationship between technology and service quality in the banking industry in Nigeria. The finding revealed that secure services as the most important dimension, followed by convenient location of ATM, efficiency.

Alain Yee-Loong Chong, Keng-Boon Ooi, Binshan Lin, Boon-In Tan,(2010)\textsuperscript{56} aim to empirically examine the factors that affect the adoption of online banking in Vietnam. Perceived usefulness, perceived ease of use, trust and government support were examined to determine if these factors are affecting online banking adoption.

\textsuperscript{56} Alain Yee-Loong Chong, Keng-Boon Ooi, Binshan Lin, Boon-In Tan, “Online banking adoption; An empirical analysis”. International Journal of Bank Marketing, vol.28, issue 4.,2010
Nowadays technology is growing fast and always adds new dimensions to our daily lives. In this way, Internet banking systems allow users to manage financial affairs such as checking account balances and transferring money between accounts as fast and easy as it can be. This study is done in Iran and Malaysia, the basic structure in Malaysia causes more concern, as well as use of this new way of banking.

Electronic banking offers numerous benefits to SMEs. SMEs can check account balances, transfer money, pay bills, collect receivables and ultimately reduce transaction costs and establish greater control over bank accounts. Despite the benefits of e-banking to SMEs, there has been little research done on the factors affecting its adoption. This research aims to investigate the factors that affect SMEs’ adoption of e-banking in Bangladesh. It is well documented in the literature that despite their availability and potential benefits, SMEs in Bangladesh are slow in adopting e-banking services. For the purpose of identifying factors affecting the adoption of e-banking by SMEs, TOE framework, Technology Acceptance Model (TAM), Institutional Theory and Institutional Intervention Theory are used. Drawing upon these as background theories, an integrated conceptual framework for SMEs’ e-banking adoption is developed, which incorporates both the rationalistic goal oriented behaviour of firms and the external forces of technology adoption. Seven variables affecting e-banking adoption by SMEs are identified. They are: organizational capabilities, perceived benefits, perceived credibility, perceived regulatory support, ICT industries readiness, lack of financial institutions readiness and institutional influence. This model can be tested empirically for SMEs in Bangladesh as well as in other developing countries.

57 Ali Sanayei, Ali Noroozi, (2009) Nowadays technology is growing fast and always adds new dimensions to our daily lives. In this way, Internet banking systems allow users to manage financial affairs such as checking account balances and transferring money between accounts as fast and easy as it can be. This study is done in Iran and Malaysia, the basic structure in Malaysia causes more concern, as well as use of this new way of banking.

58 Al Nahian Riyadh, Md. Shahriar Akter, Nayeema Islam (2009) Electronic banking offers numerous benefits to SMEs. SMEs can check account balances, transfer money, pay bills, collect receivables and ultimately reduce transaction costs and establish greater control over bank accounts. Despite the benefits of e-banking to SMEs, there has been little research done on the factors affecting its adoption. This research aims to investigate the factors that affect SMEs’ adoption of e-banking in Bangladesh. It is well documented in the literature that despite their availability and potential benefits, SMEs in Bangladesh are slow in adopting e-banking services. For the purpose of identifying factors affecting the adoption of e-banking by SMEs, TOE framework, Technology Acceptance Model (TAM), Institutional Theory and Institutional Intervention Theory are used. Drawing upon these as background theories, an integrated conceptual framework for SMEs’ e-banking adoption is developed, which incorporates both the rationalistic goal oriented behaviour of firms and the external forces of technology adoption. Seven variables affecting e-banking adoption by SMEs are identified. They are: organizational capabilities, perceived benefits, perceived credibility, perceived regulatory support, ICT industries readiness, lack of financial institutions readiness and institutional influence. This model can be tested empirically for SMEs in Bangladesh as well as in other developing countries.
Ali and Akter (2010) argued that a transitional period in the banking sector of Bangladesh has been passing through since shifting from the traditional banking system to the online banking system. These comments indicate that gradually electronic banking is gaining its importance in Bangladesh. Customers liking is necessary for the banking sector to elevate profitability, business expansion and accomplishment. Now-a-day’s banking sector is modernizing and expanding its hand in different financial events every day. At the same time the banking process is becoming faster and easier. In order to survive in the competitive field of the banking sector commercial banks are looking for better service opportunities to provide their customer. The paper has been undertaken mainly to find out whether e-banking can satisfy the customers or not.

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

Abasanul Haque, Ahmad Zaki Hi Ismail, Abu Hayat Daraz, This study investigated the determinant factors of consumers’ perception on E-banking transaction in Internet banking by Malaysian bank consumers. The research framework was developed to testify the statistical relationships between consumer perceptions and E-banking transaction. Factor analysis was performed to extraction and make initial decision on the number of factors underlying asset of measured variables of interest. Thereafter, multiple regression was estimated to anticipate the effects of the explanatory variables. This study offers an insight into E-banking in Malaysia, which has not been previously been investigated and

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much statistical significance makes this study a potential cornerstone for future research.

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

**Anne J. Broderick, Supattra Vachirapornpuk, (2002)** One of the key challenges of the Internet as a service delivery channel is how service firms can manage service quality as these remote formats bring significant change in customer interaction and behaviour. Drawing on theoretical frameworks of service quality and adapting these to particularly reflect the remote delivery format of the Internet, this study proposes and tests a service quality model of Internet banking. The research uses participant observation and narrative analysis of a UK Internet banking Web site community to explore how Internet banking customers perceive and interpret the elements of the model. Findings show that the level and nature of customer participation had the greatest impact on the quality of the service experience and issues such as customers’ zone of tolerance.

**Awamleh and Fernandes (2005)** adopt the model to analyze the content of bank websites in the United Arab Emirates (UAE). The results reveal that IB in the UAE is still in its infancy. In their study it is also concerned with factors that impact the satisfaction of IB users. They find that security of

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transactions and conveniences contribute significantly to satisfaction of IB customers.

Anita Lifen Zhao, Nicole Koenig-Lewis, Stuart Hanmer-Lloyd, Philippa Ward, (2010)⁶⁵ aim to contribute to this field by looking simultaneously at the roles of trust and perceived risk on consumers' IBS usage intention. Results indicate that there is a significant relationship between trust and perceived risk and that both are crucial in explaining the internet banking usage intention. Furthermore, trust in the bank is fundamental not only to reducing risk perceptions of IBS in general but also to building trust in the banks' competence in terms of IBS activity.

ATM vendor NCR Corporation and market research agency AcNielsen ORG MARG 2006,⁶⁶ Customers clearly use the alternative banking channels for specific set of transactions. Phone banking extensively used for making balance enquires [81%] and branches for depositing cash [35%] and other transactions. Nearly 44% of those using the internet actually carryout online money transfer and the rest use the channel for checking balances in their accounts. Most of bank customers find ATMs almost as secure as branches.

Anu Antony, (2009)⁶⁷. Banks profitability eventually depends on its ability to generate non-fund, fee based income by leveraging on technology. Technology helps banks to widen their geographic reach. There is certainly a sea change in the way banks are operating with the advent of e-banking services.

⁶⁷ Anu Antony, “Banks in India towards a paradigm shiftz’ Mr.Anu Antony., professional banker, December 2009,pg 33. the icfai university press]
S. Anitha (2010) The endeavor of this paper is to throw more light on the study, methodology, modus operandi and its results banks have introduced a new lucrative technology called mobile banking which is using mobile phones as a medium for extending banking services to target a large number of customers. With the advent of this new channel, it is possible to bank from anywhere at any-time and in any condition through either SMS or WAP by linking one’s bank account to a mobile phone.

Annavarjula & Beldona 2000, 5 Internal organizational elements like innovative culture, technology readiness for corporate clients employees, and top management support for business were used to explore the relationship subsequently for solving problems pertained to resources limitation within SMEs. Eventually, few empirical studies had examined the influence of internationalization and corporate e-banking on firm performance.

Ankur Gupta (2006) Consumer Internet Banking, with its ability to reach each and every nook and cranny of the world holds great importance for a nation like India, where conventional Banking services are out of reach for a large proportion of the masses. But to make it a success it requires more than just an adequate internet enabling infrastructure. There is a dire need for an adequate legal and regulatory framework to be put into place. One of the crucial elements of such a legal and regulatory framework will be Data Protection provisions. The emphasis of this article is on this aspect of data protection in the electronic banking sector. The article is an attempt to highlight the importance of data protection in internet banking and dwell upon possible legal recourses which may be adopted keeping in mind the current legal framework in India with regards regulation of Information Technology.

68 S.Anitha,  Mobile banking, February 2010, pg 32. Professional banker, the Icfai university press.
70 Ankur gupta,Data Protection in Consumer E-banking, Journal of Internet Banking and Commerce, April 2006, vol. 11, no.1
Arpita Khare, (2010)\textsuperscript{71}, Technology is fast altering the business service
scape. Its role in improving customer service levels in being used strategically
and increasingly by service organizations. The service attributes and quality can
be enhanced by deployment of technology. The internet has facilitated
convenience in customer interactions and transactions with the banks. Online
banking is currently emerging as a new approach in India for providing improved
accessibility and expediency to customers. Most banks have their own website
for improving the customer interface and offering online services. The article
studies the applicability of online banking in India and its role in fostering
relationships with customers and giving them more value. The research was
created on customers familiar with online banking in India, and their
perceptions about online banking were studied. The findings reveal that
customers are using the services but are skeptical about the financial
transactions and service quality dimensions.

Avinandan Mukherjee, Prithwiraj Nath,(2003),\textsuperscript{72} The role of trust
encompasses the exchanges and interactions of a retail bank with its customers
on various dimensions of online banking. Specifically lays stress on the bank-to-
customer exchanges taking place through the technological interface.
Hypothesizes share value, communication and opportunistic behaviour as
antecedents to trust. Trust and commitment also have a causal relationship. It
was observed that shared value is most critical to developing trust as well as
relationship commitment. Communication has a moderate influence on trust,
while opportunistic behaviour has significant negative effect. Also finds higher
perceived trust to enhance significantly customers’ commitment in online banking
transaction. An important contribution concerns how trust is developed and
sustained over different levels of customer relationship in online banking. The
future commitment of the customers to online banking depends on perceived
trust.

\textsuperscript{71} Arpita Khare, (2010), “Online banking in India: An approach to establish CRM” Journal of
Financial Services Marketing 15, 176-188 (September 2010)
\textsuperscript{72} Avinandan Mukherjee, Prithwiraj Nath, (2003) “A model of trust in online relationship banking”,
International Journal of Bank Marketing, Vol. 21 Iss: 1, pp.5 – 15
Avasthi & Sharma (2000-01) have analyzed in their study that advances in technology are set to change the face of banking business. Technology has transformed the delivery channels by banks in retail banking. It has also impacted the markets of banks. The study also explored the challenges that banking industry and its regulator face.

Barbara R. Lewis, Kurt E. Hoel, (1993), The banking environment is characterised by continuing social, economic, technological and regulatory change, and current challenges include increasing competition from both bank and non-bank institutions, rapidly developing technological innovation, and changing customer needs. The focus is on technological developments and the Nordic Bank environment, and findings from a survey among Norwegian companies are presented. The Survey considers their use of and attitudes towards electronic banking services. Recommendations are made with respect to the marketing activities of Norwegian banks with regard to electronic cash management services for corporate clients, and the future for such services.

Benamati & Serva, 2007 argued that The significant moderating factors are gender, educational level, income, internet experience and internet banking experience, but not age, The adoption of IB forces consumers to consider concerns about password integrity, privacy, data encryption, hacking, and the protection of personal information.

Belch and Belch (2009) stated that one major advantage of online marketing is the Internet allows for a back and forth of information, which gives users the ability to modify the form and content of the information they receive in real time. Another advantage of online marketing is that people are spending

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more time on their computer. People look at what is available on the Internet, and research prices, stores, and ratings. Then they choose which product or service is best for them.

**Black et al. (2001)**\(^{77}\) performed a qualitative study on the adoption of internet services and found out that those with the highest income with a greatest use of information technology were most likely to purchase financial services using internet channel.

Bussakorn Jaruwachirathanakul, Dieter Fink, (2005)\(^{78}\) identify the factors that encourage consumers to adopt internet banking services in Thailand and to use the study's findings to develop strategies for banks on how to maximize the rate of adoption. The attitudinal factors that appear to encourage the adoption of internet banking in Thailand most are “Features of the web site” and “Perceived usefulness”, while the most significant impediment to adoption is a perceived behavioural control, namely “External environment”.

**Burrett (2008)**\(^{79}\) states online marketing is about “carefully targeting users and getting them to interact with you while they’re engaged with the most personal, intimate medium ever invented”. Unlike a traditional media audience, internet users have control of their medium. They decide where they want to navigate, what they want to do and which links they want to click.

**Caalin Guraau,(2002)**\(^{80}\) Internet banking is one of the newest Internet technology applications, which promises multiple benefits both for the financial institutions and for clients. In the last five years a large number of banks have launched Web sites, offering online banking services. While the implementation

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and the functioning of these digital systems seem to be relatively smooth in the developed economies, the situation may be different in countries with economies in transition. The present paper investigates and analyses the present situation of online banking in Romania, and the appropriate strategies for the successful implementation and development of online banking services in the Romanian context.

Camel Herington, Scott Weaven, (2007) The purpose of this research is to explore the impact of online service quality on the level of customer delight and on the development of customer relationships. A self-complete survey was used to collect data from a convenience sample of 200 Australian respondents who use online banking. Factor analysis and structural equation modeling were used to test the proposed model of relationships. Online service quality has no impact on customer delight, e-trust or the development of stronger relationships with customers. It does have a relationship to e-loyalty. However, the “efficiency” dimension of online service quality is related to e-trust and also indirectly to relationship strength through e-trust. The “personal need” and “site organization” dimensions of online service quality are related to e-loyalty, with “personal needs” exhibiting the strongest impact. Customer delight has no relationship to online service quality, nor e-trust, relationship strength or e-loyalty.

Camel Herington, Scott Weaven, (2009) in this paper explores the measurement of e-service quality for e-retail banking, the importance of e-service quality dimensions to e-retail bank customers, and the relationship between e-service quality and customer satisfaction. This paper informs knowledge gaps related to the measurement and structure of e-service quality, its importance and impact on customer satisfaction. A more holistic measure of e-service quality is

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supported. Good e-service performance impacts customer satisfaction positively, but does not override unsatisfactory performance in other areas.

Carlos Flavián, Miguel Guinalíu, Eduardo Torres, (2006) in this paper analyzes how consumers’ perceptions of their traditional bank influence their decision to adopt the services offered by the same bank on the internet. The results in the paper showed that consumer trust in a traditional bank, as well as incomes, age and sex are factors that influence consumers’ decision to work with the same bank via the internet. The results in the paper showed that consumer trust in a traditional bank, as well as incomes, age and sex are factors that influence consumers’ decision to work with the same bank via the internet.

Christopher Gan, Mike Clemes, Visit Limsombunchai, Amy Weng, (2006) the competitive landscape of financial institutions is shifting and internet banking is no longer a competitive advantage but a competitive necessity for banks. However, a limited number of empirical studies have been published in the marketing literature about electronic banking. This paper seeks to examine consumers’ choices between electronic banking and non-electronic banking in New Zealand. The findings in the paper show that the output from the logistic regression indicates that the service quality, perceived risk factors, user input factors, employment, and education are the dominant variables that influence consumers’ choice of electronic banking and non-electronic banking channels.

