A STUDY OF EFFECTIVENESS OF MOBILE BANKING SERVICES WITH REFERENCE TO ITS USAGE AND CUSTOMER SATISFACTION IN M.P. REGION

A Thesis
Submitted to
Devi Ahilya Vishwavidyalaya, Indore
for the Degree of
Doctor of Philosophy
in
Management
2015

Under the Supervision of

Dr. Jayant Sonwalkar
Professor, Institute of Management Studies & Directorate, Distance Education, Devi Ahilya University, Indore

Submitted by

Ms. Ekta Rokade
Lecturer, School of Economics Devi Ahilya University, Indore

RESEARCH CENTRE
Institute of Management Studies, D.A.V.V.
INDORE (M.P.)

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Institute of Management Studies, DAVV, Indore

Director,
Institute of Management Studies,
Devi Ahilya Vishwavidyalaya,
INDORE

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DECLARATION

(Para 12 B)

I hereby declare that the thesis entitled ***"A Study of effectiveness of Mobile Banking Services with reference to its usage and customer satisfaction in M.P.Region "*** *is my own work conducted under the supervision of* ***Dr. Jayant Sonwalkar*** *at Institute of Management Studies, DAVV, Indore, M.P., India, approved by the Research degree Committee. I have worked for more than Four years with my supervisors.*

I further declare that to the best of my knowledge , the thesis dose not contain any part of any work, which has been submitted for the award of any degree either in this University or in any other university without proper citation.

Supervisor

Dr. Jayant Sonwalkar
Professor, Institute of Management Studies
Devi Ahilya University, Indore

Research Scholar:

Ms. EKTA ROKADE
Lecturer, School of Economics,
Devi Ahilya University,
Indore

Director
Institute of Management Studies
Devi Ahilya vishwavidyalaya ,indore
Director,
Institute of Management Studies,
Devi Ahilya Vishwavidyalaya,
INDORE

RESEARCH CENTRE
Institute of Management Studies, DAVV, Indore (M.P)

CERTIFICATE

This is to certify that the Ph.d. work entitled ***"A Study of effectiveness of Mobile Banking Services with reference to its usage and customer satisfaction in M.P. Region"*** *is a piece of research work done by* ***Ms. Ekta Rokade*** *under my guidance and supervision for the degree of Doctor of Philosophy in Management from Devi Ahilya Vishwavidyalaya, Indore (M.P.) India. That the Candidate has put in an attendance of more than 200 days with me.*

To the best of my knowledge and belief the thesis:

(i) Embodies the work of candidate himself.

(ii) Has duly been completed.

(iii) Fulfills the requirements of the ordinance relating to the Ph.D. degree of the University, and

(iv) Is up to the standard both in respect of contents and language for being referred to the examiner.

Date:
29/5/15

Supervisor

Dr. Jayant Sonwalkar

Director
Institute of Management Studies
Devi Ahilya vishwavidyalaya ,indore

Director,
Institute of Management Studies,
Devi Ahilya Vishwavidyalaya,
INDORE

UNDERTAKING

I the undersigned a Ph.D. Scholar in Institute of Management Studies Declare that I have not joined any other course of study or appeared at any other examination conducted by the University during the tenure of my registration for the Ph.D. Degree Course.

E. Rokade
29/05/2015.

(Ms.EKTA ROKADE)

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First and foremost, all praise is due to God for bestowing me with health, knowledge and patience to complete this work.

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I consider it is my privilege to place on record the help, support and encouragement received from respondents of Indore who took their initiative in filling the questionnaire in spite of their busy schedule. I also place on record, my sense of gratitude to one and all, who directly or indirectly, have their hand in this venture and my apology that I could not mention personally one by one.

Thanking you

Ms.Ekta Rokade

PREFACE

As the world moves towards a global economy, fast and prompt money remittances would be needed for creating efficient markets and sustainable economic relationships. Dealing with expanded realms of opportunity, the most successful financial activities will be those that find ways to best leverage cost effective technologies to harness the banking and postal networks to make a seamless network of financial products and services. As the economy interlinks and networks expand, it will be those entities that most efficiently transform, integrate and adopt the business models in such a way that economy and majority of people gets benefited.

Over the years, several studies have been impacted by researchers and academicians to understand the significance of mobile banking services through different means of technology products. The regressive motivation has been to lower the transaction costs, increased efficiency, transparency and customer flexibility and usability. The wide spread of mobile phone amongst the masses and thrust for seamless money transfers by integrating the banking sectors to India post through mobile banking would provide value enhancement. Mobile banking is the evolutionary step after internet banking where the banks can collaborate with other entities to offer the latest in banking services in variety of business domains. It is expected that mobile phones will be the most preferred and convenient device for conducting banking transactions and emerging as one of the major payment channels in India.

This study is divided into seven chapters:

The Chapter 1 consists of Introduction of the topic; Technological Developments in Banking Sector, Performance of E-Banking, Concept of Mobile Banking, M-Banking Products and Services, A Conceptual Model has been framed on Mobile Banking, Customer Satisfaction with the effectiveness of Mobile Banking Services and Determinants of Customer Satisfaction. This chapter also includes Relevance of the Study, The

function of mobile banking ,payment mechanism and RBI guideline of m-bankimg.

The Chapter 2 discusses the Indian Banking Industry and Service Quality in terms of Strategies and Factors adopted by the Banking Sector, SERVQUAL approach, CRM in Mobile Banking Services and Banking Profile.

The Chapter 3 consists of Review of Literature in lieu of the dimensions of mobile banking services.

The Chapter 4 deals with Research methodology consists of research design, pilot study, sampling technique, sample size, data collection, validity and reliability of the instruments, objectives of the study, and hypotheses.

The Chapter 5 consists of data analysis & findings and deals with different aspects of research essential for the study. The study is exploratory and as well as descriptive research in order to examine the effectiveness of mobile banking services. It deals with the objectives and hypotheses of the study. The sample is based on the primary sources. Through SPSS Package (17.0 version) Factor Analysis, Correlation, Regression, ANOVA and Chi-Square are used for the analysis, interpretation of data and results and deals with descriptive analysis of demographic characteristics.

The Chapter 6 The chapter presents the findings & discussion on the factors based hypotheses testing results.

The Chapter 7 The chapter discusses the conclusion, limitations and future research direction and suggestions reached by the researcher on the basis of result of study.

Bibliography discusses all the authors and their works which are duly acknowledged. The references used to complete this study were compiled under the bibliography in alphabetic order. Kindly see the bibliography for the references.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Banking Sector in India has passed through an exciting and challenging phase. The reforms in the Indian financial sector have led the Indian Banking to undergo drastic changes through the creation and diversification of products/ service portfolio, entry of new Private Sector and foreign banks, institutional changes, adoption of modern technology, globalization of banking activities etc. The system has expanded rapidly after nationalization in 1969 and 1980. The banking services that were mostly confined to urban areas are now expanded to rural areas also. Since 1990s the government has been implemented many banking sector reforms which have completely changed the pace, face and character of Indian banking sector.

1.1.1. PURPOSE OF THE STUDY

The overriding purpose of the study is to examine the effectiveness of mobile banking services and its impact on customer satisfaction. Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. Mobile banking which is an integral part of m-Commerce is defined as availing banking and financial services with the help of mobile telecommunication device. The mobile phone has dramatically changed life of people and still there seems to be much work left for it. In this competitive era service quality is one of the critical success factors that influence the competitiveness of the banking sector. For developing services, perceived service quality can be viewed as a concept for understanding. Whereas customer satisfaction is a concept for the evaluation of how these services are fulfilling the needs and desires of customers. To retain customers, banks should try to make customers satisfied with the effectiveness of banking services. Thus it is crucial for deep understanding the dimensions of customers' satisfaction towards the effectiveness of mobile banking services. Nevertheless, the mobile banking service market is still in its infancy, leaving a great deal of room for development. It is necessary to identify the factors that affect the

satisfaction level with the mobile banking services. Hence, this study has explored the factors that are associated with the effectiveness of mobile banking services.

1.1.2. JOURNEY OF INDIAN BANKING SYSTEM

The banking sector is a major part of the financial system. Without a sound and effective banking system, any nation cannot have a healthy economy. Indian banking system is a very old and the first bank in India was established in 1786. (Since then, the journey of Indian Banking System can be segregated into three distinct phases mentioned below:

- Phase I – from 1786 to 1969 (Early phase of Indian banks)
- Phase II – from 1969 to 1991 (Nationalization of banks and prior to Indian banking sector reforms)
- Phase III – after 1969 (Indian financial and banking sector reforms)

Phase I

The first Indian Bank was set up in the year 1786. It was The General Bank of India. The East India Company established three banks, which were amalgamated in 1920, and Imperial Bank of India was established. It started as private shareholders' banks mostly with Europeans shareholders. After 1865 some banks were established exclusively by Indians such as Allahabad Bank, Punjab National Bank Ltd. Bank of India, Bank of Baroda, Canara Bank etc. Reserve Bank of India came in 1935. (RBI (1998)[1]

During the first phase, growth was very slow and banks also experienced periodic failures between 1913 and 1948. There were approximately 1100 banks, mostly small. To streamline the functioning and activities of commercial banks, the Government of India came up with The Banking Companies Act, 1949 which was later changed to Banking Regulation Act 1949. Reserve Bank of India was vested with extensive powers for the supervision of banking in India as the Central Banking Authority. During those day's public had lesser confidence in the banks. Moreover, funds were largely given to traders.

[1] RBI (1998) Report of the committee on Banking sector reforms (The Narsimham committee) Mumbai : reserve bank of India

Phase II

After independence, government had put its efforts to reform the banking sector. It stared extending banking facilities in rural and semi urban areas. In 1969 major portion of nationalization was carried out. This step brought 80% of the banking segment in India under Government ownership. After the nationalization, banking sector had been successful to built confidence among the public. The branches of the public sector bank in India rose to approximately 800% in deposits and advances took a huge jump by 11,000%. Banking, in the sunshine of Government ownership, gave the public implicit faith and immense confidence about the sustainability of these institutions.

Phase III

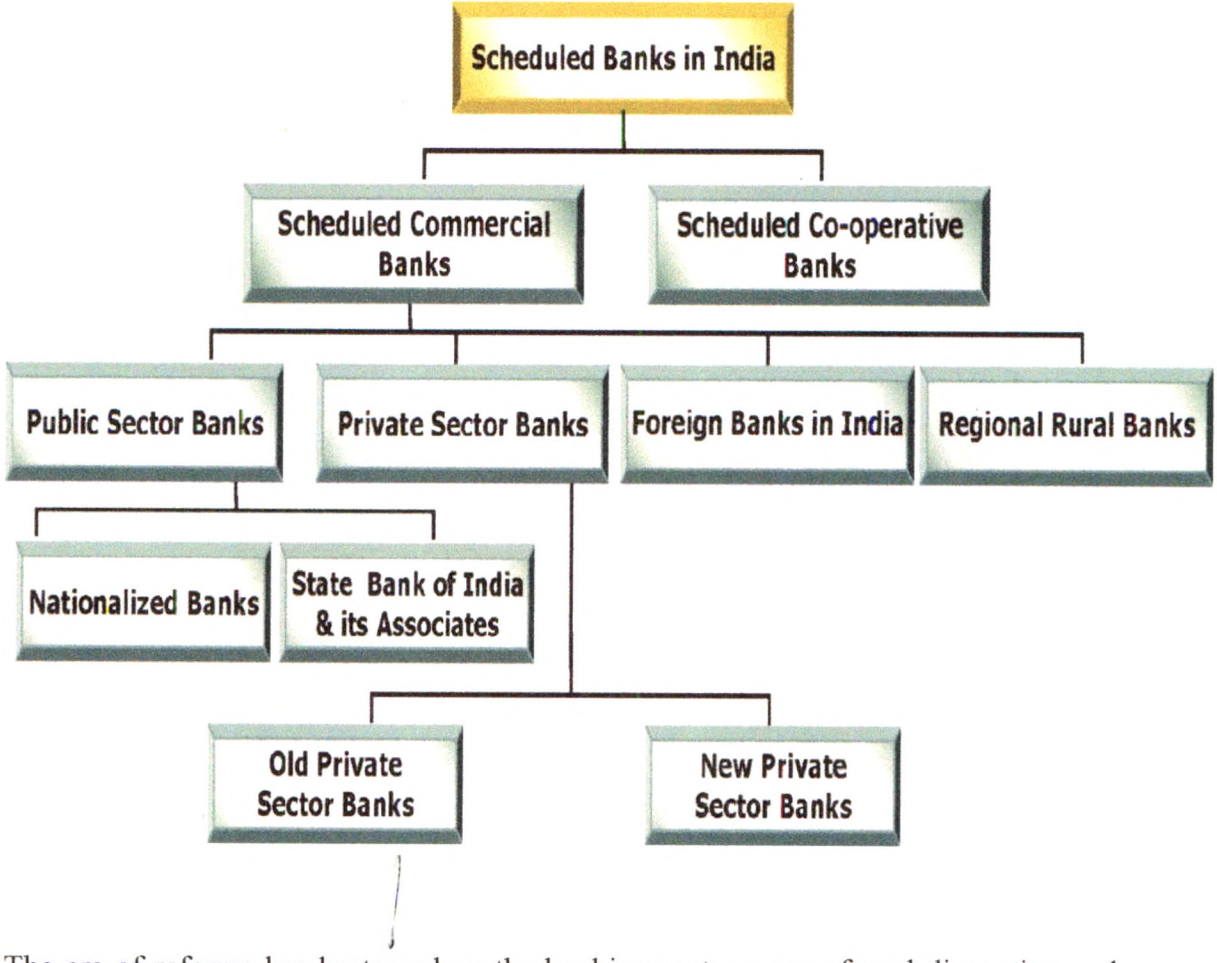
It refers to innovation and technology. Information Technology was introduced in the existing system. The technology has changed the face of banking in the form of ATM< Net banking and Tele banking. This phase has introduced many more products and facilities in the banking sector. In 1991, under the chairmanship of M. Narasimham, a committee was set up by his name, which worked for the liberalization of banking practices. Today, the country is flooded with private and foreign banks and their ATM stations. Efforts are being put to give a satisfactory service to customers. The entire system became more convenient and swift. More importance is given to time than money. At present in India all the banks, both nationalized as well as private banks are providing multiple facilities to their customers which include ATM, Net banking, Tele banking, Mobile banking, Credit card, Debit card, D-mat account etc. (Vij Madhu 2003)[2]

At present, State Bank Group is the biggest and oldest banking group in India. It has 83rd position in the world's largest 1000 banks. The group has 27 banks contributing almost 76% in total banking business. Other nationalized banks are also improving and enhancing their IT based services. Several major banks are either offering e-banking services or planning to do so in near future. Many of the major private banks like ICICI, HDFC, IDBI, Bank of Punjab and UTI are offering e-banking services and comment that India has a high growth potential for e-banking.

[2]Vij Madhu, (2003) "The New World of Banking: A Paradigm shift", Journal of Management Research, Vol.3, December.

Before go in deeply to understand the mobile banking services, it is an essential to study the structure of the Banks in India.

FIGURE 1.1 STRUCTURE OF BANKING INDUSTRY IN INDIA (RESERVE BANK OF INDIA)



The era of reforms has bestowed on the banking sector a new found dimension and has enabled it to move closer to international best practices. The financial reforms and the introduction of regulatory norms related to capital adequacy, income recognition, asset classification and provisioning have enhanced the functioning of Indian banks as well as their accountability. The financial foundation of our economy i.e. banking is today a robust and vibrant sector finding its strength in various aspects like improvement in technology, core banking facilities, increase in its retail activities, healthy competition, growing number of banking products for the household as well as the corporate sector and improved financial performance.

In 2009, the number of total ranches in the country stood at 80,200. The following table shows the growth of the ranches in the country in last five years:

TABLE 1.1: DETAILS OF BRANCHES

As On	Rural	Semi-Urban	Urban	Metropolitan	Total
March 31, 2009	31476	19126	15273	14325	80200
March 31, 2010	32493	20855	16686	15446	85480
March 31, 2011	33905	23114	17599	16419	91037
March 31, 2012	36356	25797	18781	17396	98330
March 31, 2013	37953	27219	19327	17844	102343