Chellappa (2002) argue that not all but most transactions are conducted through Web browsers that connect to merchant sites. According to them, consumer perceptions of security are developed through visibly sufficient

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mechanisms that are carried out through the processes of encryption, protection, verification and authentication. The mechanisms of encryption, digital authentication, protection, and verification of on-line identity influence the Internet customers’ perception on information security and increase the likelihood of consumer confidence and trust.

**Chien-Ta Bruce Ho, Wen-Chuan Lin, (2010)** develop a multiple item scale for measuring internet banking service quality. There are five dimensions and 17 items in the measurement scale for measuring the service quality of internet banking. The five dimensions are named customer service, web design, assurance, preferential treatment, and information provision. Based on the understanding of the key service quality dimensions and the perception of customers toward e-service quality, managers may discover methods to improve customer satisfaction, build customer trust, and create loyal customers.

**Charles K.Ayo, Uyinomen O.Ekong, Fatudimu Ibukun Tolulope, 2007**, Nigeria was described as the fastest growing telecoms nation in Africa and the third in the World. The country had experienced a phenomenal growth from a teledensity of 0.49 in 2000 to 25.22 in 2007. This trend has brought about a monumental development in the major sectors of the economy, such as banking, telecoms and commerce in general. This paper presents the level of adoption of ICT in the banking sector and investigates the prospects of m-Commerce in Nigeria based on strengths, weaknesses, opportunities and threats (SWOT) analysis. Findings revealed that all banks in Nigeria offer e-Banking services and about 52% of the offer some forms of m-Banking services. The banks and the telecoms operators have enormous potentials and opportunities for m-Commerce but the level of patronage, quality of cell phones, lack of basic

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infrastructure and security issues pose a major threat to its wide scale implementation.

Chris (2006)\textsuperscript{88}, in his research on Bank ATM Security Advice states that ATM bank cash machines have been incorporated in our way of life. They offer a real convenience to those on the run, but at the same time offer an element of risk. Using a bank ATM machine safely requires awareness and a little planning. Just because a bank ATM machine is open and available 24-hours a day doesn't mean it is always safe to use it. He further identifies that Bank ATM robbers are usually males under 25 years of age and most work alone. ATM robbers usually position themselves nearby (50 feet) waiting for a victim to approach and withdraw cash. Half of the ATM robberies occur after the cash withdrawal.

Chi Shing Yiu, Kevin Grant, David Edgar (2007)\textsuperscript{89} The rapid development of Internet and Electronic Business has stimulated the banking and financial sectors towards encouraging customers to bank on-line. This paper explores the adoption of Internet Banking by retail customers in Hong Kong. The paper attempts to make sense of Internet Banking in Hong Kong from three angles: (i) the current adoption rate of Internet Banking; (ii) the influences of perceived usefulness, perceived ease of use, perceived risk and personal innovativeness in information technology and (iii) the potential impacts on the strategic activity of banking organisations operating in the Hong Kong market.

Chuang, Chao Chao, Hu, Fu-Ling (2010)\textsuperscript{90} This study uses the quantitative research method to explore consumers’ perceptions of Internet banking services. It is found that checking account balance, the information about foreign exchange rates, current interest rates and transferring money between accounts are the most important online banking services features from


\textsuperscript{89} Chi Shing Yiu, Kevin Grant, David Edgar, Factors affecting the adoption of internet banking in Hongkong-implication for the banking sector, International Journal of Information Management, Volume 27, Issue 5, October 2007, Pages 336-351

the customer point of view. On the contrary, customers generally pay less attention to the following items, such as exchanging opinions with others, reading versatile daily news and browsing the banking website. Therefore, in addition to improving transaction technicalities factor and making customers' decision-making more convenient, future online banking penetration and the success of complicated financial product offering will depend upon online marketing activities connected with increasing website security factor, interactivity factor and better specialty information factor.

**Corrocher (2002)** investigated the determinants of the Internet technology adoption for the provision of banking services in the Italian context and also studied the relationship between the Internet banking and the traditional banking activity, in order to understand if these two systems of financial services delivery are perceived as substitutes or complements by the banks. According to the results of the empirical analysis, banks seem to perceive Internet banking as a substitute for the existing branching structure, although there is also some evidence that banks providing innovative financial services are more inclined to adopt the innovation than traditional banks.

**Cracknell, David (2004)** This article examines what types of electronic banking technology are open to microfinance institutions. It then proceeds to examine how various electronic products might be attractive to poor customers in terms of improved accessibility, affordability and ease of use. From the financial institution's point of view, the functionality of electronic cards, pricing of electronic solutions, the segmentation of different products for different client groups and possible partnerships all need to be considered. The environment can either support or hinder the adoption of electronic banking and the article describes how the evolution of the financial and retail sectors, the extent of financial literacy and the policy and regulatory environment should support these developments.

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92 Cracknell, David Electronic banking for the poor - panacea, potential and pitfalls Small Enterprises Development, Volume 15, Number 4, December 2004, pp. 8-24(17)
Although developing an extensive e-banking solution is beyond the range of most microfinance programs at present, a range of options suitable for some microfinance programs is presented. Finally, the article suggests principles for donor involvement in this sector.

**Cynthia (2000)**\(^{93}\) states that the 24 hours access to the ATM machine is a double edge sword it has both advantage and disadvantage. It is easy to deduce that ATM fraud is carried out most in the day time. Also there are occurrences at night but most ATM users prefer to make withdraw during the day thus preventing incidences of robbery at night. On the present level of security provide by banks as regards to ATM. The responses from the tables denote that the security level is poor. Some banks do not provide any means where customers can easily report cases of ATM fraud. ATM manuals or FACTA (Fair and Accurate Credits Transactions Act) is a pertinent document that should be given to ATM users as they are been issued with ATM but from the study this is absolutely neglected

**Cunningham, Lawrence F· Gerlach, James· Harper, Michael D (2005)**\(^{94}\) This research investigates the premise that purchasing e-banking services is perceived to be riskier than purchasing traditional banking services. Unlike previous studies on perceived risk that typically focused on the relationship of perceived risk and information search, this exploratory study examines the dynamics of perceived risk throughout the various stages of the consumer buying process. A survey of 159 respondents reveals a risk premium for e-banking services that follows a systematic pattern throughout the consumer buying process. When viewed as a dynamic process, perceived risk for e-banking services shows more radical changes in risk levels than traditional banking services. The analyses indicate that financial risk drives the risk premium while

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\(^{94}\) Cunningham, Lawrence F· Gerlach, James· Harper, Michael D. Perceived risk and e-banking services: An analysis from the perspective of the consumer journal of financial services marketing, , Volume 10, Number 2, 1 November 2005, pp. 165-178(14)
psychological, physical and time risk play ancillary roles as risk drivers at certain stages of the consumer buying process. A major implication of this study is that there is a risk premium for e-banking services and the risk premium permeates all stages of the consumer buying process.

**Dabholkar and Bagozzi (2002)** stated that technology can have a significant impact on service delivery, hence reducing the problems pertinent in face to face settings.

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

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

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DeYoung (2001) found that the average one year old Internet-only bank earned significantly lower profits than the average one year old branching bank, due to low business volumes and high non-interest expenses. It supports the proposition regarding the Internet-only banks, “fast growth but low (or no) profits.”

Derek Mohammed, (2010) This paper examines some of the challenges of online marketing, including the importance of adding online marketing to corporation budgets. A review of the pros and cons of social networking on the Internet, when used as a marketing tool by companies is presented. In addition, new forms of Internet shoppers and new niches for companies are identified. This paper discusses some key advantages and disadvantages of online marketing.

Dexiang Wu, Desheng Dash Wu, (2009) Online banking has attracted a great deal of attention from various bank stakeholders such as bankers, financial service participants, and regulators. The purpose of this paper is to analyze the online banking service performance of giant US and UK banks. Risk analysis is also conducted.

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

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Divakar Goswami, Satish Raghavendran, (2009)\textsuperscript{102} establish the potential that mobile banking offers to both banks and mobile carriers. Acknowledging the inherent difficulties of convergence between large and very different industries, it then explores the merits and shortcomings of existing partnership models and offers suggested best practices. Open-federated models – involving partnerships between large numbers of banks and mobile carriers to provide a shared platform for mobile-banking services – access the broadest customer base and minimize the costs of developing proprietary software and infrastructures.

Ebling, (2001)\textsuperscript{103} This paper describes an empirical study of investigating recent trend and development of the application of e-banking (banking though internet) in a typical developing country – Bangladesh, and its economic impact on local financial institutions. Currently, Bangladesh is far behind in terms of e-banking development and applications. More specifically, while it is a fact that currently many banks in Bangladesh have implemented e-banking services, however, comparing with most developed countries, the e-banking application in Bangladesh is only in its infancy stage and there is a huge gap to be fulfilled with new research and development effort. As such, addressing the current issues and challenges in the development of e-banking in Bangladesh is the primary motivation of this research. In addition, customer’s transaction and communication abilities have been improved by the developments of information technology. Information technology enabled electronic channels to perform many banking functions that would traditionally be carried out over the counter.

Elizabeth Daniel (1999)\textsuperscript{104}, Electronic or online banking is the newest delivery channel to be offered by the retail banks in many developed countries and there is wide agreement that this channel will have a significant impact on


the market aims to quantify the current provision of electronic services by major retail banking organizations in the UK and the Republic of Ireland. Additional insight into the banks’ adoption of this new channel is gained by exploring two areas important in the analysis of new offerings, that is: an organization’s approach to innovation; and their view of the current and future markets. It is also found that the organization’s vision of the future, their prediction of customer acceptance, which tends to be very low, and their organizational culture of innovation are the most important of the suggested factors in their adoption of electronic delivery.

Eun-Ju Lee, Kyoung-Nan Kwon, David W. Schumann, (2005) For a new technology-based product or service at an early stage of diffusion, it is likely that only a small subset of consumers have adopted it. When non-adopters still comprise the majority of the target populations, describing all non-adopters as a homogeneous population may be inaccurate and inappropriate. It is important to be able to identify differences, not only between adopters and non-adopters, but also among non-adopters, the latter providing a means of identifying the consumer segments likely to be profitable in the future. The first objective of this paper is to demonstrate the appropriateness of further segmenting the non-adopter category based on motivations (intentions) to adopt internet-banking by those who are “persistent non-adopters” and those who are “prospective adopters”. The second objective of this paper is to further the understanding of the adoption process of internet banking by examining a range of diffusion factors that affect consumers’ adoption behavior.

Dr. Francisco Muñoz-Leiva, Prof. Teodoro Luque-Martínez, Dr. Juan Sánchez-Fernández, (2010) contributes to the stream of TRUST research with a focus on optimizing this perception via electronic transactions in the

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banking industry. Specifically, the study examines trustworthiness toward a bank and on its dependability using a variety of "institution-based" trust mechanisms, such as security of transaction, reputation and web quality. The analysis discovers that the mere presence of seals is not in itself important for the explanation of beliefs about trustworthiness and dependability of a website with electronic banking services. But the manner in which the trust-generating mechanisms are presented, either individually or in their different combinations, has different effects on trust. As the use of online banking steadily increases over the year,

(Fredriksson, 2003) knowledge about defining high-quality service delivery over the Internet becomes crucial for banks, which want to stay competitive on the marketplace. If banks have knowledge about the quality attributes they can use to measure the quality of their online services and the overall satisfaction of their customers with each of these attributes, it would be much easier for them to take necessary measures and steps to improve the overall service quality.

Fulbag Singh & Davinder Kaur, 2010 Banking sector plays a pivotal role in the growth of any economy by mobilizing people's funds into productive channels. Banks provide services for the fulfilment of consumers' financial needs. Whether the area is rural or urban, banks are trying to diversify their services to the masses, and customers should also be aware of these. But due to lower literacy level and inadequate sources of information in rural areas, the customers are not fully aware of the services offered by the banks. Therefore, the present research work is being carried out to find the gaps in the awareness level of rural and urban bank customers and to identify the significant sources of information influencing customer awareness.


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

Gaston Leblanc, (1993) presented an exploratory study on customer motivations towards the use and non-use of an automated teller machine with data collected from a total of 208 customers of a financial institution. An analysis of results based on demographic variables reveals significant differences between users and non-users in terms of education only. Results also show that convenient accessibility of a financial institution and avoidance of waiting lines are the principal reasons for using the automated teller. Furthermore, in comparison with non-users, the user group is more likely to believe the automated teller improves service quality, reduces the financial institution's operating costs, presents no personal or financial risks, and is simple to use. The non-user group for its part prefers dealing with human tellers, finds the machine complex to use, and associates personal and financial risks with the use of the automated teller.

Geetika, Nandan, T & Upadhyay, AK (2008) A study on the Internet users, conducted by Internet and Mobile Association of India ( IAMAI), found that about 23% of the online users prefer IB as the banking channel in India, second to ATM which is preferred by 53%. Out of the 6,365 Internet users sampled, 35%

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use online banking channels in India. This shows that a significant number of online users do not use IB, and hence there is a need to understand the reasons for not using it.

Georgia, Giordani, Christos Floros, (2009)\textsuperscript{112} This paper examines the internet banking services that Greek commercial banks are offering. It also presents the associated costs and fees that customers face when using these services. The findings show that there are disparities in the fees that Greek commercial banks impose on their customers for performing banking transactions over the internet. When compared Automated Teller Machine (ATM) fees with branch fees, it was found that ATM charges are lower than branch fees. Finally, the paper concludes that internet banking fees are lower than both ATM fees and branch fees.

Gerrard and Cunningham (2003)\textsuperscript{113} found a positive correlation between convenience and online banking and remarked that a primary benefit for the bank is cost saving and for the consumers a primary benefit is convenience.

Gerard Prendergast, Norman Marr, (1994)\textsuperscript{114} The increasing provision of self-service technologies such as automated telling machines (ATMs) in retail banking means that customers now have a variety of means of carrying out their banking business in many cases, the functions of these technologies overlap with the functions of the bank branch. Seeks to determine the form and function of the retail bank branch network in New Zealand. In the presence of these self-service technologies for the years 2000 and 2010. The results indicated that in the short term the bank branch in its current from will remain very important. In the longer term, while the bank branch will still be very important, one can expect a reduction in numbers In part this reduction will be caused by the availability of

remote banking technology which reduces the need for the bank branch. The main city centres will supply customers with staff less branches – a branch which is dominated by self-service technology. In branches which are still dominated by human staff, tellers will become salespeople armed with platform automation. i.e. personal computers which both themselves and customers can access to in order to obtain product profiles and other information. Self-service technology in the branch “vestibules” will also become widespread.

Gopalakrishnan. S, Wischnevsky. J.D, Damanpour. F, 2003\(^{115}\) The Internet is an outcome of the convergence of multiple technologies and its applications have the potential to strongly influence many industries. Focusing on the banking industry, we examine the factors that influence the adoption of the Internet at three levels of analysis: the external context of the industry; the industry; and the firm. At the external context level, we analyze how the development of a favorable external context facilitates the adoption of a new technological application: Internet banking. At the industry level, we examine the types of innovations that a new technological application engenders, the role incumbents, and new entrants play in promoting the adoption of Internet banking, and other factors that impact the speed of Internet banking diffusion. At the firm level, we examine differences in banks’ strategies and organizational designs associated with the adoption of Internet banking as an added delivery channel versus as a separate business. We conclude by discussing unique features in the emergence and adoption of Internet banking and its potential performance implications.

Guru, B., Vaithilingam, S., Ismail, N. Guru et al. (2003)\(^{116}\) evaluate the websites of banks in 12 Islamic countries. They find that the majority of Islamic countries are still in the early stages of developing IB. Only some Islamic banks

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in the Middle East have well-developed IB websites. and Prasad, R. (2000) examined the various electronic channels utilized by the local Malaysian banks and also accessed the consumers’ reactions to these delivery channels. It was found that Internet banking was nearly absent in Malaysian banks due to lack of adequate legal framework and security concerns. However over 60 percent of the respondents were having Internet access at home and thus represented a positive indication for PC based and Internet banking in future.

Hasan Banu. S (2004), studied about customer services in rural banks. She found that the rural customers are not aware of the purpose for which the loan is available and how they can be availed. Customers do not know the complete uses, regulations and procedures of the banks as the bank personnel do not take interest in educating customers.

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

Hatice Jenkins, (2007), aims to examine the factors affecting the adoption of internet banking services by domestic commercial banks in a sparsely populated small island. Evidence from survey studies and from banks’ web sites indicated that in North Cyprus have been consistently moving towards providing internet banking services despite a very small potential market to share.

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Hans H. Bauer, Malik Hammerschmidt, Tomas Falk (2005) In the internet economy, the business model of web portals has spread rapidly over the fast few years. Despite this, there have been very few scholarly investigations into the services and characteristics that transform a website to a portal as well as into the dimensions that determine the customer’s evaluation of the portal’s service quality. Based on an empirical study in the field of e-banking, the authors validate a measurement model for the construct of web portal quality based on the following dimensions; security and trust, basic services quality, cross-buying services quality, added value, transaction support and responsiveness. The identified dimensions can reasonably be classified into three service categories; core services, additional services and problem-solving services. The knowledge of these dimensions as major determinants of consumer’s quality perception in the internet provides banks a promising starting point for establishing an effective quality management for their e-businesses.

Hua (2009) conducted an experiment to investigate how users perception about online banking is affected by the perceived ease of use of website and the privacy policy provided by the online banking website. In this study, it also investigates the relative importance of perceived ease of use, privacy, and security. Perceived ease of use is of less importance than privacy and security. Security is the most important factor influencing user’s adoption

Hanudin Amin Ricardo Baba Mohd Zulkifli Muhammad (2005) Today, the advancement of mobile technologies has provided an opportunity for financial innovations introduced by financial providers is mobile banking. This study adopts a technology acceptance model (TAM) to investigate factors that providers in introducing new financial innovations. One of the emerging financial

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121 Hua, Guangying 2009. An Experimental Investigation of Online Banking Adoption in China, Journal of Internet Banking and Commerce, April, Vol. 14,
122 Hanudin Amin Ricardo Baba Mohd Zulkifli Muhammad An analysis of mobile banking acceptance by Malaysian customers International journal of service industry management, 2005,16( 5)416-435
determine an individual’s intention to use mobile banking among bank customers in Labuan and Kota Kinabalu. The TAM includes perceived credibility, perceived self-efficacy and normative pressure. Our results support the extended TAM in predicting bank customers’ behavioral intention to use mobile banking. Determinants are perceived usefulness, perceived ease of use, perceived credibility and perceived self-efficacy. Normative pressure was found to be a weak determinant in explaining bank customers’ intention to use mobile banking. The study also demonstrates the significant effect of perceived ease of use on behavioral intention through perceived usefulness.

Howcroft et al. (2002)\textsuperscript{123} found that the most important factors encouraging consumers to use online banking are lower fees, less paperwork, and reduced human errors, which subsequently minimize disputes.

Husain F\textsuperscript{124} “highlighted the importance of IT in various sectors. In the introduction of any new technology system, various organizational, financial and functional problems are faced. People are generally reluctant to accept new system, howsoever beneficial it may be. Such problems related to computerization have been critically and vividly discussed.

Hernan E. Riquelme, Rosa E. Rios, (2010)\textsuperscript{125} This paper seeks to test the factors that can influence adoption of mobile banking among current users of internet banking in Singapore and gender as a moderating variable. Usefulness, social norms and social risk, in this order, are the factors that influence the intention to adopt mobile banking services the most. Ease of use has a stronger influence on female respondents than male, whereas relative advantage has a stronger effect on perception of usefulness on male respondents. Social norms

\textsuperscript{124} Husain F in “Computerization and Mechanization in Indian banks”, Deep and Deep publication, New Delhi.
(or the importance of others in the decision), also influence adoption more strongly among female respondents than male.

**Heggede O.D.(2000)** studied bank customer relationship in India. He analyzed the responses of 11 different classes of bank customers including businessmen, salaried, advocates and peasants. He analyzed customers' views on the one hand and employees views on the other. The paper concluded that there is a low correlation among the different occupations and satisfaction from services in the public sector banks.

**Heikki Karjaluoto, Minna Mattila, Tapio Pento, (2002)** explored the effect of different factors affecting attitude formation towards Internet banking (online banking) in Finland. The purpose of this paper is to determine those factors that influence the formation of attitude towards Internet banking on the one hand, and their relation to the use of online banking services, on the other. Attitude formation was studied by the use of a structural equation model. The results are expected to provide both theoretical and practical contributions in the area of electronic retail banking and understanding of consumer behaviour in the turbulent financial services industry.

**Hsin-Ginn Hwang, Rai-Fu Chen, Jia-Min Lee, (2007)** The purpose of this study is to develop a measurement instrument for customer satisfaction with internet banking (IBCS). A web survey was used with the subjects being internet banking users of Taiwanese banks. The study demonstrates that all the items in the Doll and Torkzadeh instrument for end-user computing satisfaction measures are still valid in the context of internet banking, and that IBCS depends heavily on security and trust considerations on the internet.

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Haver (2008) 129 “Today’s younger, more ‘green’ shoppers aren’t going to waste precious money and gas going from store to store looking for just the right item. They shop online whenever they can, narrowing their choices to one or two items-then go to the store to touch, feel, bounce and check out the actual product to see if it looks the way it was represented online.

IAMAI REPORT 2006 130, According to a study carried out by IAMAI, it was found that people do not prefer online financial transactions due to many reasons such as security and facilities concerns.[45%], preference for face to face transactions[39%], lack of knowledge [22%] and lack of user friendliness of the channels [10%].]

Jalan, B. (2003) 131, IT revolution has brought about a fundamental transformation in banking. Perhaps no other sector has been affected by advances in technology as much as banking & finance. It has the most important factor for dealing with the intensifying competition & the rapid proliferation of financial innovations.

John Simpson (2002) 132, This paper investigates the risk, efficiency and rate of progress in the implementation of electronic commerce (e-commerce) in a sample of banks from a developed country (the US), and a sample of banks from developing and emerging markets. The results confirm that the US is very advanced in its electronic-banking (e-banking) actuation. There is evidence suggesting that e-banking is driven largely by the prospects of operating costs minimization and operating revenue maximization. Costs are lower and revenues higher when banking services are delivered through a branch network. The

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132 John Simpson The impact of the Internet in banking: observations and evidence from developed and emerging markets, Telematics and Informatics, vol.19, issue 4, November 2002, Pages 315-330
results also suggest that perceptions of banking risk may be partially driven by similar factors. Using a basic risk-scoring model, bank risk scores (reflecting a bank's ability to repay depositors) are regressed against operating efficiency measures.

Jamie Anderson (2010)\textsuperscript{133} M-banking is one of the newest approaches to the provision of financial services through information communication technology (ICT), made possible by the widespread adoption of mobile phones even in low income countries. Emerging mobile banking (m-banking platforms) in developing markets enable two sided markets, bringing together mobile handset users with other mobile users and commercial partners. It is the argument of this paper that the emergence of m-banking platforms has the potential for spill-over effects, and that these spill-over effects will require regulatory authorities to develop appropriate policy responses

Joseph H. Plummer (1971)\textsuperscript{134} conducted a study on the life style pattern of male and female credit card holder using their demographic and purchase data, the basic demographic pattern and card usage data indicate a widespread use of commercial bank charge cards across many demographic segments of population. From the stand point of potential market segments, however the higher income better educated, middle aged and professional segments are more prominent on the user index scale. The study depicts certain aspects of credit card users’ lifestyles. Both male and female users indicate a convenience orientation towards credit cards as a satisfactory cash substitute. The study indicates that users of commercial bank charge cards in contrast to non-users, exhibited a "contemporary state of mind" and a rejection conservative, traditional concepts which is a major detriment of card usage beyond demographic variables


\textsuperscript{134} Joseph H. Plummer, Life style Patterns and commercial bank credit and usage, Journal of marketing vol.35, 1971m og 35-41
Jane M. Kolodinsky, Jeanne M. Hogarth, Marianne A. Hilgert, (2004) \(^{135}\) in this paper explores factors that affect the adoption or intention to adopt three e-banking technologies and changes in these factors over time. Using a Federal Reserve Board commissioned data set, the paper finds that relative advantage, complexity/simplicity, compatibility, observability, risk tolerance, and product involvement are associated with adoption. Income, assets, education, gender and marital status, and age also affect adoption. Adoption changed over time, but the impacts of other factors on adoption have not changed. Implications for both the banking industry and public policy are discussed.

James M. Curran, Matthew L. Meuter, (2005) \(^{136}\) Advances in technologies have allowed service providers to incorporate many different technologies into the delivery of their services. These technologies have been implemented in the service encounter for the customer to use with varying degrees of success. This research aims to focus on the examination of factors that influence consumer attitudes toward, and adoption of, self-service technologies (SSTs). This research has demonstrated that multiple factors need to be considered when introducing technologies into the service encounter and that the salient factors may vary among technologies and their stages in the adoption process.

Jan Mattson, Helge Helmersson, (2005) \(^{137}\) aimed at modeling the e-competence of internet bank customers with a new text-analytic method. Theses verbal syntheses (as modeled by a Pretext text-analytic approach) are purported to illustrate e-competence. A diverging pattern of e-competency was


\(^{136}\) James M. Curran, Matthew L. Meuter, (2005) Advances in technologies have allowed service providers to incorporate many different technologies into the Self-service technology adoption: comparing three technologies”, Journal of Services Marketing, Vol. 19 Iss: 2, pp.103 – 113

found. One group of customers was able to handle the web site and the other group felt abandoned and was not able to adopt technology.

**Jabnoun and Al-Tamimi (2003)**\(^{138}\) examined perceived services quality in commercial banks in the United Arab Emirates, emphasizing the importance of service quality to maintain market share, concluding that customers value human skills the most in service quality. Finally, the importance of *ease of use* in determining successful IT adoption has been highlighted in much previous literature (Davis, Bagozzi and Warshaw 1989; Moore and Benbasat 1991; Taylor and Todd 1995).

**B. Janki (2002)**\(^{139}\) analyzed that how technology is affecting the employees’ productivity. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management etc. the study concludes that technology is the only tool to achieve their goals.

**Jayawardhena (2004)**\(^{140}\) developed a model consisting of five dimensions: access, web site interface, trust, attention and credibility and it was found that customers place more importance upon access and web site interface than the other dimensions and concluded that banks should focus on building trust through ensuring the security and privacy of customer information. He transforms the original SERVQUAL scale to the internet context and develops a battery of 21 items to assess service quality in e-banking. By means of an Exploratory Factor Analysis (EFA) and a Confirmatory Factor Analysis (CFA), these 21 items are condensed to five quality dimensions: access, website interface, trust, attention and credibility. E-banking is seen as the newest delivery

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channel of banks in many developed countries and nobody can deny the fact that such a newest channel is believed to have a significant impact on the banking market

Jayawardhena & Foley, 2000,\textsuperscript{141} contends that e-banking is providing numerous good opportunities for banks and non-bank financial institutions to add a low cost distribution channel to their existent distribution channels in order to better serve their customers by offering various products and services with high quality. However, he further contends that e-banking also brings about challenges to traditional banks due to the fact that it neutralizes competitive advantages rooted in a traditional banking network. It is predicted that e-banking continues mushrooming in the times to come. When e-banking is widely utilized and becomes more popular, it is very interesting to forecast the future of traditional banks operating based on their branches.

José Mauro C. Hernandez, José Afonso Mazzon, (2007)\textsuperscript{142} propose a new method to investigate adoption of new technologies and tests this method by looking into the determinants of internet banking adoption in Brazil. The findings show that the variables that influence the intention to use/continue to use IB are not exactly the same as those that influence actual adoption. Specifically, the results seem to suggest that intention to use IB is influenced solely by people's beliefs about IB, while its actual adoption is influenced also by individual characteristics

Joaquín Aldás-Manzano, Carlos Lassala-Navarré, Carla Ruiz-Mafé, Silvia Sanz-Blas, (2009)\textsuperscript{143} analyze how consumer innovativeness can be used


as a variable to positively influence internet banking adoption both directly and reducing consumer perceived risk. The impact of innovativeness and risk on internet banking adoption has been tested through structural equation modeling techniques. Results reveals consumer innovativeness as a key construct to improve e-banking adoption both directly and by its effective role in reducing consumer risk perception of using internet channel in the financial services context.

**Jannatul Mawa, 2010**\(^\text{144}\), E-banking can provide speedier, faster and reliable services to the customers for which they are relatively happy. E-banking services not only can create new competitive advantages, it can improve its relationships with customers. The purpose of this research is to understand the impact of variables of e-banking on customer satisfaction in Bangladesh. The study period is from 2006 to November, 2009 because customers enjoyed the e-banking services newly during this period. Five service quality dimensions namely reliability, responsiveness, assurance, empathy, and tangibles have been established based on the SERVQUAL model and the literature review. These variables have been tested in e-banking to explore the relationship between service quality and the customer satisfaction. The data were gathered through survey interview by a structured questionnaire with 250 customers. The study shows that these factors are the core service quality dimensions for customer satisfaction in e-banking. The study also explores that reliability, responsiveness and assurance have more contribution to satisfy the customers of e-banking in Bangladesh.

**Joseph et al. (1999)**\(^\text{145}\) investigated the influence of internet on the delivery of banking services. They found six underlying dimensions of e-banking


service quality such as convenience and accuracy, feedback and complaint management, efficiency, queue management, accessibility and customization.

**Joao F Proença, Marta Martins Silva and Teresa Fernandes (2010)**

The article discusses the virtualization of the interaction processes between banks and their customers and analyses the influence of the Internet on these relationships. The research finds three factors related to the use of Internet banking which strengthen the relationships between banks and their customers: the intensity of Internet use, the diversity of access locations and the diversity of Internet applications. From a managerial point of view, these findings have implications for the development of new relationship approaches based on technology.

**Jørn Flohr Nielsen, (2002)**

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

**Jiaqin Yang* and Kh Tanveer Ahmed, 2009**

This paper describes a case study about the major issues and challenges in the development of the electronic banking (e-banking) industry of a relatively underdeveloped nation.