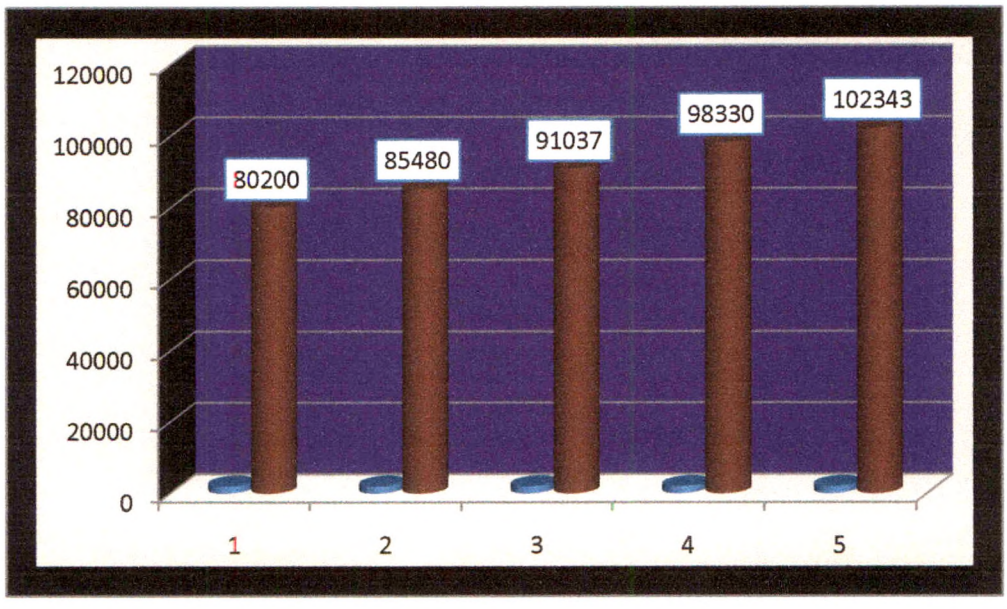


Figure 1.2: Bar Chart on Bank Branches

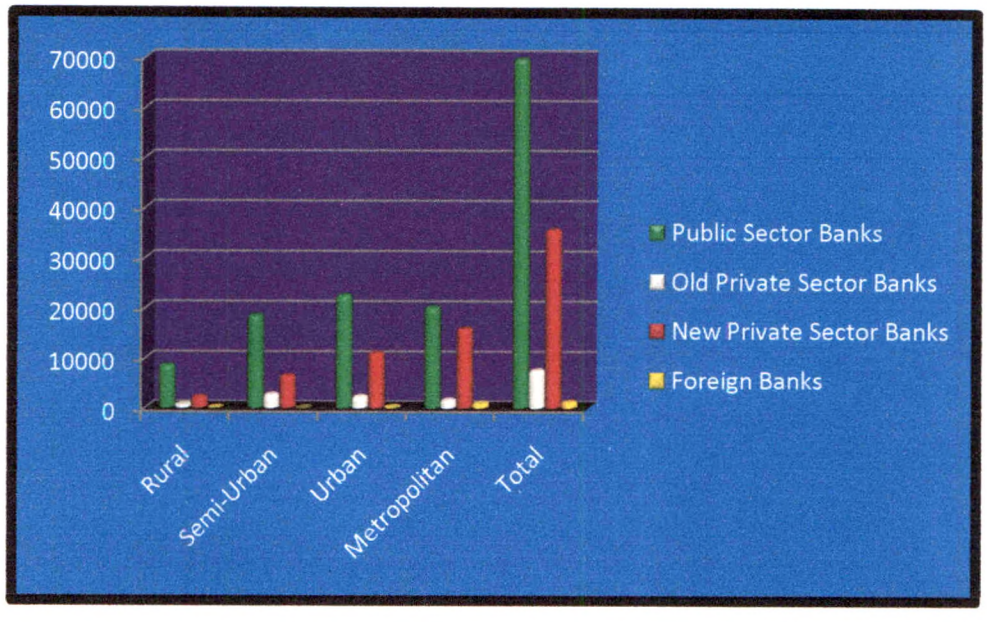
The above figure shows that the bank branches are rapidly increasing and constantly fulfill the expectations of the customers. In 2009 the number of bank ranches is 80200 and increased upto102343 in 2013. In December 1969, there were just 8826 scheduled commercial bank branches in India. This number was 59,762 in March 1990 and stands at 1, 02, 343 end of March, 2013. The above chart reflects the 37% bank branches are in the rural areas and 26% in semi-urban areas, constituting 63 per cent

of the total numbers of branches in semi-urban and rural areas of the country. The Nationalized banks have around 4 times the number of ranches of the Private Sector banks in India.

TABLE 1.2: NUMBER OF ATMs

Bank Group	Rural	Semi-Urban	Urban	Metropolitan	Total
Public Sector Banks	8552	18445	22518	20137	69652
Old Private Sector Banks	768	2760	2354	1684	7566
New Private Sector Banks	2214	6484	10995	15842	35535
Foreign Banks	30	21	244	966	1261
Total	11564	27710	36111	38629	114014

FIGURE 1.3: CHART ON ATMs



The above chart reveals the number of ATMs as on 31, March 2013. The number of ATMs Private Sector banks is almost equal to the number of ATMs in Nationalized Banks, but half of the number of Public Sector Bank ATMs. This indicated the high number of ATMs of the SBI Group.

Banks are the most important service institutions in the economy of any country. Especially, in the Indian economy it plays catalytic role in the socio-economic

development since independence. It includes not only public sector but also private sector banks. After the nationalization, banks have changed from class banking to mass banking. Before nationalization of commercial banking in India, all private sector banks were dealing with banking business based on business approach and opened their most of branches in the urban areas. But now their approach has been changed and many banks are opening their branches in the rural areas. (Uppal R. K. and Kaur Rimpi , 2009)[3]

It is evidenced that, Indian banking sector is growing significantly during post reform period with novelties and exclusiveness. They play a significant role in the service sector in the economy. Despite their social attachment there is a tremendous growth of the banking industry in India. Almost banks in India are struggling for the customer satisfaction so as to retain their customers and expand their customer base for good positions in the banking industry. Since 1985, almost all banks are providing advanced banking services with the help of Information and Communication Technology (ICT). Unfortunately it is realized that, ICT based banking services are not meeting all needs of all types of customers.

Since 1991, Indian banking has witnessed a paradigm Shift in the financial reforms. It has created and provided new opportunities to the customer, but this is a challenge. Under the financial liberalization many foreign banks and financial Institutions are coming in India. They are using high-tech services to the customers. Therefore, Indian banks now have to develop technology savvy banking services with world class service standards for satisfy their customers worldwide. Competing with such foreign banks is a challenge to Indian banks. However, it has been witnessed as an amazing change in the Indian banking sector as a part of the financial sector reforms. Prior to economic liberalization, Indian public sector banks have enjoyed a protected market in the banking industry. But after economic liberalization, Indian banks are exposed to free market competition. Consequently, customers' retention has becoming crucial. Today, growing competition in banking market is not highly stressed profits oriented banking but also it has moved towards customer centric and mass banking. Competition has forced to go for a new marketing policy in banking sector. They have introduced a new strategy of customer centricity in banking for the customer satisfaction and their retention. It has become very important for the banks to retain at

[3] Uppal R. K. and Kaur Rimpi, (2009) "Indian banking moving towards a better tomorrow", Vinimay, Vol. XXIX No.3 .

least their existing customer and think for enlarging the same. It is not only problem of public sector banks in India but also a problem of private sector banks because many foreign banks and financial institutions are aggressively entering & expanding Indian banking market. Therefore, Indian banks should try to satisfy their all types of customers by providing good quality services. (Kamakodi N., M Basheer Ahmed Khan (2008) [4]

Financial Inclusion: It is one of the top most priorities of the Government. Exclusion of a large number of people from any access to financial services inhibits the growth of our country. On August 28, 2014 The Prime Minister launched the ***Pradhan Mantri Jan Dhan Yojana with the Tagline 'Mera Khata Bhagya Vidhata'.*** The objective of this Yojana is to provide benefit to the estimated 7.50 crore households. The Yojana has implemented in two phases:

PHASE I:

- Universal access to banking facilities for all households across the country through a bank branch or a fixed point Business Correspondent (BC) called Bank Mitra within a reasonable distance except areas with infrastructure and connectivity constraints.
- To cover all households with at least one Basic Banking Account with RuPay Debit card having inbuilt accident insurance covers of Rs. 1 lakh.
- This scheme also envisages expansion of Direct Benefit Transfer under various Government Schemes through bank accounts of the beneficiaries of.
- The issuance of Kisan Credit Card (KCC) as RuPay Kisan Card is also proposed to be covered under the plan.

PHASE II:

- To provide micro-insurance to the people.
- To implement the sector Pension schemes in unorganized sector.

Competition in service industry is realized in the global business. To acquire such high-tech uses is begin a challenge in imperfect money market. The phrase "Customer

[4] Kamakodi N., M Basheer Ahmed Khan (2008) , "Customer Expectations and Service Level in E-Banking Era: An Empirical Study", The ICFAI University Journal of Bank Management, Volume VII Issue 4 (Nov.) Pages: 50-70

Satisfaction" does not only express a happy customer, but rather complex than that. In the service organizations like banking and financial companies, it is an indicator of service quality, brand perception and perceived value in services provided by a bank or a financial company to meet their customers' expectation. Customers' satisfaction is a combination of their cognitive and affective response to service encounters. Service quality is the overall evaluation of a firm's service delivery system. Service quality is the managerial delivery of services; while satisfaction is customers' experiences with those services. Improved service quality will result in more customer satisfaction.

1.2 TECHNOLOGICAL DEVELOPMENTS IN BANKING

Technological advances have changed the world radically, altering the manner in which individuals conduct their personal and business affairs. Over the past two decades in particular, the banking industry has invested substantial resources in bringing ICT to customers. The banking industry is undergoing through the significant technological changes; it has several impacts on customer satisfaction and loyalty. It has revolutionized every industry including banking in the world by rendering faster and cost effective delivery of products and services to the customers.

In India, the situation of the banks is quite different from the banks overseas particularly in developed markets. Indian banks are not facing huge write downs or losses and are still quite well capitalized. In India, however, this could be an opportune moment for banks to focus on the internal processes and consolidate their IT platforms across functionalities to use technology as an effective strategic tool. The use of technology in India has undergone rapid transformation. The last two decades have witnessed a sea change in the nature of services offered by not only banks but also the financial sector and even the Government - all of which have had a positive impact on the customers of these organizations and the general public at large.

Since two decades, due to an increasingly competitive, saturated and dynamic business environment, retail banks in many countries have adopted customer-driven philosophies to address the rapid and changing needs of their customers (Walker et

al., 2008).[5] Technology in the banks is presently catching up with a high level of development around the world. The gaps between the Indian banks and their counterparts in the technologically advanced countries are gradually narrowing down (Kalavathy, 2005)[6].

Technology is the surest and most appropriate way of bringing inclusion in respect of any product and/or service. The banking industry is a large and highly diverse service industry than other services. This industry covers all types of customers and their financial needs including deposit, lending and other banking services. It also makes a significant contribution in the economic development of the nation. Recent world wide technological revolution influenced the banking industry than other service sector in India. Since 1980s, Indian banking sector has undergone through technological advancement phase and most of the banks have countered their business as e-business. The world has witnessed an information and technological revolution. This revolution has touched every aspect of public life including banking (Siam, 2006).[7] Core banking solution enables banks to extend the full benefits of ATM, tele-banking, mobile banking, internet banking, card banking and other multiple delivery channels to all customers allowing banks to offer a multitude of customer-centric services on a 24x7 basis from a single location, supporting retail as well as corporate banking activities (Chakrabarty, 2010).[8]

Technology and the internet have had a profound effect on service marketing including banking services. Banks today are increasingly providing customer service in support of relationship marketing strategic objectives, with the help of technology via e-service. With these developments, a new era of banking has emerged, which is known as e-banking. E-banking encompasses an arrangement of financial transactions, once done through the tangible exchange of information, now are done

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[5] Walker et al., (2008) "Customer Satisfaction and Competencies: An Econometric study of An Italian Bank," Master thesis, Department di Economia Aziendale and Department di Scienze Economiche H.P. Minsky, Universita degli Studi di Bergamo, Italy.