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This research shows that even in many less developed nations; the application of e-banking can help their local banks reduce operating costs and provide a better and fast service to their customers. The research objectives are to investigate the current trends and developments in e-banking and provide managerial insights for the banking industry in those underdeveloped nations. The collected data are examined through statistical analysis tools. Managerial implications are discussed with suggestions for future research.

Júlio Püschel, José Afonso Mazzon, José Mauro C. Hernandez, (2010)\textsuperscript{149} This paper's objective is to propose an integrated framework to investigate the adoption intention of mobile banking technology and to test it in the Brazilian context. The framework offers an integrated view, taking into account more predictors than other studies on the adoption of innovations for non-users, the framework was able to explain approximately 69 percent of the dependent variable (intention to adopt mobile banking) variation, which is a figure higher than those obtained in previous studies. It was also observed that the predictors' influence over the criterion variable was different for each group of mobile banking users and non-users.

Mr. D. Joseph Anbarasu, 1997\textsuperscript{150} presented the features, operations, networking and recent developments in a credit card system, Bankers consider ‘minimizes inconvenience’, ‘minimizes cost of transactions’ and ‘time saving’ to be important benefits and ‘chances of government access’, ‘chances of fraud’ and ‘lack of information security’ to be vital risks associate with electronic banking.

Jun and Cai (2001)\textsuperscript{151} identified 17 service quality dimension of i-banking service quality. These are reliability, responsiveness, competence, courtesy,

\textsuperscript{150} Plastic Revolution through information technology 1997 by Mr.D.Joseph Anbarasu, a commerce lecturer and course coordinator of IGNOU at Bishop Heber College, Tiruchirappalli.
credibility, access, communication, understanding the customer, collaboration, continuous improvement, content, accuracy, ease of use, timeliness, aesthetics, security and diverse features. They also suggested that some dimensions such as responsiveness, reliability and access are critical for both traditional and internet banks.

Jonathan Donner; Camilo Andres Tellez 2008 Around the globe, various initiatives use the mobile phone to provide financial services to those without access to traditional banks. Relatively little scholarly research explores the use of these m-banking/m-payments systems. This paper calls attention to this gap in the research literature, emphasizing the need for research focusing on the context(s) of m-banking/m-payments use. Presenting illustrative data from exploratory work with small enterprises in urban India, it argues that contextual research is a critical input to effective 'adoption' or 'impact' research. Further, it suggests that the challenges of linking studies of use to those of adoption and impact reflect established dynamics within the Information and Communication Technologies and Development (ICTD) research community. The paper identifies three cross-cutting themes from the broader literature (amplification vs. change, simultaneous causality, and a multi-dimensional definition of trust), each of which can offer increased theoretical clarity to future research on m-banking/m-payments systems.

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

152 Jonathan Donner; Camilo Andres Tellez mobile banking and economic development linking adoption . impact and use, Asian Journal of Communication, 1742-0911, Volume 18, Issue 4, 2008, Pages 318 – 332
G.Kannabiran, P.C. Narayan (2005)\textsuperscript{154}, Over the last decade India has been one of the fastest adopters of information technology, particularly because of its capability to provide software solutions to organizations around the world. This capability has provided a tremendous impetus to the domestic banking industry in India to deploy the latest in technology, particularly in the Internet banking and e-commerce arenas. This article discusses the experiences of a private-sector bank in deploying Internet banking and e-commerce in India. Strategic alignment of business and IT strategies, planning and implementation of e-banking initiatives and management of benefits are captured, along with key contributions to development.

Keldon Bauer and Scott E.Hein(2006)\textsuperscript{155} Financial service providers have increasingly offered customers new remote access to such services, with Internet banking being the latest example. While Internet banking has been available for years, the early adoption by customers of this technology was disappointing to most. This paper examines the demand for remote access to banking accounts by consumers and finds that when the technology is new, the traditional risk return models including variables allowing for heterogeneous risk add power in modeling the adoption decision. Perceived risks in Internet banking are seen to be responsible for some of the hesitation to adopt. Ironically, older consumers are found to be less likely to adopt Internet banking regardless of their risk tolerances. However, younger consumers are found to be early adopters only when they have relatively high levels of risk tolerance.

Koenig-Lewis, Adrian Palmer, Alexander Moll, (2010)\textsuperscript{156} This paper aims to investigate the barriers for adopting mobile banking services. The results of the study indicated that compatibility, perceived usefulness, and risk are

\textsuperscript{154} G.Kannabiran, P.C.Narayan, Deploying Internet banking and e-commerce-case study of a private sector bank in India, information technology for development, vol.11, issue 4, pp 363-379, Autumn (Fall) 2005.


significant indicators for the adoption of m-banking services. Compatibility not only had a strong direct effect but was also identified as an important antecedent for perceived ease of use, perceived usefulness and credibility. Trust and credibility are crucial in reducing the overall perceived risk of m-banking. Nicole services", International

Krishnan Dandapani, Edward R Lawrence, (2008)\textsuperscript{157}, identify the causes behind the failures of virtual banks. This work underscores the importance of the differing financial metrics in the virtual and brick and mortar banking channel, when analyzing bank failures. This is probably the first study to examine the causes of failures of virtual banks and contrast them with brick and mortar banks.

Kenneth B. Yap, David H. Wong, Claire Loh, Randall Bak (2010)\textsuperscript{158} in this paper examines the role of situation normality cues (online attributes of the e-banking web site) and structural assurance cues (size and reputation of the bank, and quality of traditional service at the branch) in a consumer's evaluation of the trustworthiness of e-banking and subsequent adoption behaviour. The size and reputation of the bank were found to provide structural assurance to the customer but not in the absence of traditional service quality. Web site features that give customers confidence are significant situation normality cues.

Khalil and Pearson (2007)\textsuperscript{159} has found that trust significantly affects attitude towards i-banking acceptance. To encourage i-banking adoption, banks need to develop strategies that improve the customer's trust in the underlying technology. The other factors include quick response, assurance, follow-up and empathy. Security, correct transaction, customer control on transaction

(personalisation), order tracking facilities and privacy are other important factors in the online service that affect the customer satisfaction.

Khalil Md Nor J. Michael Pearson 2008

In this study, we extend the decomposed theory of planned behavior (DTPB) by incorporating trust and examining its impact on an individual's intention to adopt Internet banking. A majority of the technology adoption research has been completed in developed countries such as the U.S. Overall, the results indicate that the proposed model provides a good understanding of factors that influence the intention to use Internet banking. From a theoretical perspective, the findings help further our understanding of the constructs that impact technology adoption in an under researched area: developing countries. It also confirms the multidimensionality of trust and its role in the adoption of Internet banking. From a practical perspective, the findings can help banks who wish to offer Internet banking services make informed decisions about what actions they can take to increase their chances of success.

Katariina Maenpaa, (2006)

explores Internet banking services (IBS), consumers availing the services and the potential development possibilities of the services in the challenging operational environment. The major finding is that three of the consumer clusters do not value service dimensions containing experiential features, whereas the fourth cluster, comprising mainly of youngsters, perceived those service dimensions very appealing.

Liao and Cheung (2002)

found that Singaporeans expectations regarding accuracy, security, transaction speed, user-friendliness, user involvement, and convenience were the most important quality attributes in the perceived usefulness of internet-based e-banking.

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161 Katariina Mäenpää, (2006) "Clustering the consumers on the basis of their perceptions of the Internet banking services", Internet Research, Vol. 16 Iss: 3, pp.304-322.
Z. Liao and W.K. Wong (2008)\textsuperscript{163} empirically explores the major considerations associated with Internet-enabled e-banking systems and systematically measures the determinants of customer interactions with e-banking services. The results suggest that perceived usefulness, ease of use, security, convenience and responsiveness to service requests significantly explain the variation in customer interactions. Both perceived usefulness and perceived ease of use have significant impacts on customer interactions with Internet e-banking services. Perceived security, responsiveness and convenience also represent the primary avenues influencing customer interactions. The findings have managerial implications for enhancing extant Internet e-banking operations and developing viable Internet e-banking service.

Lisa Wessels, Judy Drennan, (2010)\textsuperscript{164} aim to identify and test the key motivators and inhibitors for consumer acceptance of mobile phone banking (M-banking), particularly those that affect the consumer's attitude towards, and intention to use, this self-service banking technology. Perceived usefulness, perceived risk, cost and compatibility were found to affect consumer acceptance of M-banking. The results also support a mediation model, whereby attitude transfers the affects of the consumers' perceptions to their intention to use M-banking.

Luiz Moutinho, Douglas T. Brownlie, (1993)\textsuperscript{165} The nature and direction of the satisfactions that are delivered to consumers of bank services are explored, and the criteria used to evaluate these services are highlighted. The non-metric multidimensional scaling technique enabled respondents' perceptions to be represented spatially. It is revealed that respondents had high levels of satisfaction with regard to the location and accessibility of branches and ATMs,

and acceptance of the current levels of banking fees; but expressed some caution in their evaluation of new and improved services.

Latest developments (2008) ATMs have become a more preferred mode of banking in the Indian banking industry. A lot of customers prefer conducting transactions on ATMs rather than branches as it provides more convenience to customers. According to RBI data there are about 17000 ATMs, while branches across the use are 50000 of these SBI with its seven associates alone has the largest ATM counters of about 600.

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

Long Pham, Thien H Kieu, Tuan M Tran, Huy P Tran E-banking is seen as the newest delivery channel of banks in many developed countries and nobody can deny the fact that such a newest channel is believed to have a significant impact on the bank market. It is contended that e-banking is providing
numerous good opportunities for banks and non-bank financial institutions to add a low cost distribution channel to their existent distribution channels in order to better serve their customers by offering various products and services with high quality. Little research on factors influencing the adoption of e-banking has been implemented in countries that are emerging as new potential markets (such as Vietnam) with very high economic growth rates. Thus, this study has, based on an extensive review of literature on e-banking benefits for both banks and their customers and relevant theories on innovation adoption, proposed a comprehensive model of e-banking adoption by customers in Vietnam.

Liang Han, (2008)\textsuperscript{169} examines the impacts of entrepreneurial online banking and relationship banking on the severity of financial problems perceived by entrepreneurs and their interactive effect. He also investigates how characteristics of individual businesses and entrepreneurial demographics influence SMEs’ financial situation. He found that both entrepreneurial online banking behaviour and relationship banking alleviates the severity of financial problems perceived by entrepreneurs. The relationship affect is less evident for entrepreneurs who most frequently use an online approach to communicate with their banks than for those using traditional methods. Business and entrepreneur characteristics also have a strong impact on the severity

Luis.V. Casaló, Carlos Flavián, Miguel Guinaliu (2008)\textsuperscript{170} Customer loyalty and positive word-of-mouth (WOM) have been traditionally two main goals aimed at by managers. Focusing on the online banking, the importance of these concepts is even greater due to the increasing competence in electronic commerce. Thus, the purpose of this paper is to characterize both concepts in the e-banking context. This research showed that satisfaction with previous interactions with the bank website had a positive effect on both customer loyalty


and positive WOM. In addition, website usability was found to have a positive effect on customer satisfaction and, as expected, loyalty was also significantly related to positive WOM.

Melek Acar Boyacioglu, Tevfik Nadi Hotamis, Huseyin Cetin, 2010. The present study is an attempt to examine the performance of Turkish banks in terms of providing banking products and services through their web sites. A representative sample of 22 banks operating in Turkey was included in this study. The websites of these banks have been analyzed in terms of the financial transaction, non financial transaction, speed, security, uninterrupted serviceability and visual design. Research is conducted in 2009 and shows that Turkish banks perform extremely well in IB. This study also investigates the level of adoption of IB in Turkey. A survey is conducted to obtain customers’ perspectives regarding IB. According to the results obtained from the survey; all of the participants who did not use IB found IB difficult. They did not know how to use IB or found IB service insecure and unclear. Therefore, they prefer face-to-face banking. Moreover, it was observed that the levels of education and income were the factors that most affected IB use. It was concluded that the clients who found IB easy and thought that it served their purpose had been using IB for a longer time. On the other hand, usefulness, web security and personal views did not have a significant influence on the duration of IB use.

Two studies by professor Mathews and Slocum (1970) found a number of in leveling and useful relationships between social class, income and the usage of bank credit cards. They found that members of the lower social classes tend to use their cards for installment purposes, upper classes for convenience. The study also indicated that the upper classes are generally favourable towards using credit to purchase luxury goods and the lower class users tended to use their cards for durable and necessary goods.

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Malhotra and Singh (2007)\textsuperscript{173} carried out a study to find the i-banking adoption by the banks in India. The study suggests that larger banks or banks with younger age, private ownership and lower branch intensity possess high probability of adoption of this new technology. Banks with lower market share also perceive i-banking technology as a means to increase the market share by attracting more and more customers through this new channel of delivery. However, the service quality in i-banking from customers needs thorough analysis to find out the determinants for success and growth of new channel of delivery in India so that useful guidelines for bankers can be extracted. To this end, this study aims at determining the service quality of banks operative in India with regards to i-banking and identifying the important parameters crucial for service quality from customer’s perspective. The study also explores the importance of parameters across the demographic profile of the respondents.

Miranda-Petronella, Vlad (2009)\textsuperscript{174} have stated that E-banking is the first of those banking services that really economize time, because it allows to the user accomplish from behind the computer any operations in the bank account, represents the computational solution that allows to the holder to have access at distance at the capitals from his account, purposing to obtain information about his account situation and the situation of the effected operations, of the payment and of the capitals transfers over a beneficiary, by a computational application, of a authentication method and of a communicational average, the e-banking is absolutely necessary in the integration conditions.

Mattila and Mattila (2005)\textsuperscript{175} claimed that security has been widely recognized as one of the main barriers to the adoption of internet is dependent

upon the availability of internet service and interestingly on a number of several other social and psychological factors as well.

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

**Mathew Joseph, Yasmin Sekhon, George Stone, Julie Tinson, (2005)** The current exploratory study is an attempt to discover the underlying areas of dissatisfaction associated with the banking experience in the UK, particularly as it relates to the implementation of new service delivery technology in the banking industry. The importance-performance grid demonstrates that two of the factors and their underlying attributes fall into the “Keep up the good work” quadrant and the other two factors fall into the “Low priority” quadrant. The first two are areas the organization needs to allocate resources in order to maintain the level of service they provide their clients. From a strategic point of view, this grid provides a tool for strategy development as it gives a clear picture of the factors that are critical for resource allocation.

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Mittal, R.K. & Dhingra, S. (2007) studied the role of technology in banking sector. They analyzed investment scenario in technology in Indian banks but this study was related to the time period before the Information Technology Act and at that time technology in Indian banks was very low. But both the researchers nicely presented their views.

Michel Rod, Nicholas J. Ashill, Jinyi Shao, Janet Carruthers, (2009) examine the relationships among three dimensions of service quality that influence overall internet banking service quality and its subsequent effect on customer satisfaction in a New Zealand banking context. The results show significant relationships among online customer service quality, online information system quality, banking service product quality, overall internet banking service quality and customer satisfaction.