[6] Kalavathy, (2005) "Mobile Banking: The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector," Research project, University of Hamburg, Germany.

[7] Siam, (2006) "Mobile Payment Service Development-Managerial Implication of Customer value perceptions" Published in Management Review 4 (2), pp.23-29.

[8] Chakrabarty, (2010) "Predicting young consumers' take up of mobile banking services," International Journal of Bank Marketing, vol. 28, no. 5, pp. 410-432.

electronically (Azouzi Dhekra 2014).[9] E-banking services are new and services for Indian customers. As a result Indian banks are investing heavily in the technologies such as branch automation and computerization, core banking, tele-banking, mobile banking (M-banking), internet banking, automated teller machine (ATMs), data warehousing etc. ICT innovations in the previous few years have changed the landscape of banks in India. Today public sector and private sector banks are offering online banking services. Various alternative channels to provide easy and anywhere banking are properly thought of. The process of bank computerization was started since 1985 in public sector banks in India. However, some private sector banks have started computerization prior to the public sector banks in India. The banks in India are using ICT not only to improve their own internal processes but also to increase facilities and services to their customers. The Reserve Bank is playing an important role in bringing the technology based banking, which has resulted in large scale computerization of the banking sector in India. The Financial Sector Technology (FST) vision serves as a lighthouse for the banks to make their own IT initiatives based on the broad approach as envisioned by the Reserve Bank.

The banks in India are using Information Technology (IT) not only to improve their own internal processes but also to increase facilities and services to their customers. Particularly, in the banking sector ICT is one of the most important tools, because it provides many suitable alternative banking channels and facilities to the customers. It brings connivance, customer centricity, enhance service quality and cost effectiveness in the banking services. Even now, customers are evaluating their banks based on availability of high-tech services.

In India, banks as well as other financial entities have already entered the domain of information technology and computer networking. Today a satellite-based Wide Area Network (WAN) provides a reliable communication framework for the financial sector.

1.2.1 TECHNOLOGY SYSTEM FOR M-BANKING SERVICES

Technology companies that provide backend functions for mobile banking are taking the lead in rolling out new services that involve banks and mobile network operators. Banks hold the accounts and mobile network operators have the channels and

[9] Azouzi Dhekra (2014) "Technological Revolution in e-banking" journal of IT, Pakistan, Vol 4 (3) pp.189-201.

networks. Presently, the banks are using the network of telecom industry and use technology like (IVR); Short Messaging Service (SMS); Wireless Access Protocol (WAP); Standalone Mobile Application Clients in order to provide mobile banking.

- **INTERACTIVE VOICE RESPONSE (IVR):** The customers use IVY service by calling on a pre-specified number provided by bank. The customer follow different instructions provided by bank on IVR and can choose different options by the bank. Mobile banking based on IVR is mostly used for Enquiry Based Services.
- **SHORT MESSAGING SERVICE (SMS):** Mobile banking application use SMS text-messaging standard to perform banking. The users send SMS containing pre-defined format for specific banking operation to number a pre-specified number provided by the bank. The bank responds with SMS having specific information about the transactions.
- **WIRELESS ACCESS PROTOCOL (WAP):** WAP is a global specification used by wireless devices like mobile phones to easily access and interacts with internet information and services instantly. The banks maintain WAP enabled sites contain form based interface used by customer's through WAP compatible browser on their mobile phones. WAP enabled mobile banking is provided by banks like ICICI, SBI, Indian Bank, Union Bank of India etc. The banks' customers can access all enquiries and transactions based services and also perform complex transactions like trade in securities using mobile phone.
- **STANDALONE MOBILE APPLICATION CLIENTS**: Standalone mobile applications are used to perform complex banking transactions like trading in securities. These applications are easily customized according to the user interface complexity supported by the mobile. In addition, applications enable the implementation of a very secure and reliable channel of communication. The client's needs to download the mobile instrument specific banking application provided by the bank on their hand held device.

1.3 PERFORMANCE OF E-BANKING

Modern management science philosophy considers customer satisfaction as a baseline standard of performance and a possible standard of excellence for any business organization. Especially, banks due to similar services compete together in order to achieve customer satisfaction. They try to create eases for their customers. E- Banking is a new system that most banks have used to achieve this objective. This system

opens multiple routes to the customer service (e.g., ATM machines, telephones, Internet and mobile phones). Although, advancements in e-banking technology have already transformed the modern world, E -banking is still an innovation in creating products and services through electronic channels with low cost. A new approach in the field of banking services is the supply of financial and banking services with mobile phones. Mobile banking is as a wireless communication channel for creating value by customers in banking transactions (Taghavi Fard and Torabi, 2011). [10]
Mobile- banking is a new concept that emerged in the global economy in the recent years and has created new streaming in the fields of commerce and trade. However, financial resource of people is limited; consequently, banks are challenging each other in attracting customers. Several Iranian banks, including private and public banks, numerous financial and credit institutions need to exert many efforts to keep their customers in order to survive. The constraints of financial resource under which bank services are managed make it essential for the managers to understand and measure customers' expectations. In addition, any gap in service quality has to be identified from the customers' perspective (Rakesh, 2012).[11] Thus, many researchers examined satisfaction and intention of banking.

Customers choose a products or services by considering their qualities. SERVQUAL model is one of the instruments used to measure the quality of services. This scale has been tested and/or adapted in a great number of studies conducted in various service settings, cultural contexts and geographic locations. The main purpose of the present study was to examine the relationship between qualities of Mobile Banking services and satisfaction of customers.

The Information Technology has inducted an electronic revolution in the global banking sector. Online banking, e-banking, electronic banking, net banking or banking over the internet are commonly used words in banking industry. It is the IT, which has revolutionized the operations of banking both at the local, national and international level. It is a cutting edge technology, a new business paradigm.

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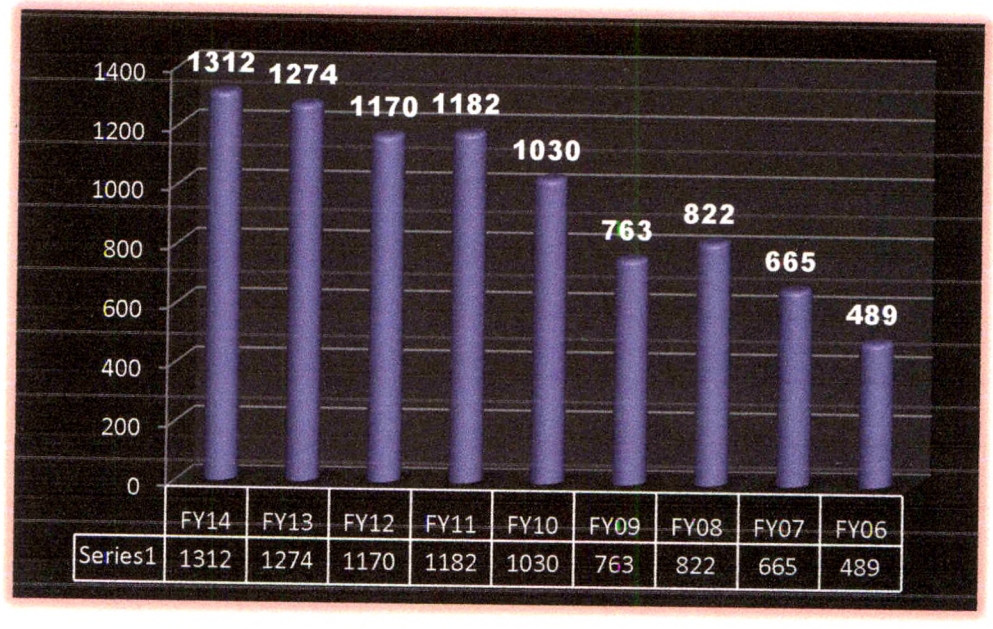
[10] Taghavi-Fard, M. T. and Torabi, M. (2010). "The Factors Affecting the Adoption of Mobile Banking Services by Customers and Rank Them (Case Study: Bank Tejarat In Tehran, Iran)". Journal Excavations Business Management, 3, pp. 136-162.

[11] Rakesh, R. (2012). "Quality Assessment of Banking Industry Using the Servqual Model". Indian Streams Research Journal, 2 (2), pp. 1-4.

IT based services mean that any enquiry or transaction should be processed online without any reference to the branch at any time. The Internet is a fast medium of messages between banks and their customers. To this effect, the communication process of banking sector has changed a lot in the recent years. In the year 2000, Reserve Bank of India established the Indian Financial Network (INFINET) System, which is an efficient and cost effective communication system for banking. The payment system, which is very important for the banking, is most benefited from INFINET system. For safe and efficient fund transfer system, RBI has added a new application system known as Structured Financial Messaging Solution (SFMS). To make advantages of these systems, banks need adequate computerization, software, etc. But still most of the banks lack these facilities (Kamesan, 2002). Banks are developing new channels for providing the convenience of time and place to the customers. After introduction of IT, banks are mobilizing and channeling financial resources more effectively. These changes have resulted in the introduction of new financial instruments and services like Insurance, Mutual Funds, Credit Cards, Debit Cards, D-mat account, online Shopping, and Marketing and selling of RBI bonds. Security of financial operations has been also increased after adoption of IT.

IT based services in banking is an additional delivery channel. These services are considered as value added services for customers. (Gupta, 2002) IT based services can be categories into three types. First is a basic level service, under this category banks have their own websites to display information of products and services. Banks also handle customer's queries through e-mails. Most of the co-operative banks and some scheduled commercial banks in India are still in the first stage of e-banking operations. Second level is a simple transaction level. Under this level bank websites allow the customers to submit their instructions, application for different services, queries on their account balance, d-mat account service etc. but do not permit any fund based transactions. Nationalized Banks and some scheduled commercial banks are working under this level. These banks are Vijaya Bank, State bank Group, Oriental Bank of Commerce, Punjab National Bank, Bank of Baroda etc. Third level is the Fund based transaction or full transaction level. The growth potential for these services is immense. Under this category bank web sites allow the customers to operate their account for transfer of funds, payments of different bills, sales and purchases of securities and many more facilities. These services are provided by ICICI bank, HDFC bank, Citibank, HSBC bank, Federal bank, UTI bank, IDBI bank etc. State Bank and Allahabad Bank have recently announced that they will provide such services very soon.

FIGURE 1.4: GROWTH OF DEPOSITS IN BANKS



Source: RBI (Amount has been depicted in $Bn)

The above bar chart shows the growth of deposits in Banks due to the emergence of e-banking. In the financial year of 2006 the growth of deposits is $489Bn and then increase in the financial year to $665 Bn. But is noticed that there was a slight decrease in 2009 but up to the financial year of 2014 it is constantly increased and the growth of deposits has reached up to the $1312.

Financial Services are generally complex and need a lot of trust for the consumer to use technology. Banks have changed from paper-based banking solutions provider to the latest of the technologies like online-banking, mobile-banking, etc. It is surprising to know as to why most of the Indian customers have not welcomed this up gradation. Customers across the world, even technologically optimists, have refrained from using technology aided solutions. There are many reasons why technology has not been able to ride the acceptance wave and cross the hurdle and become an acceptable feature in banking. As today's banking has redefined itself as customer centric, it becomes more important that the customer is happy with the services being provided. Unfortunately, the acceptance and adoption rates are very low even in the case of educated customers. The study looks at various factors which explain why consumers are not using mobile banking and other technologies in banking. It would also try to suggest why people are not currently using mobile banking and try to suggest how to overcome this problem and increase the acceptance levels.

Internet Banking helped give the customer's anytime access to their banks. Customers could check out their account details, get their bank statements, perform transactions like transferring money to other accounts and pay their bills sitting in the comfort of their homes and offices. However the biggest limitation of Internet banking is the requirement of a PC with an Internet connection, not a big obstacle if we look at the US and the European countries, but definitely a big barrier if we consider most of the developing countries of Asia like China and India. Mobile banking addresses this fundamental limitation of Internet Banking, as it reduces the customer requirement to just a mobile phone.

Earlier banks were using branch network and distributed PC software as their delivery channels to reach business customers. However, in the recent past combinations of distinctive factors forced the banks to rethink on their strategy. Today's customer demands that requirements should be understood and they should have access to their information and services at reasonable cost.

E-banking, or electronic banking, refers to all types of banking transactions performed electronically, without visiting a brick-and-mortar bank. Terms such as PC banking, Internet banking or online banking are sometimes used instead. For customers, this means performing actions such as paying bills, checking balances on their accounts, transferring funds and purchasing financial instruments remotely, using through computers and mobile. In today's era competition in the financial service industry has been increasing dramatically in few years, owing to the growth of E-Banking, consequently, keeping existing customers as well as attracting new ones is a critical concern.

1.4 CONCEPT OF M-BANKING

What is M-Banking?

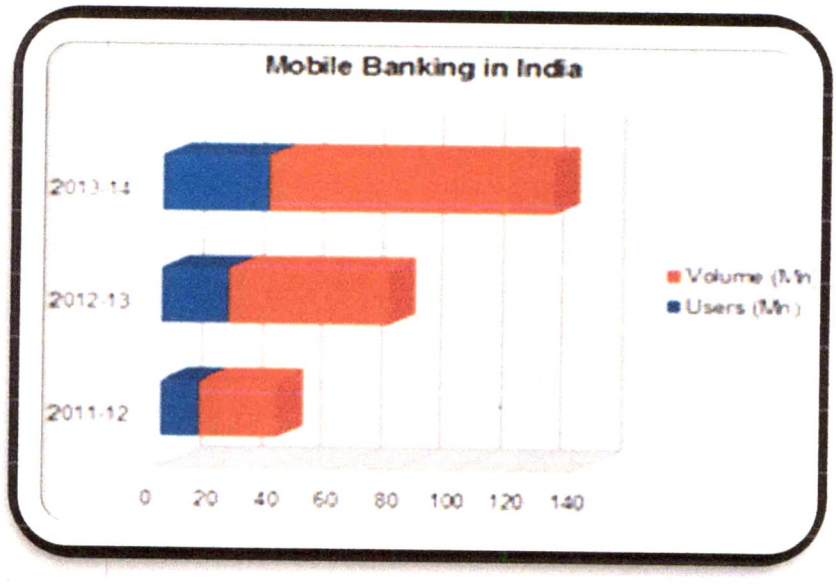
Mobile banking is a way for the customer to extending banking services through his or her cell phone mobile phones in secured involvements.

With mobile banking, consumers are looking for a service that is simple and secure, that they can assess anywhere and that is cheap to use as internet banking. The last decade has seen a profuse growth in internet banking transactions and mobile banking transactions respectively. Many banks depend on information technology in conducting their businesses and spend huge amounts of money on such technology to reduce operation costs and gain competitive advantage over their rivals by offering

customers better services through ATMs machines, telephone banking internet banking and more obviously the mobile banking. Banks are looking to provide a mobile banking service for their customers that has a low cost of implementation is very secure and utilizes their existing infrastructure investment, but then also some banks are failing to provide appropriate services. The main aim of this study is to measure the satisfaction level and services of mobile banking. Mobile banking grew in India over the last two years. Mobile users in the country are using mobile banking services constantly and even though the value of transactions through the mobile rocketed almost four times. The growth in number of users and the volume of transactions have increased in FY14 over FY13, as per data collated by the Reserve Bank of India. The value of money exchanged through mobile banking rose to Rs 22,438 crore ($3.7 billion) during the year ended March 31, 3014, recording growth of around 275 per cent presented in the figure given below:

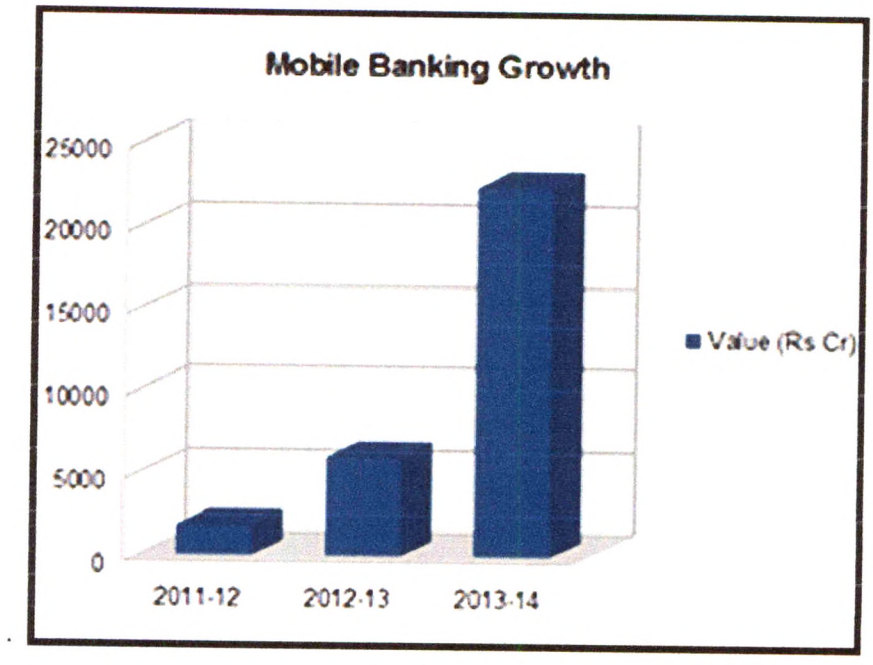
As many as 35.53 million customers used m-banking services in the country during the period of total mobile subscribers of 904.5 million. This means around 4 per cent of mobile subscribers used mobile banking against 2.6 per cent the previous year and just 1.4 per cent in FY12.

FIGURE 1.5: MOBILE BANKING IN INDIA



The growth in value of transactions was equally strong in the previous year rising 229 per cent in FY13 over FY12. This accelerated last year. However, the growth in the number of-banking users grew at a slower pace. The m-banking users rose 57.84 per cent as against 73.7 per cent the year ago.

FIGURE 1.6: MOBILE BANKING GROWTH



The figure given above presents the volume of m-banking transactions, which had more than doubled in FY13 to 53.31 million, grew at a relatively slower rate of 77.66 per cent to 94.71 million last year. This implies the existing users are gaining confidence to transact larger amounts.

Mobile usage has seen an explosive growth in most of the Asian economies like India, China and Korea. The main reason that Mobile Banking scores over Internet Banking is that it enables 'Anywhere Anytime Banking'. Customers don't need access to a computer terminal to access their bank accounts, now the can do so on-the-go while waiting for the bus to work, traveling or when they are waiting for their orders to come through in a restaurant.