Mavri, M & Ioannou, G(2006) IB is the latest in the series of technological wonders of the recent past. ATMs, Tele-Banking, Internet Banking, Credit Cards and Debit Cards have emerged as effective delivery channels for traditional banking products. Banks know that the Internet opens up new horizons for them and moves them from local to global frontiers.

Mahdi Salehi, Alipour, Mehrdad,(2010) have stated “Now a day’s due to emerging global economy, e-commerce and e-business have increasingly become a necessary component of business strategy and a strong catalyst for economic development. The new information technology is becoming an important factor in the future development of financial services industry, and especially banking industry. The results of this study shows that e-banking

serves several advantages to Iranian banking sector, however, the study also shows that the Iranian customers have not enough knowledge regarding e-banking which is rendering by banking sector in Iran.

**Mark Durkin, (2007)**\(^{182}\) reports the findings of the latest, quantitative phase of a continuing study that explores the impact of the internet on bank-customer relationships. The specific aim is to shed light on customers’ own views about when, how and in which circumstances personal contact with bank staff remains appropriate despite developments in online banking. Motivating and inhibiting influences on interaction with bank staff are identified.

**Mary Loonam, Deirdre O’Loughlin, (2008)**\(^{183}\) in this paper is to explore the emergence of self-service banking technology and investigates customers’ perceptions of internet banking self-service within the Irish financial services sector. This qualitative study the Irish retail banking sector explored consumers’ e-banking interactions and experiences in addition to assessing the dimensions critical to e-banking service quality.

**Malhotra,, P & Singh, B, (2009)**\(^{184}\) The financial products and services have become available over the Internet, which has thus become an important distribution channel for a number of banks. Banks boost technology investment spending strongly to address revenue, cost and competitiveness concerns. The purpose of present study is to analyze such effects of IB in India, where no rigorous attempts have been undertaken to understand this aspect of the banking business.


Mahapatra, Khan, M.S S.S. and Sreekumar (2009) This study aims at evaluating the service quality of internet banking (i-banking) services in India from customer’s perspective. A structured questionnaire containing 44 quality items is administered to various target groups. Seven quality dimensions, viz. reliability, accessibility, user friendliness, privacy/security, efficiency, responsiveness and fulfilment, are identified based on principal component factor analysis. Demographic analysis of data reveals that gender is hardly a bias for use and evaluation of service quality of i-banking in most of the cases across various categories of customers. A valid mathematical model is proposed to assess the overall service quality using regression analysis. The results show that customers are satisfied with quality of service on four dimensions such as reliability, accessibility, privacy/security, responsiveness and fulfillment, but least satisfied with the ‘user-friendliness’ dimension. The empirical findings not only prioritize different parameters but also provide guidelines to bankers to focus on the parameters on which they need to improve.

Milind Sathye 1997 The article reviews the present status of Internet Banking in Australia. It begins with the findings of the Wallis Committee on Internet Banking and then examines the present status with respect to the banks on the net, the services they provide, difficulties the customers face and remedial actions necessary on the part of banks. The article concludes with the observations that Australian banks are lagging behind their counterparts in US, Europe and Japan in providing banking services on the Internet and calls for serious effort by banks, computer specialists, academicians and others to popularize this upcoming area if banking is not to look medieval in Australia when compared to World standards.

Mols, (1998)\textsuperscript{187} It is totally possible for customers to manage their banking transactions whenever they want and to enjoy improved privacy in their interactions with the bank. In addition, customers can enjoy more benefits at lower cost levels by utilizing e-banking.

Mols (2000)\textsuperscript{188} contend that internet banking may bring a dramatic transformation in the way banks build and maintain close relationships with customers. It is therefore crucial for banks to recognize the importance of improving internet banking services so as to ensure that existing customers are receiving the adequate and desired level of internet services and to attract potential customers.

Mohammed Sadique Khan and Siba Sankar Mahapatra, Sreekumar, (2009)\textsuperscript{189} This study aims at evaluating the service quality of internet banking (i-banking) services in India from customer’s perspective. A structured questionnaire containing 44 quality items is administered to various target groups. Seven quality dimensions, viz. reliability, accessibility, user friendliness, privacy/security, efficiency, responsiveness and fulfillment, are identified based on principal component factor analysis. Demographic analysis of data reveals that gender is hardly a bias for use and evaluation of service quality of i-banking in most of the cases across various categories of customers. A valid mathematical model is proposed to assess the overall service quality using regression analysis. The results show that customers are satisfied with quality of service on four dimensions such as reliability, accessibility, privacy/security, responsiveness and fulfillment, but least satisfied with the ‘user-friendliness’ dimension. The empirical findings not only prioritize different parameters but also


provide guidelines to bankers to focus on the parameters on which they need to improve.

Ming-te Lu, Chun-hong, Liu, Jiang Jing, Linjun Huang, (2005)\textsuperscript{190} assess to what Chinese domestic banks’ use of internet banking as a strategic response to the entrance of the WTO is affected by factors both external and internal to the banks.

Myria Ioannou, Judy Zolkiewski, (2009)\textsuperscript{191} The intangible nature of banking services enables financial institutions to deliver them through electronic channels. In addition, the interactive and continuous nature of banking services is conducive to relationship development. It would, therefore, be beneficial for the dyad to build exchange relationships online. This exploratory research investigates the effect of e-banking on the development of retail relationships in Cyprus.

Nafis Alam, Murali Raman, (2010)\textsuperscript{192} Innovations in Information technology have changed the way financial transactions are done in banking industry globally. Banks perceive online banking as a powerful ‘value-added’ tool to attract and retain new customers while helping to eliminate costly paper handling and teller interactions. Online banking has managed to provide customers the convenience, efficiency, effectiveness, and most importantly, the speed needed in today’s dynamic world. As more banks around the world are offering online banking to its customers, it is becoming a rather popular trend. Online banking is an asset both to the bank and the customer. However, countries like Sudan are yet to join the frenzy of this new innovation in an

effective manner. This paper will investigate what are the challenges faced by Sudanese banks in implementing online banking.

Ndubisi and Sinti (2006)\(^\text{193}\) examine the determinant structure of customer attitude on adoption of IB in Malaysia. They show the “attitudinal factors” play a significant role in IB adoption. In addition, IB adoption can predict by behavioral tendency and webpage features. According to this study, easy-to-use technologies and trial ability should be put in place in order to increase adoption. Moreover, risk has no significant influence of adoptions.

Norazah Mohd Suki, (2010)\(^\text{194}\) This paper examines factors that influence the Internet banking adoption among Malaysian consumers. The study sample consists of 100 respondents. The results show that Hedonic oriented Internet banking sites, followed by the perceived Importance of Internet banking to banking needs and Compatibility all significantly affect the adoption of Internet banking by Malaysian consumers. Trial ability has the weakest influence for consumer Internet banking adoption beside Complexity, Risk, and Utilitarian oriented Internet banking sites. The empirical data used for this study was collected in Malaysia market which may have a culturally and technologically different environment from some other countries. This paper makes a contribution to Internet banking literature by providing insights on the factors that affect Internet banking adoption. The results hint that information about Internet banking services and its benefits is a critical factor influencing the adoption. The findings made a contribution in terms of understanding the factors that can contribute to the adoption of Internet banking by Malaysian consumers.

Norizan Mohd Kassim, Abdel Kader Mohammed Ahmed Abdulla, (2006)\(^\text{195}\) This research in this paper aims to investigate and extend the trust-


relationship commitment model to an internet banking setting by adding attraction as a new factor. The findings in the paper indicate that both trust and attraction have significant positive impact on relationship commitment with attraction having a strong positive effect, with communication representing the most important determinant of attraction and having a significant positive relationship with both trust and attraction. The paper shows that, from the managerial perspective, it is necessary for bankers and policy makers to know the relationship between trust and attraction because their influence on the actual commitment is different.

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

Nelson Oly Ndubisi, Queenie Sinti, (2006) This paper examines the determinant structure of customers’ attitude system’s characteristics on adoption of internet banking (IB) by Malaysian bank customers. The results of the study reveal that the attitudinal factors play a significant role in internet banking adoption. Moreover, utilitarian orientation of the website rather than hedonic orientation has significant influence on adoption.

Ndubisi and Sinti, 2006 Besides, the speed, product features availability, and reasonable service fees and charges, as well as the bank’s operations management factor are critical to the success of the e-banks. WAP, GPRS and 3G features from mobile devices are of no significance or influence in

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the adoption of e-banking services in this study. Results also reveal that privacy; security and convenience factors play an important role in determining the users’ acceptance of e-banking services with respect to different segmentation of age group, education level and income level. Moreover, the exposure of internet banking adoption in Malaysia is relatively lower and very little research has been done to understand the key adoption determinants. Though, electronic revolution has commenced in Malaysia a long ago, but Internet banking is still in its infancy stage. So, it’s become very hard for the bank industry to design interventions that would enhance the diffusion of Internet banking.

Nadim Jahangir and Noorjahan Begum,(2008)\textsuperscript{199} This research intends to propose a conceptual framework that will investigate the effects of perceived usefulness, ease of use, and security and privacy on customer adaptation mediated through customer attitude in the context of e-banking. To test the framework, structural equation modeling techniques have been applied to data collected from 227 customers of private commercial banks in Bangladesh. Primarily this study aims to test the theoretical models to measure the causality whether perceived usefulness, ease of use, security and privacy, and customer attitude can foster customer adaptation. The initial results of the study indicate that perceived usefulness, ease of use, security and privacy, and customer attitude are significantly and positively related to customer adaptation. Implications for practicing managers and for future research are discussed.

Neha Dixit, Dr. Saroj K. Datta (2010)\textsuperscript{200} Internet banking is a form of self service technology. The numbers of Internet users have increased dramatically, but most of them are reluctant to provide sensitive personal information to websites because they do not trust e-commerce security. This paper investigates


\textsuperscript{200} Neha Dixit, Dr. Saroj K. Datta Acceptance of E-banking among Adult Customers: An Empirical Investigation in India Journal of Internet Banking and Commerce, August 2010, vol. 15, no.2.
the factors which are affecting the acceptance of e-banking services among adult customers and also indicates level of concern regarding security and privacy issues in Indian context. The finding depicts many factors like security & privacy, trust, innovativeness, familiarity, awareness level increase the acceptance of e-banking services among Indian customers. The finding shows that in spite of their security and privacy concern, adult customers are willing to adopt online banking if banks provide him necessary guidance. Based on the results of current study, Bank’s managers would segment the market on the basis of age group and take their opinion and will provide them necessary guidance regarding use of online banking.

Ong Hway-Boon, Cheng Ming Yu (2003)\textsuperscript{201} One of the most significant implications of technological advances in the banking sector is the possibility of delivering banking services through electronic channels (e-channels). E-channels provide alternatives for faster delivery of banking services to a wider scope of customers. However, prior to the implementation of e-channels, several factors and investment costs must be identified to ensure a more cost effective and efficient execution of e-channel services. The results of the survey suggested that banks’ operation management is the main factor affecting the success of ATMs, PC and branch banking, while product innovation and knowledge development factors are found to have the most significant effect on the success of banking kiosks and phone banking respectively.

Onkar Nath,(2000)\textsuperscript{202} has stated the need of RTGS in inter-bank(inter-institutional) transfer of funds on a real time and gross basis. This system has been considered to be an important one for enhancing the performance of level of banking services. Ortega, BH, Martinez, JJ & Hoyos, JMD(2007) Internet is the cheapest delivery channel for banking products as it allows the entity to reduce


\textsuperscript{202} Onkar Nath,RTGS System(membership regulations), Bank Quest, April-June,2000, pg-34, Ortega, BH, Martinez, JJ & Hoyos, JMD., “An Analysis of Web Navigability in Spanish Internet Banking,” Journal of Internet Banking and Commerce, vol. 12, no. 3. 2007.
their branch networks and downsize the number of service staff. The navigability of the website is a very important part of IB because it can become one of the biggest competitive advantages of a financial entity.

Patrick Ibbotson, Lucia Moran,(2003)\textsuperscript{203} Internal and external forces continue to impact on the financial service sector, making it ever more difficult for traditional banks both to retain their existing small to medium sized enterprises(SME) client base, and to acquire new business clients. The traditionally poor relationship between banks and their small corporate clients has been well documented throughout the years; however, the increased use of electronic banking channels by SME banking customers threatens to change the very nature of that relationship. This paper examines the current nature of the relationship between SMEs and their banks in Northern Ireland and investigates the level of usage of and satisfaction with electronic banking channels in this region.

Padmanaban G, 2005\textsuperscript{204} has stated that the banking in India has undergone rapid transformation. The last two decades have witnessed a sea change in the nature of services offered by banks which has a positive impact on the customers of banks. Technology will be considered as an emerging tool for providing the better customer service.

Phan.D, (2003)\textsuperscript{205}, In the study by IAMAI, it was found that the people are not doing financial transactions on the banks’ Internet sites in India because of reasons such as security concerns (43%), preference for face-to-face transactions (39%), lack of knowledge about transferring online (22%), lack of user friendliness (10%), or lack of the facility in the current bank (2%).


\textsuperscript{204} Padmanaban G., chief manager in charge, Dept of Information Technology, Reserve bank in the Banknet-India’s bank Tech submit at Taj Lands Ends, Mumbai, on September 22, 2005.

Pathrose P.P, (2001)\textsuperscript{206} asserted that banking over the world is undergoing a rapid and radical transformation due to the pervasive influence of IT and breath taking developments in the technology of telecommunications and electronic data processing. IT, which implies the integration of information system with communication technology, has radically altered the traditional ways of doing banking business and allowed banks to wipe out the difference in time as well as distance. It is in this context that this article attempts to trace the present status of hi-tech banking in India, visualize its prospects and look at the challenges and problems. He concludes that in the face of severe competition and escalating expectation of customer for newer products and alternative delivery channels, the contours of banking are being redefined.

Petrus Guriting, Nelson Oly Ndubisi, (2006)\textsuperscript{207} “Adopting the technology acceptance model, this research examines the factors that determine intention to use online banking in Malaysia Borneo. Perceived ease of use and perceived usefulness are the factors considered to be fundamental in determining the acceptance and use of various information technologies. However, these beliefs may not fully clarify behavioural intention towards newly emerging technologies, such as online banking. The results indicate that perceived usefulness and perceived ease of use are strong determinants of behavioural intention to adopt online banking. There is also an indirect effect of computer self-efficacy and prior general computing experience on behavioural intention through perceived usefulness and perceived ease of use.

Pooja Malhotra, Balwinder Singh, (2010)\textsuperscript{208}, This exploratory study is an attempt to present the present status of internet banking in India and the extent of internet banking services offered by internet banks. In addition, it seeks to examine the factors affecting the extent of internet banking services. The


purpose of the study is to help fill significant gaps in knowledge about the internet banking landscape in India. This paper contributes to the empirical literature on diffusion of financial innovations, particularly internet banking, in a developing country, i.e., India

**Perumal .V & Shanmugan, 2004** It provides universal connection from any location worldwide and is universally accessible from any internet linked computer Philip Gerrard, J. Barton Cunningham, (2003) "Internet banking is a form of self-service technology, costing millions of dollars, which leading retail banks have made available in the recent past. An understanding of why users are more accepting of Internet banking services should help bank managers implement this self-service technology. The results show that adopters of Internet banking perceive the service to be more convenient, less complex, more compatible to them and more suited to those who are PC proficient. Adopters were also found to be more financially innovative. The perceptions that adopters had about social desirability, confidentiality, accessibility and economic benefits were viewed no differently when adopters were compared with non-adopters.