The scale at which Mobile banking has the potential to grow can be gauged by looking at the pace users are getting mobile in these big Asian economies. The explosion as most analysts say, is yet to come as India has about one of the biggest untapped markets. China, which already witnessed the mobile boom, is expected to have about 400 million mobile users by the end of 2015.

With the advent of touch-tone services, the idea of telephone banking took on a new direction. Instead of connected with a live bank representative, customers could use the keypad on a touch-tone phone to enter an automated system and obtain information on bank accounts as of the latest posting day. One advantage of this newer approach is that bank customers could call any time of the day or night and check the status of their accounts. As technology continued to progress, the scope of

functions that could be performed with the automated system expanded, making the service even more valuable to customers. Telephone banking is a service feature offered by many banking institutions. The process involves using the keypad on a touch-tone telephone to perform a variety of banking functions. Along with traditional banks, phone banking is also utilized extensively by online banking institutions, including banks that conduct business primarily with the use of telephone technology. As technology continued to progress, the scope of functions that could be performed with the automated system expanded, making the service even more valuable to customers.

1.4.1 ORIGIN OF MOBILE BANKING

Probably had its origin in November 1946.In India, the first bank on wheel was launched by the bank of Patiala in 1950. Internet banking helped give the customer's anytime access to their banks. Customers could check out their account details, get their bank statements, perform transactions like transferring money to other accounts and pay their bills sitting in the comfort of their homes and offices. However the biggest limitation of Internet banking is the requirement of a PC with an Internet connection, but over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. This opens up huge markets for financial institutions interested in offering value added services. With mobile technology, banks can offer a wide range of services to their customers such as doing funds transfer while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. There are over 200 million mobile phone subscribers in India and the number continues to explode. Financial services companies are now working with mobile payment players like mChek to offer innovative mobile phone solutions to urban and rural Indian population. Mobile banking has the potential to bring a whole host of people that have no/little access to land lines/internet connections onto the electronic platform – an innovative way to generate financial inclusion.

1.4.2 TRENDS IN M-BANKING

The advent of the internet has revolutionized the way the financial services industry conducts business, empowering organizations with new business models and new ways to offer 24 x 7 accessibility to their customers. The ability to offer financial

transaction online has also created new players in the financial services industry, such as online banks, online brokers and wealth managers. Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world.

Recent trends in mobile banking

Year	No. of Users (million)	Volume (million)	Value (₹ billion)
2011-12	12.96	25.56	18.21
2012-13	22.51 (73.69%)	53.31 (108.56%)	59.90 (228.94%)
2013-14	35.53 (57.84%)	94.71 (77.66%)	224.38 (274.59%)

(Figures in bracket is %age changes over previous year)

It has been inferred from the above table in 2011-12 number of users (in Million) only 12.96. But it has increased up to 35.53 million in 2013-14.It is concluded that users of mobile banking are increasingly and they are very comfort in adapting the latest technology.

1.4.3. M-BANKING PRODUCT AND SERVICES

Banks are constantly adopting technology to expand its business and to reach different level of customers. Apart from ATM, Internet banking and other technology enabled services Mobile Banking is one of the services provided by banks to its customers. Astonishing growth in telecommunication sector, its penetration including rural population and technology feasibility are the major factors for the introduction of Mobile banking services. Some banks in India are started providing the mobile banking service to their customers that include State Bank of India (SBI), Union Bank of India (UBI), Punjab National Bank (PNB), HDFC, ICICI, Axis Bank, etc. According to Porteous (2006)12 Mobile banking services can be categorized as additive and transformational. The additive mobile banking model provides existing customers of the banks with alternate banking service channel in order to access their

[12] Porteous (2006) "An analysis of mobile banking acceptance by Malaysian customers," Sunway Academic Journal 4, University Malaysia Sabah. Pp. 33-41.

accounts. Your phone is now your bank! Phone Banking services are a combination of IVR and Agent offering, depending on the type of transaction. For all transactions that cannot be completed on the IVR such as reporting loss of cards, logging complaints, requests & queries, Phone Banker-assisted services are available.

Mobile banking can offer services such as the following:

1. **Check your account balance** - Get up-to-the-second details of your Savings or Current Accounts and your Fixed Deposits. One can also get the details of the last 5 transactions on your account, or have a mini statement of last 15 transactions faxed across to you.
2. **Enquire on the cheque status** – One can use Phone Banking to check on the status of cheques issued or deposited from anywhere in India.
3. **Order a Cheque Book / Account Statement** - Just call Phone Banking and get your Cheque Book or latest Account Statement delivered at your doorstep.
4. **Stop Payment** - Stop payment of a single cheque or a series of cheques, 24 hours a day.
5. **Loan Related queries** - Get details of the outstanding loan amount, enquire about your loan account, request for an interest certificate and repayment schedule, etc. Just call Phone Banking in your city, select your preferred language and dial 4 to speak to our Phone Banker.
6. **De-mat Related Queries** - Get details of Account holding, Transaction details, ISIN Number of a scrip, status of Depository Slips, Client Master List details, Charges for the account and others. Call Phone Banking in your city, select your preferred language & dial 5 to speak to our Phone Banker.
7. **Open a Fixed deposit** - Talk to our Phone Banker to open a Fixed Deposit over the phone, by simply authorizing a transfer of funds from your Savings Account
8. **Transfer Funds between accounts** – One can also transfer money from one of your accounts to another. Both accounts must be linked to your Customer ID. You can transfer amounts up to Rs 1 Lac in a single day.
9. **Pay your bills** - Pay your cellular, telephone, electricity bills through Phone Banking using Bill Pay, a comprehensive bill payments solution.
10. **Re-generation requests for ATM / Debit card PIN / Net Banking IPIN, etc** - Call Phone Banking in order to regenerate your ATM / Debit card PIN / Net Banking IPIN, etc.

11. **Report loss of your ATM / Debit / Prepaid Card** - If your ATM / Debit / Prepaid Card are lost, call any Phone Banking number to hotlist / block your card(s).

Mini-statements and checking of account history
Balance checking in the account
Recent transactions
Bill payment processing
Mobile recharging
Domestic and international fund transfers
Check (cheque) book and card requests
Status on cheque, stop payment on cheque
Ordering cheque books
Due date of payment (functionality for stop, change and deleting of payments)
PIN provision, Change of PIN, Blocking of (lost, stolen) cards
Commercial payment processing
Withdrawal at banking agent
Deposit at banking agent
Access to loan statements
Access to card statements
Mutual funds / equity statements
Insurance policy management
Real-time stock quotes
ATM Location

1.5.1 Account Information

1. Mini-statements and checking of account history
2. Alerts on account activity or passing of set thresholds
3. Monitoring of term deposits
4. Access to loan statements
5. Access to card statements
6. Invest the amount in Mutual funds / equity statements
7. Insurance policy management
8. Pension plan management
9. Status on cheque, stop payment on cheque

1.5.2 Payments & Transfers

1. Domestic and international fund transfers
2. Micro-payment handling
3. Mobile recharging
4. Commercial payment processing
5. Bill payment processing
6. Peer to Peer payments

1.5.3 Investments

1. Portfolio management services
2. Real-time stock quotes
3. Personalized alerts and notifications on security prices

1.5.4 Support

1. Status of requests for credit, including mortgage approval, and insurance coverage
2. Check (cheque) book and card requests
3. Exchange of data messages and email, including complaint submission and tracking
4. ATM Location

1.5.5 Content Services

1. General information such as weather updates, news
2. Loyalty-related offers
3. Location-based services

Based on a survey conducted by Forrester, mobile banking will be attractive mainly to the younger, more "tech-savvy" customer segment. A third of mobile phone users say that they may consider performing some kind of financial transaction through their mobile phone. But most of the users are interested in performing basic transactions such as querying for account balance and making bill payment.

According to Otair and Tarawneh (2011)[13] Mobile banking benefits for customers and banks follows:

[13] Otair and Tarawneh (2011) "Toward an understanding of the behavioural intention to use mobile banking," Computers in Human Behavior, vol. 21, no. 6, pp. 873–891.

S.No	Benefits for Customers	Benefits for Banks
1	Provides customers with access to information at their fingertips	Ability to retain most profitable client
2	To access important personalized financial information at any time anywhere.	New source of retail banking revenue from current customer through subscription & per transaction fees.
3	Opportunities for extended service such as ability to conduct financial transaction.	Improve technological up gradations for competitive positions.
4	Personalized and user friendly customer interface.	Lower customer service cost.
5	Ability for value added services to be added or changed centrally	Improved information channel for customers

1.4.4. A MOBILE BANKING CONCEPTUAL MODEL

- According to this model Mobile Banking can be said to consist of three inter-related concepts:
- Mobile Accounting.
- Mobile Brokerage.
- Mobile Financial Information Services.

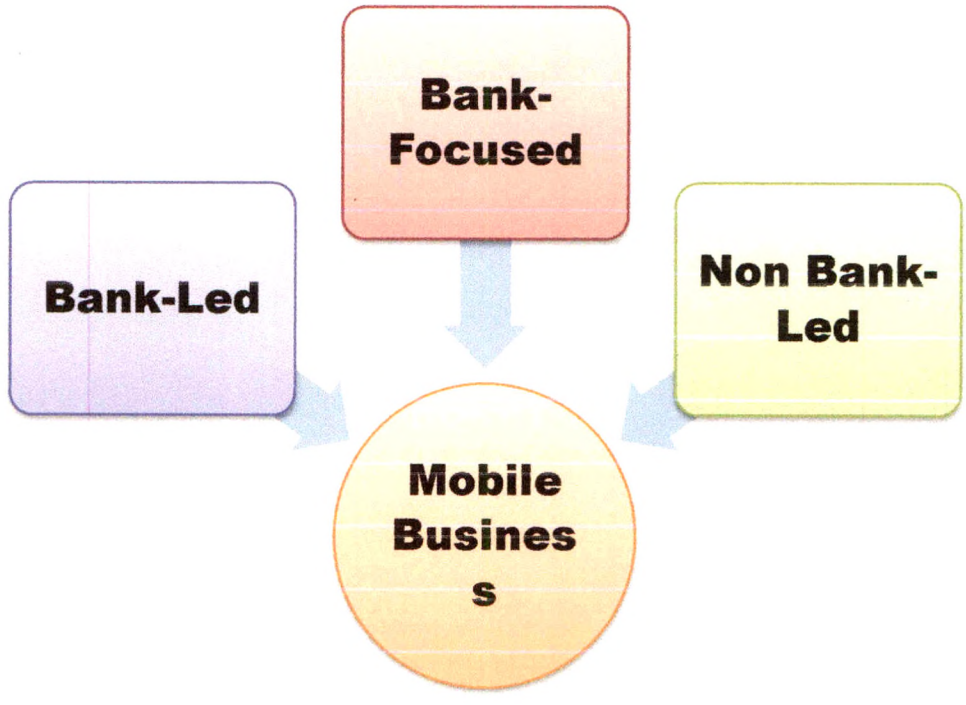
Figure 1.7: Inter-related Functions of Mobile Banking Services

Most services are in the categories designated accounting and Brokerage are transaction-based. Then on-transaction-based services of an information nature are however essential for conducting transactions - for instance, balance inquiries might be needed before committing a money remittance. The accounting and brokerage services are therefore offered invariably in combination with information services. Information services, on the other hand, maybe offered as an independent module.

1.4.5 MOBILE BANKING BUSINESS MODELS

A wide spectrum of Mobile/branchless banking models is evolving. These models differ primarily on the question that who will establish the relationship (account opening, deposit taking, lending etc.) to the end customer, the bank or the Non- bank /Telecommunication Company (Telco). Another difference lies in the nature of agency agreement between bank and the Non- bank. Models of branchless banking can be classified into three broad categories - bank Focused, bank -Led and Non bank -Led.

Figure 1.8: Mobile Business Models



Bank -focused model: emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers.

Bank -led model: offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions at a whole range of retail agents (or through mobile phone) instead of at bank branches or through bank employees.

Non- bank -led model: is where a bank does not come into the picture (except possibly as a safe-keeper of surplus funds) and the non- bank (e.g. Telco) performs all the functions.

1.5 TECHNOLOGIES FOR MOBILE PAYMENTS

The mobile technology landscape provides various possibilities for implementing m-payments. Mobile phone may send or receive information through channels like– SMS, USSD or WAP/GPRS. The choice of the channel influences the way m-payment schemes are implemented. Secondly, the m-payment client application may reside on the phone or else it may reside in the subscriber identity module (SIM). The detail about customer's bank account/credit/debit card is stored inside the phone/SIM. When customer wants to transfer the money to a merchant he accesses the application and enters phone/account number. The application running on his mobile encrypts the details of account-number/credit/debit-card including the amount to be transferred to the merchant. The customer enters MPIN (Mobile PIN) number. The merchant is alerted for confirmation. Once the confirmation is received, the amount is transferred from the customer account to the merchant account. There are other methods like near field communication technique, which is a contactless application.

Some of these techniques are described briefly as below:-

- Short Message Service (SMS)
- Unstructured Supplementary Services Delivery (USSD)
- Wireless Application Protocol (WAP)/ General Packet Radio Service (GPRS)
- Phone-based Application (J2ME/BREW
- Near Field Communication (NFC)
- Dual Chip
- Mobile Wallet
- Network Architecture, and Models m-Commerce
- Present scenario in the Developed/Developing world

M-Commerce applications like m-payment are becoming popular in developed and developing countries due to different reasons. In the developed countries the mobile payment is complementary to the traditional payment systems and is popular due to flexibility, ubiquitous nature and convenience in conducting transactions. It is driven by the industry and is an enabler for wide range of m-Commerce Services viz. m-ticketing, m-retail, m-banking etc. In many developing countries, on the other hand, due to lack of banking facilities in the rural area, lack of alternative solutions, accessibility& affordability issues and limited micro payments, the use of mobile payment is becoming popular due to the reach of mobile phones and their ability to offer m-Commerce services. Mobile money applications are emerging as potent financial tools in rural and remote areas of the globe, allowing people with no bank accounts to get paid, send remittances or settle their bills. Mobile phones are also being used to transfer funds between people. In India, though the M-Commerce is still in its nascent stage with about 5-10 million transactions per day, however, it is picking up fast. The main mobile payment platforms are mChek, ngpay, Obopay, PayMate, ATOM, Oxicash, etc. With the introduction of 3G/BWA service in the country many more mobile applications will develop and the eventual movement from 2G/2.5G to 3G/4G networks will provide the infrastructure for the companies to move forward with the wireless technology applications.

1.6 CUSTOMER SATISFACTION

Satisfaction is the customer's fulfilment response. It is a judgment that a product or a service feature, or the product or service itself, provides a pleasurable level of consumption –related, fulfilment. In minimal technical terms, this definition can be translated to mean that satisfaction is the customers evaluation of a product or service in It is also important to recognize that, to measure the customer satisfaction at a particular point of time as if it were static, satisfaction is a dynamic, moving target that may evolve over the time, influenced by a variety of factors. Particularly when product usage or the service experience takes place over the time, satisfaction may be highly variable depending on which point the usage or experience cycle is focused on.

1.6.1 DETERMINANTS OF CUSTOMER SATISFACTION

Customer satisfaction is influenced by specific product or service features and by perception of quality. Satisfaction is also influenced by customers:

- **Product and service features:** Customer satisfaction with a product or service is influenced significantly by the customer's evaluation of product or service features. Customers of services will make trade – offs among different service features depending on the type of service being evaluated and the criticality of the service.
- **Customer emotions:** Customer's emotions can also affect their perceptions of satisfaction with products and services. These emotions can be stable, pre-existing emotions.
- **Attributions for service success or failure:** Attributions – the perceived causes of events – influence perceptions of satisfaction as well. When they have been surprised by an outcome (the service is either much better or much worse than expected) consumers tend to look for the reasons, and their assessments of the reasons can influence their satisfaction.
- **Perceptions of equity or fairness:** Customer satisfaction is also influenced by perceptions of equity and fairness. Customers ask themselves: have I been treated fairly compared with other customers? Did other customers get better treatment, better prices, or better quality service? Did I pay a fair price for the service? Was I treated well in exchange for what I paid and the effort I expended?
- **Other customers, family members and co-workers:** In addition to product and service features and one's own individual feelings and beliefs, consumer satisfaction is often influenced by other people like other customers, family members and co-workers.

1.6.2 PUBLIC AND PRIVATE SECTOR BANKS AND CUSTOMER SATISFACTION

Indian private sector banks are more advanced in the manner of utilization of technology. As on March 2009-10, almost all branches of private sector banks are fully computerized and are having more alternative banking services as compared to public sector banks in India. While, many rural branches of public sector banks are partially computerized in India.

However, public sector banks are not only concentrated on providing technology based banking service to their customers, but also providing banking services to the types of the customers with consideration of socio-economic development aspect. There is a clear difference in the policy of the private banks and public sector banks

even these two banks are working in the different working conditions in the India. Private sector banks are enjoying more liberal environment than public sector banks. However public sector banks are working on the road mapped by RBI and the Government of India. But recent five years have evidenced that public sector banks have entered in the alternative banking service market to compete with private sector banks and provide various types of alternative banking service to their customers' Therefore, there is a need to assess service quality of alternative banking services provided by public and private sector banks in India and their customers satisfaction level to know which banks are providing satisfactory banking services through their alternative channels e.g. either the public or private sector banks.

1.6.3 OUTCOMES OF CUSTOMER SATISFACTION

Individual firms have discovered that increasing the levels of customer satisfaction can be linked to customer loyalty and profits. There is an important relationship between customer satisfaction and customer loyalty. This relationship is particularly strong when customers are very satisfied. Thus firms that simply aim to satisfy customers may not be doing enough to endanger loyalty – they must instead aim to more than satisfy or even to delight their customers. At the opposite end of the satisfaction spectrum, researchers have also found that there is a strong link between dissatisfaction and disloyalty – or defection. Loyalty can fall off precipitously when customers reach a particular level of dissatisfaction or when they are dissatisfied with service.