**Pedro Cruz, Lineu Barretto Filgueiras Neto, Pablo Muñoz-Gallego, Tommi Laukkanen, (2010)** The aim of this paper is to investigate the perceived obstacles to the adoption of mobile banking services among Brazilian internet users and search for patterns according to socio-demographics variables. The results indicate that the majority of respondents do not use any kind of mobile banking service. Perception of cost, risk, low perceived relative advantage and complexity were revealed to be the main reasons behind the reluctance to use the service. The influence of other background factors is less evident

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Pikkarainen, Karjaluoto, and Pahnila, (2004) defines internet banking as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. Banks use online banking as it is one of the cheapest delivery channels for banking products. With the exception of cash withdrawals, internet banking gives customers access to almost any type of banking transaction at the click of a mouse. Indeed the use of the internet as a new alternative channel for the distribution of financial services has become a competitive necessity instead of just a way to achieve competitive advantage with the advent of globalization and fiercer competition.

Polatoglu and Ekin (2001) have examined the level of adoption of the IB in Turkey, and discussed the factors affecting its diffusion. This study reveals that IB services not only reduce the operational costs of the banks, but also increase the level of customer satisfaction. They clarify that IB services have added benefits in terms of customer attraction, and it may lead to higher competition by bringing new products and alternative channel offerings.

Prabir K Biswas 2007 Historically banks have been the major intermediary between demand and supply of capital and the success of such intermediation is closely linked to the trust built over the years between banks and customers. With geographical expansion of banks in India together with banking sector reforms, globalization and use of technology, banks have been finding difficulty to adapt to the new competitive environment and customers often find themselves in the receiving end of banks’ lack of customer service. Customer service has also not improved due to lack of involvement on the parts of the executives, officers, and other staff of the banks as exemplified by non-deployment of resources and non-integrating customer service as part of banks’

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place customer service audit and accountability at different levels as part of banks’ integrated risk management framework

Qadar Bakhsh Baloach, M. Imran Khan, Adnan Alam, (2009)\textsuperscript{214} This comparative study aims to provide a better understanding of how online banking services between Islamic and conventional commercial banks are prevailing in Pakistan. This purpose is achieved via one research question which focuses on how the bank’s online services can be described. A multiple case study strategy is used, focusing on two banks, one Islamic bank namely Meezan bank and other conventional commercial bank namely Citibank of Pakistan. Data was collected via observation and interaction with the websites, focusing on feedback from the customers using the banking websites. In using these websites for their banking, the findings show that the main benefits included lower costs, efficiency and time saving retention and Islamic banks should concentrate more on professional and technical skills. Websites should have clear and brief information in order to build trust with the customer.

Qureshi, T, Zafar, M & Khan, M, 2008,\textsuperscript{215} User adoption of a technology has become a crucial or significant measure of the success or effectiveness of that technology. Revolutionary development in Information and Communication Technology (ICT) in the past 20 years has impacted individuals as well as businesses in a profound way. Technological innovations are having significant importance in human general and professional life. This era can safely be attributed as technology revolution. The quick expansion of information technology has imbibed into the lives of millions of people. Rapid technology advancements have introduced major changes in the worldwide economic and business atmosphere.

\textsuperscript{214} Qadar Bakhsh Baloach, M. Imran Khan, Adnan Alam, A Comparative Study of Islamic and Conventional Banks of Pakistan, Journal of Managerial Sciences, 2009 Volume IV, Number 1 pg-69-93.

Ratnasingam (2002)\textsuperscript{216} argued that the impact of technology trust in Web services implies the use of security services such as digital signatures, encryption mechanisms, and authorization mechanisms. This paper relates to the condition of the consumers’ perceptions on security issues in E-banking. Mainly consumers’ perceptions are derived from the set of technologies that are customarily visible to them over the Web.

Rao et al. (2003)\textsuperscript{217} provide a theoretical analysis of Internet banking in India and found that as compared to banks abroad, Indian banks offering online services still have a long way to go. For online banking to reach a critical mass, there has to be sufficient number of users and the sufficient infrastructure in place. I.T. has introduced new business paradigms and is increasingly playing a significant role in improving the services in the banking industry.

Rajesh Kumar Srivastava (India) 2007\textsuperscript{218} 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. This research was carried out to validate the conceptual model of internet banking. 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 are the customer’s perceptions about internet banking and what are the drivers that drive consumers. How consumers have accepted internet banking and how to improve the usage rate were the focus of research area in this study. The study revealed that education, gender, income play an important role in usage of internet banking.

\textsuperscript{218} Rajesh Kumar Srivastava (India), Innovative Marketing, Volume 3, Issue 4, 200.
Ramayah et al. (2002)\textsuperscript{219} suggest that users will eventually lose interest in using Internet banking if they feel that it is not useful to use Internet banking even though the system is rather easy to handle.

Redelinghuis, A. and Rensleigh, C., 2010\textsuperscript{220} South Africa has a well-developed and established banking system which compares favourably with those in many developed countries (e.g. USA), but also sets South Africa apart from many other emerging market countries like Egypt and Brazil. Four dominant banks, namely the Amalgamated Banks of South Africa (ABSA), Standard Bank, Nedcor and First National Bank (FNB) influence the South African banking environment. Internet banking has slowly been taking off in South Africa since 1996 as consumers are attracted to the convenience, safety and lower costs of doing banking online. Trust is a significant component of Internet banking and online services and products. It was established that the findings of this research could assist financial institutions with fostering and building greater value adding relationships with their customers.

Reeti Agarwal, Sanjay Rastogi and Ankit Mehrotra (2009)\textsuperscript{221} Determining factors affecting customer perception and attitude towards and satisfaction with e-banking is an essential part of a bank's strategy formulation process in an emerging economy like India. To gain this understanding in respect of Indian customers, the study was conducted on respondents taken from the northern part of India. The major findings depict that customers are influenced in their usage of e-banking services by the kind of account they hold, their age and profession, attach highest degree of usefulness to balance enquiry service among e-banking services, consider security & trust most important in affecting

\textsuperscript{219} Ramayah T, Jantan Muhamad, Nasser Mohd, Noor Mohd (2002), Receptiveness of Internet Banking Malaysian Consumers, Universiti Sains Malaysia
\textsuperscript{220} Redelinghuis, A. & Rensleigh, C., 2010, 'Customer perceptions on Internet banking information protection', SA Journal of Information Management vol.12 issue .1
\textsuperscript{221} Reeti Agarwal, Sanjay Rastogi and Ankit Mehrotra, Customers’ perspectives regarding e-banking in an emerging economy journal of retailing and consumer services, vol.16,issue 5,, September 2009, Pages 340-351.
their satisfaction level and find slow transaction speed the most frequently faced problem while using e-banking.

**Raechel Johns, Bruce Perrott, (2008)** The purpose of this paper is to show how technology has dramatically altered the way businesses operate in a business-to-business (B2B) context and has had profound influences on services, altering the way services are delivered. It is believed that the increased use of self-service technologies (SSTs) impacts on B2B relationships. The paper seeks to explore the impact of the use of internet banking on business relationships.

**Robert Hamilton, Paul Hewer, 2009**, Recent market research findings and financial services consultants' reports have signalled that electronic commerce will play an increasingly important role in consumers' future financial lives. This paper discusses such evidence and seeks to contextualise the debate on the future of banking through a discussion of consumers’ financial behaviour, the UK Government’s position and an analysis of UK financial providers’ current marketing of Internet banking services to consumers.

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

**Richard A. Feinbery (1986),** had conducted four experiments and one study to test the hypothesis that stimuli associated with spending can elicit

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spending responses. The experiments and the study proved that credit card stimuli directed spending such that the probability, speed or magnitude of spending was enhanced in the presence of credit cards. The customer protection bodies feel that the availability of credit cards particularly through credit card has outstripped people’s ability to handle it. The money management council, a charity which aims to help people handle their finance more effectively, states that education is trailing far behind the development of consumer credit and the transfer funds via the plastic card where as there has been an enormous increase in it s usage.

Rupa Rege Nitsure,(2004) E-banking has the potential to transform the banking business as it significantly lowers transaction and delivery costs. This paper discusses some of the problems developing countries, which have a low penetration of information and telecommunication technology, face in realising the advantages of e-banking initiatives. Major concerns such as the 'digital divide' between the rich and poor, the different operational environments for public and private sector banks, problems of security and authentication, management and regulation, and inadequate financing of small and medium scale enterprises (SMEs) are highlighted.

Dr. Saroj Upadhyay, Deblina Ganguly (2009) In today’s cut throat competitive environment, the banks are making efforts to acquire new customers and also trying to retain the existing ones. With increased number of banks, products and services and with practically zero switching costs, customers are easily switching banks. If they are not satisfied with the services offered by their existing banks. Banks are finding it difficult to attract new customers, and more importantly retain existing customers.

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227 Dr.Saroj upadhyay, Deblina Ganguly. Developing CRM Philosophy in banks. Professional bankers- The Icfai University press. Vol ix, issue 7 July 2009].
K. Saikrishna (2009)\textsuperscript{228} This article discusses the innovations in information technology being used in the Indian banking system. The advent of technology in banking has widened the scope for entry in the new markets and has helped the banks to develop innovative products, services and effective delivery channels.

N Sakthivel & P Murugeshwari, 2009\textsuperscript{229} In the ever-changing scenario, banks have evinced keen interest in delivering value-added products and services with the help of rapidly evolving electronic and telecommunication technologies. Internet banking is a web-based service that allows customers to access their account information. In this system, customers are allowed to log on to the bank's website with the help of identification issued by the bank and a Personal Identification Number (PIN). Often, the range of products and services offered by each bank on internet varies widely in terms of content. It is observed that internet banking is offered as a value-added service by most of the banks, in particular, by banks which do not have a large branch network. The present study is an attempt to analyze the customers’ attitude towards internet banking services of ICICI Bank at Gobichettipalayam

Sayar and Wolfe (2007)\textsuperscript{230} compare the IB services in the UK and Turkey. They reveal that Turkish banks offer a wider range of web services compared to British banks, despite the fact that the UK has a more favorable environment for IB in terms of its banking sector and technological infrastructure. There is a conceptual difference regarding the security issues between British and Turkish banks. Turkish banks use technology to avoid fraud, whereas the British banks prefer more conventional methods.

\textsuperscript{228} K.Saikrishna Leveraging IT for better banking services by. Pg.44, professional banker, August 2009.
\textsuperscript{229} N Sakthivel & P Murugeshwari Customers' Attitude Towards Internet Banking: A Study with Reference to ICICI Bank, oct-dec 2009.volxxx no 3,vinimaya archives.
Salim Al-Hajri and Arthur Tatnall 2007\textsuperscript{231} To fully benefit from moving to new national economies an up-to-date banking industry is important, but Omani banks continue to conduct most of their banking transactions using traditional methods. This paper reports on research to investigate inhibitors and enablers of Internet banking in Oman, comparing this to the situation in Australia. Data was collected from interviews with bank managers in each country, based on a consideration of each bank manager’s perceptions of four factors that might affect their decisions to adopt, or not adopt Internet technologies: Relative Advantage, Organizational Performance, Customer/ Organizational Relationship and Ease of Use. It is hoped that the results will be useful in seeing why Omani banks have been slow to adopt Internet technology and to encourage them to make the change. By utilizing e-banking, it is very convenient for consumers to get the access to their banks and accounts to implement their banking transactions. At its sophisticated sense, e-banking is named transactional online banking due to the fact that it embeds in the provision of facilities, such as accessing accounts, transfer of funds, and buying financial products or services online (Sathye, 1999)\textsuperscript{232}. In this paper, without the loss of generality, the term e-banking and online banking (or even Internet banking) are interchangeably utilized with the same meaning.

Sharma and kaur (2004)\textsuperscript{233} studied customer satisfaction in rural banks. This study is concerned with Hoshiarpur district of Punjab. They used five-point likert scale and found that the rural customers are not satisfied with the strategies adopted by Gramin Bank.

\textsuperscript{231} Salim Al-Hajri* and Arthur Tatnall, (2007), Inhibitors and Enablers to Internet Banking in Oman - A Comparison with Banks in Australia.


Shastri (2001)\(^\text{234}\) analyzed the effect and challenges of new technology for banks. Technology has brought a sea change in the functioning of banks. The earlier manual system of preparation of vouchers is slowly being automated thereby saving a lot of time and effort. The use of automated teller machines (ATMs) and introduction of IT are more than in the past.

Shanti (1984)\(^\text{235}\) made a pioneering attempt to examine the issues relating to delivery of customer services in Indian banks as against the backdrop of a sound conceptual framework. She has provided an empirical analysis of bank employers’ job behavior and its relationship with bank services delivery. She has found that lack of job motivation, lack of freedom at branch level, lack of leadership qualities among bank managers, job security, etc., have resulted in poor quality customer services in Indian banks.

D. Sharma, 2009\(^\text{236}\), Until the advent of ATMs, people were unaware and/or not directly affected by the technological revolutions happening in the banking sector. ATMs became the major revelation for customers, since it offered the facility to avoid long queues in front of the cashiers in banks. It also provided them the flexibility of withdrawing money—anytime, anywhere.

Santos (2003)\(^\text{237}\) emphasizes that e-channels enable consumers to compare offers online, and hence online consumers would expect the same or even higher levels of service quality.

Suganthi et al. (2001)\(^\text{238}\) conducted the review of Malaysian banking sites and revealed that all domestic banks were having a web presence. Only 4 of the ten major banks had transactional sites. The remaining sites were at

informational level. There are various psychological and behavioral issues such as trust, security of Internet transactions, reluctance to change and preference for human interface which appear to impede the growth of Internet banking.

Sharma R C and Singh J (1993)\(^{239}\) analyzed the quality of customer services produced by Standard Chartered Bank (SCB) and Punjab National Bank (PBN). They concluded that the quality of customer services of PNB branch is very poor in comparison to SCB branch. But the main limitation of study is that it is related to two banks only.

Singh R and Malhotra A (1993)\(^{240}\), analyzed customer satisfaction in banking services in Amritsar city. They concluded that public sector banks should improve their services to attract new customers. Bank management should prepare a list of existing and prospective customers and carryout detailed studies on customer satisfaction in order to improve their services.

Siva Rama Prasad.P. (2004)\(^{241}\) in his article has stated that “Commercial banks generally install their ATM in urban area only. They refuse to install the ATMs at rural and semi urban areas. This system has to be changed. The rural population also gets the benefit of ATMs and other related new services. If agriculturist borrowers are provided access to networked ATMs, their needs can be met effectively. Hence, the Indian banking sector has to think about installing or providing the advanced services into rural and semi urban areas.

Sirluck Rotchanakitunmnuai, Mark Speece, (2003)\(^{242}\), Many Thai Banks are currently implementing internet banking. Banks that offer service via


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

**Stafford, 2004**

Recent research also suggests that increased use of online banking and bill paying can actually decrease the occurrence of identity theft by taking personal information outside the mailbox and eliminating a paper trail.

**Sourabh Sharma & K S Thakur, 2010**

This paper is a survey of public and private sector bank customers’ responses toward computerization of banking services. The objective of this paper is to measure the customers’ awareness, perception, and the level of satisfaction with regard to Virtual Banking Services offered by the Indian public and private sector banks in the city of Jaipur. This survey declares that in comparison, private sector bank customers are satisfied with regard to ATM, I-Banking and IVRS services. However, the study also reveals that public sector banks are preparing to take on private sector banks in this regard.

**Serkan Akinci, Safak Aksoy, Eda Atilgan,(2004)**

“This descriptive study was conducted to develop an understanding of consumers’ attitudes and

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adoption of Internet banking among sophisticated consumers. The analyses revealed significant differences between the demographic profiles and attitudes of users and non-users. IB users were further investigated, and three sub-segments were defined according to a set of bank selection criteria. Finally, based on the similarities between various Web-based bank services, four homogeneous categories of services were defined.

M. Sadiq Sohail, Nassar M Shaikh,(2008)\(^{246}\), the purpose of this paper is to measure the quality of service from customers perspective. With an enormous growth in internet banking, this paper discusses how banks can be competitive by providing quality services. Based on the review of literature, the paper uses empirical research to analyze service quality of internet banking services provided by banks in Saudi Arabia.

Sultan Singh, Ms. Komal,2009\(^{247}\) This paper presents the impact of ATM on customer satisfaction. This is a comparative study of three major banks i.e. State Bank of India, ICICI bank and HDFC bank. This paper has been divided into two sections. First section presents the introduction of ATM, brief history of three Banks compiled through the literature available in the field. It also includes the review of the various services provided by the three banks under study. Second section presents the result obtained on the basis of the data collected for the three banks.

Sylvie Laforet, Xiaoyan Li, (2005)\(^{248}\) The aim of this study is to investigate the market status for online/mobile banking in China. With the recent and forecasted high growth of Chinese electronic banking, it has the potential to develop into a world-scale internet economy and requires examination. The issue of security was found to be the most important factor that motivated Chinese


consumer adoption of online banking. Main barriers to online banking were the perception of risks, computer and technological skills and Chinese traditional cash-carry banking culture. The barriers to mobile banking adoption were lack of awareness and understanding of the benefits provided by mobile banking.

Dr. D. Subbarao, 2009\textsuperscript{249} The volume of transactions through National Electronic Clearing Service [NECS] introduced in September 2008 is also increasing. As on March 31, 2009 the NFS [The National Financial Switch] network covered a total of 38714 automated teller machines [ATMs] of 34 banks. On an average, a daily volume of 890180 transactions [of which 256156 transactions pertained to balance enquiry and 634024 pertained to cash withdrawal] were routed through the NFS in March 2009 as against a daily volume of 267598 transactions in March 2008. since April 1, 2009 customers have the facility of using ATM of any bank for cash withdrawal free of cost thereby making ATMs national payment outlets

Sohail, M..S. and Shaikh N. (2008)\textsuperscript{250}. With an enormous growth in Internet banking, this paper discusses how banks can be competitive by providing quality services. This paper measures the quality of service from customers' perspective. Results based on a factor analysis identify three factors that influence users' evaluation of service quality of Internet banking services. These factors are labeled as ‘efficiency and security’, ‘fulfillment’ and ‘responsiveness’.

Shastri, R.V.(2000)\textsuperscript{251}, studied the emergence of IT in banking sector. He highlighted some challenges faced by banks regarding IT implementation. This paper also highlighted future outlook of IT oriented banks.

\textsuperscript{249} Dr.D.Subbarao, Governor. RBI monthly bulletin, Monetary policy statement 2009-10. May 2009, Pg 723.
Stuart J Barnes and Brian Corbitt (2003)\textsuperscript{252} The internet and the mobile phone - two technological advancements that have profoundly affected human behaviour in the last decade - have started to converge. The products of this association are mobile data services. Using a variety of platforms, services are being created to enable mobile devices to perform many activities of the traditional internet, albeit in a reduced format for mobile devices. One area of activity is mobile (m-) banking (one of the first areas of commercial transaction on the wireless internet). Banking is an area that has extended in many different ways in recent years, including telephone and online banking. M-banking provides yet another channel for banking services, and in emerging markets, provides some possibility for becoming a primary channel. This paper examines the strategic implications of m-banking and the strategic positioning of m-banking services in different markets. The paper concludes with a discussion of the future for m-banking services.

Sinkey 1998\textsuperscript{253} The use of internet technology has a direct relationship with the profitability of the bank. The banks which invest in e-banking tend to raise their profit margins by reducing costs and increasing the not-interest incomes which in turn will increase the return on assets and return on equity.-

Syed Shah Alam, Ali Khatibi, A. Solucis Santhapparaj, Mohammad Talha, (2007)\textsuperscript{254} The goal of this paper is to examine the development and prospects of internet banking in Bangladesh, which found that lack of infrastructure is the major issues for internet banking. Compared to private and foreign banks, nationalized commercial banks are far behind implementing internet banking system in banking transactions.. This paper outlines the key internet banking trends and events in Bangladesh. Further, the research focuses

on the issues that are related to internet banking and provides strategy and directions for the development of internet banking in Bangladesh.

Sciglimpaglia, D. Ely, (2002) many financial institutions are actively developing new electronic banking products for their retail customers. These efforts can succeed only if their managers focus the promotion of the new services toward those customers who are most likely to find them attractive. The analysis of a 6-branch financial institution presented in this study suggests that instructions are vulnerable to loss of customers to rivals with extensive online services. The likelihood of current customers being tempted to do business online with another institution was shown to increase with the level of customer transaction use on the internet. Current customer account relationships are found to be predictive of electronic services use in general. And, interest in the use of specific online services is related to differing customer relationships in addition to ordinary demographic and balance information. These findings can be useful in identifying potential users from a customer relationship management perspective.

Steve Worthington (2003) the article is based on both secondary and primary research into the use of plastic payment cards in China. The secondary research offers an understanding of the history and current situation of payment cards in China. Whilst the primary research provides insights into the uniqueness of the Chinese market from the perspective of the cardholders, card issuers and merchant acceptors. As barriers to entry into China remain high for foreign banks, particularly if they wish to pursue a branch centric approach to distribution, the article also draws attention to the advantages of a card centric approach to market entry. Other Asia-Pacific markets such as Australia, Hong

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Korea and Japan have already embraced the plastic card as a means of payment at the point-of-sale.

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

Sven C. Berger, (2009) “This article aims to explain the adoption of self-service technology with pro-active sales applications (automated teller machines or kiosk systems) in brick-and-mortar outlets with special respect to personality traits, relationship characteristics and previous online banking usage. The study validates the framework and identifies relevant moderating effects.

Strauss and Corbin, 1990. On searching the literature on internet banking, we found several motivations for a fresh investigation of the key factors influencing banking consumer adoption of the internet channel. First, existing studies are largely based on surveys that, as positivist approaches, are unable to uncover the deeper issues identified by interpretive methods, or the real issues that emerge from grounding the research in data

Thulani, D, Tofara, C & Langton, R. 2009. IB refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank’s website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations


Tan and Teo (2000)\textsuperscript{261} suggest that banks that fail to respond to Internet banking are likely to lose customers and that the cost of offering Internet banking services is often less than the cost of keeping branch banking.

Thamaraiselvan Natarajan, Senthil Arasu Balasubramanian, Sivagnanasundaram Manickavasagam (2010)\textsuperscript{262} In the retail banking context, convergence of technologies has given birth to different channels of distribution like Automatic Teller machines (ATM), internet banking, and mobile banking. This enables the customer to avail the banking services at any time and anywhere. These technological interfaces are known as self-service technologies (SSTs). Customers availing banking services through these SSTs get more benefits in terms of time, cost, and energy. Despite these benefits, the customer trial, adoption, and repeat usage of SSTs vary among banking customers. Although the kinds of service one can avail from these SST are similar, the patronage among the SSTs differs. The SST channel choice could be attributed to various factors viz., Nature of service to be availed or purpose, Perceived risk, Requirements and Benefits. When it comes to predicting customer priority among alternatives, Analytical hierarchy process (AHP) has been proved as an effective technique. This paper explores the factors influencing customer choice of SSTs by employing AHP technique.

Terry M.Wickre (1980)\textsuperscript{263}, in his study to increase the customers awareness about visa card and then master charge card issued by the bank conducted a pre and post study before their various advertising strategies found that by advertising customers were becoming more aware of credit card and how it worked. Advertising had increasing the consumer’s ability to discriminate one bank card from another and reduces confusion in the card holder’s minds. It also

\textsuperscript{261} Tan, M. and Teo, T. 2000. “Factors Influencing the Adoption of Internet Banking.” Journal of the Association for Information Systems, vol 1, iss.5, pp 1-42.


\textsuperscript{263} Terry M. Wickre, Product differentiation in Bank Card marketing, Bank Marketing, 1980 Pg 14-17.
provides bankcard customers with convenient and beneficial plastic cards and EFT services

Thornton and White (2001) compared several electronic distribution channels available for banks in the USA and concluded that customer orientation – towards convenience, service, technology, change, knowledge about computing and the internet – affected the usage of different channels.

Tooraj Sadeghi, Kambiz Heidazadeh Hanzaee,(2010), This paper seeks to investigate the key factors underlying customer satisfaction with electronic banking services in an Islamic country, Iran. The paper provides a model of seven factors on the following dimensions: convenience, accessibility, accuracy, security, usefulness, bank image, and web site design. Some of these factors illustrate a significant statistical difference between males and females.

Tommi Laukkanen, (2007) The paper provides enhanced information for business managers about both positive and negative customer value perceptions in internet and mobile banking. By understanding how and what kind of value different service channels provide for customers service providers are better enabled to create actions to enhance internet and mobile banking adoption. The contribution of the paper lies in achieving a more profound understanding on consumer value perceptions to internet and mobile banking. It expands the literature on electronic and mobile commerce and on electronic banking especially

Tommi Laukkanen, (2006) The financial services sector has recently undergone changes unprecedented in its history. Understanding customers'
needs and values has become more important for financial institutions than ever before, not only due to the changing environment but also because of changed customer behaviour. This study explores the customer-perceived value of two e-financial services, namely electronic fund transfer service and internet brokerage service. This is done by using a means-end approach. It is a qualitative in-depth interviewing method that is used for explaining how product or service attributes facilitate consumers’ achievement of desired end-states of being. The results indicate how different electronic services create value for customers in service consumption. The findings provide banking executives with a better understanding of what kind of value customers perceive in the consumption of different e-financial services. The results indicate similarities and differences in the customer-perceived value between the services explored.

Tommi Laukkanen, (2007)268 “The purpose of the study is to increase the understanding of the diverse retail channel preferences of online bank customers by examining their channel attribute preferences in electronic bill paying. Two different groups of online customers were examined: those who pay their bills over the internet and those who, in addition, have experience of using a mobile phone for this service. The study provides new insights for decision makers in the electronic retail sector and especially in banking.

Tsung Lin Ching, Lai Jung-Yu, 2008269 Due to the burgeoning development of electronic commerce (e-commerce), the broader applications of emerging service-Internet banking (e-banking) services have been introduced and provided by financial holding companies or banks at an accelerating rate in recent years since they can provide efficient, reliable, securable, and convenient financial services, such as online payment, deposit/loan, trading, and clearing/settlement, via electronic channels (e-channels, e.g., Internet and phone) for customers. E-banking services not only can create new competitive

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advantages, perhaps, but also can improve their relationships with customers for banks. Obviously, e-banking can offer better services required by corporations and individuals, it could be a strategic niche no matter for banks or their customers. Conceivably, how to implement e-banking successfully is becoming a critical management issue. Unfortunately, research pays scarce attentions on what factors drive success of e-banking, particularly from corporate customers' perspective. For the reason, this paper attempts to explore what factors affect corporate customer satisfaction with e-banking (CCSEB) which is one surrogate variable of success of e-banking services. Based on a survey of 178 respondents collected from Taiwan companies, the results support that environmental, organizational, and globalization factors will affect customer satisfaction with e-banking significantly.

**Thomas Ogoro Ombati  Stephen Onserio Nyamwange, 2010**

Importance and Performance of Various Factors Considered In the Electronic Banking Services. Technology-based self-service has greatly changed the way that service firms and consumers interact, and are raising a host of research and practice issues relating to the delivery of e-service which has become increasingly important not only in determining the success or failure of electronic commerce, but also in providing consumers with a superior experience with respect to the interactive flow of information. 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 across-sectional survey design which questioned respondents on e-banking services. The population of study mainly constituted of customers of banks within the Central Business District (CBD), Nairobi. 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

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services as the most important dimension, followed by convenient location of ATM, efficiency (not 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.

Unnithan and Swatman (2001)\textsuperscript{271} studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking by focusing on two economies, Australia and India. The study found that Australia is a country with internet-ready infrastructure as far as telecommunication, secure protocols, PC penetration and consumers’ literacy are concerned. India, by comparison, is overwhelmed by weak infrastructure, low PC penetration, developing security protocols and consumer reluctance in rural sector. Although many major banks have started offering i-banking services, the slow pace will continue until the critical mass is achieved for PC, internet connections and telephones. However, the upsurge of IT professionals with growing demands is pressuring the government and bureaucracy in the country to support and develop new initiatives for a faster spread of i-banking.

Uppal R.K.(2006)\textsuperscript{272} with stratified sampling of 500 bank customers, explained the impact of computerization on the satisfaction of customers of all bank groups and concluded that customer services are quite better in fully computerized banks and further in e-banks in partial and non-computerized banks. The study is only concerned with the urban sector of Punjab.

Uppal, R.K. & Kaur, R. (2007)\textsuperscript{273} studied the impact of Information Technology on various parameters of bank performance and concluded that Indian banking industry is fastly moving towards IT. The future of e-channels is very bright.

\textsuperscript{272} Uppal R K (2006), Indian Banking and information technology, new century Publications, New Delhi.
Uppal, R.K.; Chawla, Rosy, (2009)\textsuperscript{274}, This study highlights customer perceptions regarding e-banking services. The study investigates the perceptions of the bank customers regarding necessity of e-banking services, quality of e-banking services, bank frauds, future of e-banking, preference of bank customers regarding banks, comparative study of banking services in various bank groups, preferences regarding use of e-channels and problems faced by e-bank customers. The major finding of this study is that customers of all bank groups are interested in e-banking services, but at the same time are facing problems like, inadequate knowledge, poor network, lack of infrastructure, unsuitable location, misuse of ATM cards and difficulty to open an account.

R.K.Uppal (2008)\textsuperscript{275} In the post-LPG (Liberalization, Privatization and Globalization) era and Information Technology (IT) era, transformation in Indian banks is taking place with different parameters and the contours of banking services are dynamically altering the face of banking, as banks are stepping towards e-banking from traditional banking. On the basis of five-point likert-type scale, this paper empirically analyzes the quality of e-banking services in the changing environment. With different statistical tools such as weighted average method and ranking, the paper concludes that most of the customers of e-banks are satisfied with the different e-channels and their services, but the lack of awareness is a major obstacle in the spread of e-banking services. The paper also suggests some measures to make e-banking services more effective in the future. Banks have been forced to strike a balance between speed and security. The enormous amount of data that are to be fed to the system call for robust and very modern technologies and qualified professionals to man the system. An attempt has been made in this paper to discuss the evolution of new generation banking as the major trend in post liberation era of Indian banking and the

relevance of traditional banks. The paper also attempts to bring out the issues and challenges underlying the functioning of demand generation banks in the contemporary banking scenario looking at the trends and developments initiated

R K Uppal & Rimpi Kaur, 2008\textsuperscript{276} IT has transformed the business environment, the world over. It has a major impact in helping banking service and their customers with the introduction of a number of e-channels like ATMs, EFTs, Credit Cards, Internet-banking, Mobile-banking, Tele-banking, etc. It has bridged the gaps in terms of the reach and coverage of systems, and enabled better management of banking business. The present paper attempts to analyze the impact of IT on the profitability of banking industry in India. The present paper contains analysis of correlation and regression between profitability and different e-channels to study the impact of IT on banks’ profitability. It is concluded from the data that IT has nominal impact on profitability of old private sector banks but foreign banks show high impact, whereas public sector banks and new private sector banks have average impact on their profitability. Overall, IT has very low impact on profitability of Indian private sector banks as compared to public sector banks and foreign banks proving 20 per cent more impact. The paper concludes with some recommendations to improve IT related business in Indian banking industry.

Uppal R.K. (2009)\textsuperscript{277} studied the customer service in Indian commercial banks based on time factor. He inferred that there is a significant difference among three sector of banks with regard to the time customers have to spent to transact a business the e-banks are more efficient with regard to time factor.

R.K.Uppal (2010)\textsuperscript{278} In present day banking, total automation of banking operations is an imperative need for all banks to attract more customers, provide

\textsuperscript{276} R K Uppal & Rimpi Kaur Indian Banking Moving Towards a Better Tomorrow volxxix. no 3 oct-dec 2008, Vinimaya archives
efficient services, and survive in the emerging new competition, apart from the profit motive which is the primary objective of the business. In order to achieve these goals of business, various channels have been developed through technology. ‘Mobile Banking’ is one of the best alternative channels available to customers for quick, correct and efficient service at anytime and anywhere. The present paper is devoted to explore the extent of Mobile banking in Indian banking industry where cell phone users are increasing at unexpected rate. Time period taken for study is 2000-2001 to 2006-2007 because this period is the eye-witness of infant condition of IT and during the same period IT became mature. Simple statistical tools like average, standard deviation, co-efficient of variation are used to calculate the efficiency of various bank groups providing the service of M-banking. On the basis of analysis, the paper concludes that the private sector banks are on the top in providing the M-banking services to their customers and have high profitability as compared to other bank groups under study except foreign banks. The paper also highlights the benefits of M-banking to customers as well as to bankers and suggests some strategies with their possible solutions like to spread awareness regarding M-banking and to increase its area and scope to enhance M-banking services in India, particularly in rural and semi-urban areas.

**Dr. R.K. Uppal (2011)**

The present paper exhibits the growth of information technology in various bank groups. In our country in 2009, 79 percent branches are under core banking. The maximum technology is taking place in new generation private sector banks as well as foreign banks. 43.5 percent are off site ATMs in our country. Public sector banks have more on site ATMs where as new private sector banks and foreign banks have more off site ATMs. The paper also suggests some strategies to enhance e delivery channels in banks particularly in public sector banks.

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279 Dr. R.K. Uppal, E-DELIVERY CHANNELS IN BANKS-A FRESH OUTLOOK International Refereed Research Journal Vol.– II, Issue1, January 2011, Pg 181-191
Unnithan and Swatman (2001) studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking by focusing on two economies, Australia and India. The study found that Australia is a country with internet-ready infrastructure as far as telecommunication, secure protocols, PC penetration and consumers' literacy are concerned. India, by comparison, is overwhelmed by weak infrastructure, low PC penetration, developing security protocols and consumer reluctance in rural sector. Although many major banks have started offering i-banking services, the slow pace will continue until the critical mass is achieved for PC, internet connections and telephones. However, the upsurge of IT professionals with growing demands is pressuring the government and bureaucracy in the country to support and develop new initiatives for a faster spread of i-banking.

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

Vijaya Ratnam N and Suguna Kumari. A 2005, have stated that the bankers have to evolve new approaches, new and innovative products to keep pace with the ever changing and growing expectations of the customers. Banks must upgrade their technology to achieve breakthrough in this area. Technology upgradation is an important aspect to speedup the servicing in all spheres of banking activity and to fulfill the customers need. Un precedence changes resulting from internet revolution have built the confidence on the Indian banks and they are now in a position to face the competition even from the international banks. It is true that electronic banking has reduced operational costs.

substantially by cutting unnecessary duplication of work and also enables to extend quality services to the customers

Verghese and Ganesh (2003)\textsuperscript{283} analyzed customer services in PSBs and old private sector banks based on the responses of 776 customers in Kerala. They found that there is no difference between the two types of the bank branches.

Vinh Sum Chau, Liqing W.L.C. Ngai, (2010)\textsuperscript{284} “This paper aims to investigate the perceptions, attitudes and behaviour of the youth market for internet banking services (IBS). The authors find that young people (age 16-29) have more positive attitudes and behavioural intentions towards using IBS than other user-groups. It has also confirmed that there is a positive impact of IBS quality on satisfaction and loyalty.

Vichudu Nui Polatoglu, Serap Ekin (2001)\textsuperscript{285} An exploratory study of consumer acceptance of Internet banking (IB) services is conducted in a Turkish bank. Examines both consumer-related factors that may affect the adoption of an innovation or a product (such as complexity, perceived risk, and relative advantage) as well as organizational factors such as marketing effort. The results suggest that IB not only reduces operational cost to the bank, but also leads to higher levels of customer satisfaction and retention. Accordingly, it is argued that IB is strategically important to the banking sector in an emerging economy, such as in Turkey

Wao-Ching Poon,2007\textsuperscript{286} The purpose of this paper is to explore the determinants of users’ adoption momentum of e-banking in Malaysia. Results

indicate that all elements for ten identified factors are significant with respect to the users’ adoption of e-banking services. Privacy and security are the major sources of satisfaction. Besides, the speed, product features availability, and reasonable service fees and charges, as well as the bank’s operations management factor are critical to the success of the e-banks.

Walfried M. Lassar, Chris Manolis, Sharon S. Lassar, (2005)\(^{287}\). This paper explores the relationships between consumer innovativeness, self-efficacy on the internet, internet attitudes and online banking adoption, while controlling for personal characteristics. It distinguishes between innate consumer innovativeness, a generalized personality trait, and internet-domain-specific or actualized innovativeness in order to explore consumer characteristics’ impact on adoption. While results confirm the positive relationship between internet related innovativeness and online banking they also surprisingly show that general innovativeness is negatively related to online banking.

Williamson, Kirsty and Lichtenstein, Sharman, 2006\(^{288}\). This paper provides an understanding of how and why specific factors affect the consumer decision whether or not to bank on the internet, in the Australian context. A theoretical framework is provided that conceptualized and links consumer-oriented issues influencing adoption of internet banking. The findings suggest that convenience is the main motivator for consumers to bank on the internet, while there is a range of other influential factors that may be modulated by banks. The paper suggests that banks will be better able to manage consumer experiences with moving to internet banking if they understand that such experiences involve a process of adjustment and learning over time, and not merely the adoption of new technology. Specifically, the findings suggest that convenience is the main motivator for consumers to bank on the internet, while


there is a range of other influential factors that may be modulated by banks. The findings also highlight increasing risk acceptance by consumers in regard to internet-based services and the growing importance of offering deep levels of consumer support for such services. Gender differences are also highlighted.

Wendy W.N. Wan, Chung-Leung Luk, Cheris W.C. Chow, (2005)\textsuperscript{289} The study sought to investigate factors that influenced Hong Kong bank customers’ adoption of four major banking channels, i.e. branch banking, ATM, telephone banking, and internet banking. Specifically, it aimed to focus on the influences of demographic variables and psychological beliefs about the positive attributes possessed by the channels. Overall, ATM was the most frequently adopted channel, followed by internet banking and branch banking, and telephone banking was the least frequently adopted channel. Psychological beliefs about the extent to which a channel possessed certain positive attributes were more predictive of adoptions of ATM and internet banking than adoptions of branch banking and telephone banking. Demographic backgrounds were strongly associated with adoption of all banking channels except ATM. A major research implication is that the theory of reasoned action is less applicable when a behavior is habitual, such as the adoptions of branch banking and telephone banking.

Wise and Ali (2009)\textsuperscript{290} argued that many banks in Bangladesh want to invest in ATMs to reduce branch cost since customers prefer to use them instead of a branch to transact business. The financial impact of ATMs is a marginal increase in fee income substantially offset by the cost of significant increases in the number of customer transactions. The value proposition however, is a significant increase in the intangible item customer satisfaction. The increase translates into improved customer loyalty that in result in higher customer


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

Wu et al. (2004) evaluate the web site usability of IB in Taiwan. Their study indicates that there is a gap between the user expectation and actual usability of Web sites. Moreover, the results show that old banks are more experienced than new banks and private banks are more competitive than government-owned banks to survive in a competing market.

Yang et al. (2004) argue that customers assess the online product portfolio as they prefer firms which offer a substantial selection of e-products to satisfy their diverse needs. p.1149-1174.

Yap, Kenneth. B, Wong, David H, Loh, Claire, Bak, Randall, (2010) This study that examines how traditional service quality and a bank’s size and reputation influences trust in e-banking. The purpose of this paper is to examine

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the role of situation normality cues (online attributes of the e-banking web site) and structural assurance cues (size and reputation of the bank, and quality of traditional service at the branch) in a consumer’s evaluation of the trustworthiness of e-banking and subsequent adoption behaviour.

Ya-Yueh Shih, Kwoting Fang, (2004)294 This paper explores the relationships between consumer innovativeness, self-efficacy on the internet, internet attitudes and online banking adoption, while controlling for personal characteristics. The study integrates the technology acceptance model and adoption of innovation framework to develop predictions of online banking acceptance. It distinguishes between innate consumer innovativeness, a generalized personality trait, and internet-domain-specific or actualized innovativeness in order to explore consumer characteristics’ impact on adoption. The findings show that general innovativeness is negatively related to online banking.

Yibin, MU (2003)295 indicated the improvement of the system infrastructure. According to him, improvements of the system infrastructure are to: a) improve the system for credit cards and other forms of electronic transaction; b) build-up transaction reporting services; c) improve payment system; and d) improve telecommunications infrastructure. Once the infrastructure is placed properly, then banks can push customers to use new delivery channels by giving guarantee on security.

Yong J. John, G.E. Gorman, (2002)296 “This paper provides an insight into how South Koreans access the Internet and use Internet services such as banking and commerce. The paper shows overall Internet use in relation to users and their behaviour, and presents data on Internet services such in banking and

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e-commerce. Data are taken from reports issued by the Korean Network Information Centre in 2002

Yi-Shun Wang, Yu-Min Wang, Hsin-Hui Lin, Tzung-I Tang, (2003)\textsuperscript{297} The explosion of Internet usage and the huge funding initiatives in electronic banking have drawn the attention of researchers towards Internet banking. In the past, the conventional focus of Internet banking research has been on technological development, but this is now shifting to user-focused research. Although millions of dollars have been spent on building Internet banking systems, reports have shown that potential users may not use the systems in spite of their availability. This points out the need for research to identify the factors that determine acceptance of Internet banking by the users. These beliefs may however not fully explain the user's behavior toward newly emerging IT, such as Internet banking. Using the technology acceptance model (TAM) as a theoretical framework, this study introduces “perceived credibility” as a new factor that reflects the user's security and privacy concerns in the acceptance of Internet banking. It also examines the effect of computer self-efficacy on the intention to use Internet banking. It also demonstrates the significant effect of computer self-efficacy on behavioral intention through perceived ease of use, perceived usefulness, and perceived credibility

Zhaohua Deng, Yaobin Lu, Shimin Deng, Jinlong Zhang, (2010)\textsuperscript{298} The article examines the factors that influence the adoption of mobile banking through technology acceptance model (TAM) in China. The study shows that consumer intention to use mobile banking is predicted using TAM. The study emphasizes that user's attitude toward mobile banking is influenced by trust-based construct and perceived credibility.

Zeithaml, V.A., Parasuraman, A. and Malhotra, A. (2001)\textsuperscript{299}. Although research has shown that technology has many advantages, it can also make service delivery more complex and affect service quality. They contend that many customers cannot clearly determine their expectations of internet services.

Zeithaml (2000)\textsuperscript{300} contends that despite no direct interaction between the customer and service provider, each service element provided in the electronic environment represents an opportunity for the organization to reinforce its level of quality to customers.

Zeithaml (2002)\textsuperscript{301} argues that organizations should focus on all the encounters that occur prior to, during and after internet transactions. He further argues that organizations should focus on all the encounters that occur prior to, during and after internet transactions. If organizations focus on developing efficient internet services, it can become a prevailing factor to increase the overall service offerings. It may contribute to maintaining and enhancing the image and reputation of the firm which will in turn lead to acquire the trust of customers.

Zeithaml, V.A, Berry, L.L and Parasuraman A. (1996)\textsuperscript{302}, in order to enhance a bank’s reputation, improve its customer retention, attract new customers, and increase its financial performance and profitability, banks should provide quality service to their customers. They use different criteria to evaluate the quality of service they receive from internet banking. These criteria are likely to differ in their importance, usually some being more important than others.

Ziqi Liao and Wing-Keung Wong (2007) This paper empirically explores the major considerations associated with Internet-enabled e-banking systems and systematically measures the determinants of customer interactions with e-banking services. The results suggest that perceived usefulness, ease of use, security, convenience and responsiveness to service requests significantly explain the variation in customer interactions. Exploratory factor analysis and reliability test indicate that these constructs are relevant and reliable. Confirmatory factor analysis confirms that they possess significant convergent and discriminative validities. Both perceived usefulness and perceived ease of use have significant impact on customer interactions with Internet e-banking services. Perceived security, responsiveness and convenience also represent the primary avenues influencing customer interactions. In particular, stringent security control is critical to Internet e-banking operations. Furthermore, prompt reactions to the service requests from customers should encourage them to use Internet e-banking services. The findings have managerial implications for enhancing extant Internet e-banking operations and developing viable e-banking systems and services.

Ziqi Liao and Michael Tow Cheung (2002) Consumer attitudes toward the usefulness of and willingness to use Internet e-retail banking were identified and measured. Our survey was undertaken in Singapore, because its geography and well-developed infrastructure implied similar and small physical- and telecommunication costs, thereby highlighting the differences between traditional and Internet-based retail banking upon the latter’s introduction. The data showed that expectations of accuracy, security, network speed, user-friendliness, user involvement and convenience were the most important quality attributes underlying perceived usefulness. Regression discovered that willingness to use depended significantly on the first five factors, allowing the interdependencies or marginal rates of substitution between them to be estimated. Our results draw

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attention to demand-side changes in explaining the recent slowdown in Internet e-retail banking, and may also be useful for development planning and marketing.

The next chapter deals with the profile of the study area, study unit and the progress of e-banking in India.