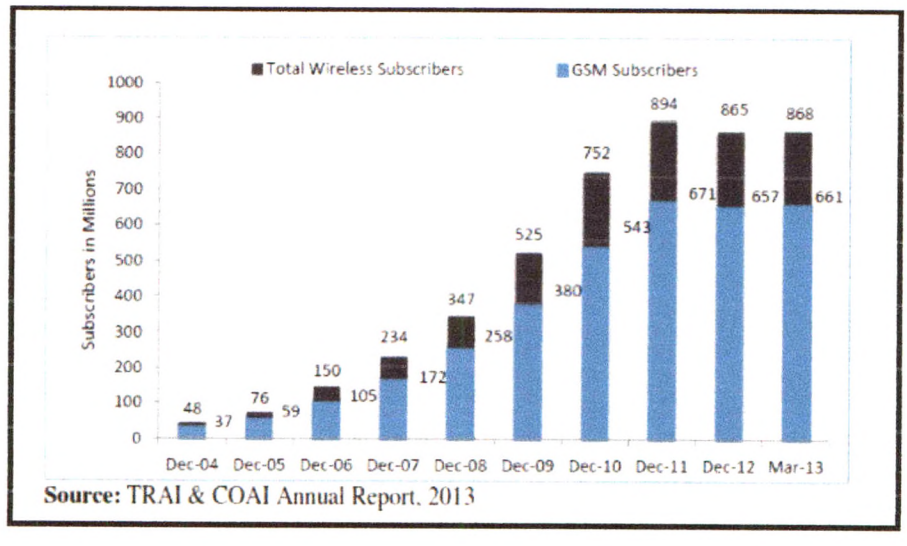
1.7 SERVICE QUALITY

Service quality is a critical element of customer perception. In the case of pure services, service quality will be the dominant element in customers' evaluations. In cases where customer service or services are offered in combination with a physical product, service quality also determine customers' satisfaction. Customers judge the quality of services based on their perceptions of the technical outcome provided, the process by which that outcome was delivered and the quality of the physical surroundings where the service is delivered. Similarly, a restaurant customer will judge the service on her perceptions of the meal (technical outcome quality) and on how the meal was served and how the employees interacted with here (interaction qualify) the décor and surroundings (physical environmental quality) of the restaurant will also impact on customer service quality.

1.7.1 SERVICE DELIVERY

Quality is a comparison between expectations and performance. Service quality is a measure of how well the service level delivered matches customer expectations. Delivering quality service means conforming to customer expectations on a consistent basis (Lewis and Booms, 1983).[14] The comparison of expected and perceived service in not like that performed by consumers when evaluating goods, what differs with service is the nature of the characteristics upon which they are evaluated. Regardless of the types of services consumers use basically similar criteria in evaluating service quality. These criteria seem to fall into seven key categories which are labeled service quality determinants as described in the table below (Parasuraman et al. 1985).[15] With the advancement in the operating systems of the mobile phones and mobile technology like 2G, 3G, 4G has brought a significant change in the way of working of mobile banking services providers. Since the introduction of 2G and the subsequently 3G, the demand for mobile phone has increased many folds. This can be interpreted by a rapid increase in the number of mobile phone subscribers.

Figure 1.9: All India Total Cellular and GSM Cellular Subscriber Base



Source: TRAI & COAI Annual Report, 2013

There are many wireless operators in India but Bharati Airtel has got the maximum share of 21.7% after the Vodafone Essar (17.6%).

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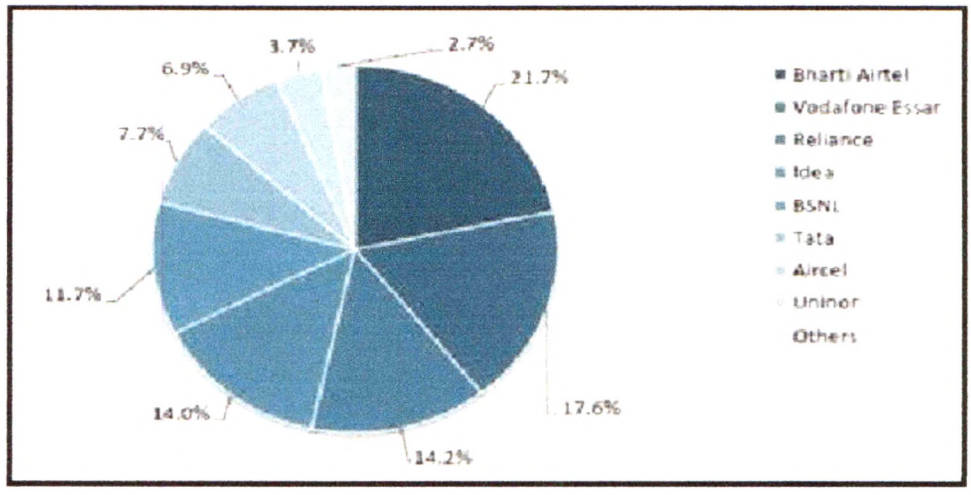
[14] Lewis, R.C. & Booms, B.H. (1983), "The marketing aspects of service quality" in Berry, L., Shostack, G. and Upah, G. (eds.),

[15] Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1985), "A conceptual model of service quality and its implications for future research", journal of Marketing, 49(4), pp. 41-50.

Figure 1.10: Market Share of Wireless Operators



Source: The Indian Telecom Services Performance Indicators, TRAI March, 2013

1.7.2 RBI GUIDELINES ON M-BANKING

In the beginning, with the proliferation of mobile phones in various states, some banks started offering information based services like balance enquiry, stop payment instruction of cheques, transactions enquiry, and location of the nearest ATM/branch etc. Acceptance of transfer of funds instruction for credit to beneficiaries of same/or another bank in favor of pre-registered beneficiaries had also commenced in a few banks.

Reserve bank of India has mentioned guidelines for operating the mobile banking services. These are:

- Licensed banks are permitted to offer mobile banking services.
- Account holders of banks and debit and credit card holders can avail these services.
- A transaction in Indian currency is allowed.
- Banks who have implemented core banking solutions are permitted to offer mobile banking services.
- The details of the terms and conditions are communicated to the customers at the time of registration.
- To enable funds transfer from account in one bank to any other account in the same or any other bank on a real time basis irrespective of the mobile network a customer has subscribed to.

- Banks provide mobile banking services shall comply with the following security principles and practices for the authentication of mobile banking transactions
- Customers can communicate their grievances to the redressal committee.
- Proper level of encryption and security shall be implemented at all stages of the transaction processing.
- Banks may also put in place monthly transaction limit depending on the bank's own risk perception of the customer.

Later Reserve Bank of India (RBI) had set up the 'Mobile Payments Forum of India' (MPFI), a 'Working Group on Mobile Banking' to examine different aspects of M-Banking. The Group had focused on three major areas of M-banking, i.e.

- **Technology and security issues,**
- **Business issues**
- **Regulatory and supervisory issues.**

1.8 MECHANISM OF MOBILE BANKING SERVICES

Conceptualizing Electronic Money

Even the simplest handsets have features buried deep in menu structures. If navigating an m-banking/m-payments interface is difficult for experienced mobile users with bank accounts, even greater is the difficulty for first-time users in the developing world, many of whom will have only been using a mobile for a year or so (Cracknell, 2004).[16] However, the challenges may run deeper than interface design. People coming to banking for the first time via the mobile handset require a command of abstract concepts about invisible/virtual money. Consider the lack of ways to wrap or 'gift' a digital money transfer (Singh, 2007).[17] Beliefs, misunderstandings, habits, and concerns must be addressed if people who are used to storing money in cash are asked to store it 'in' a handset; the analogy remains strained, the mobile is not yet a wallet (Singh, S., & Arora, M., 2014).[18]

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[16] Cracknell, (2004) The role of information in mobile banking resistance," International Journal of Bank Marketing, vol. 28, no. 5, pp. 372-388.

[17] Singh, S.(2007) The Impact and Adoption of Mobile Banking in Delhi. Journal of Applied Research, 4 (1) 61-67.

[18] Singh, S., & Arora, M. (2014). Demographic perception towards mobile banking in India. International Journal of Management, IT and Engineering, 4(7), 251-259.

1.8.1 EXISTING PAYMENT MECHANISMS

The role of existing mediated transfers and other financial services also deserves scrutiny. A large proportion of the volume of m-transactions may reflect existing transactional relationships, shifted over to the new channels. This is not to say that a shift is not itself valuable; there are significant benefits of cost, reliability, safety, flexibility, and immediacy associated with m-banking/m-payments systems. However, it is important for industry, researchers, and policymakers to understand the transactional networks and behaviours that already exist. An antecedent to this argument comes from the microfinance sector. These 'financial relations are frequently embedded in other social relations which reflect the diversity of social, security, and economic needs which people have. It highlights he relatively small role of commercial transactions in people's financial lives, and the importance, extent and diversity of personal networks' (Singh, S., & Chaudhary, S 2013).[19] There are communication issues: transfers are exchanges at a distance and, as Ruthven points out, there is an implicit or explicit network of communication and information exchange embedded into almost every transaction. Remittances, in particular, are a context in which it is difficult to separate financial transactions from symbolic meaning and social bonding (Hart, 2000).[20]

- **Mechanisms of Mobile Payment**

Mobile commerce is a natural successor to electronic commerce. The capability to pay electronically coupled with a website is the engine behind electronic commerce. Electronic commerce has been facilitated by automatic teller machines (ATMs) and shared banking networks, debit and credit card systems, electronic money and stored value applications, and electronic bill presentment and payment systems. Mobile payments are a natural evolution e-payment schemes that will facilitate mobile commerce. (Au and Kauffman, 2007).[21]

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[19] Singh, S., & Chaudhary, S.(2013). Management of risk in mobile banking .Editorial Advisory Committee. CPJ Global Review Vol. V No. 1, pp.120-129

[20] Hart, K. (2000). The memory bank: Money in an unequal world. London.

[21] Y.A. Au & R.J. Kauffman, (2007). The economics of mobile payments: Understanding stakeholder issues for an emerging financial technology application, Electronic Commerce Research and Applications, doi:10.1016/j.elerap.

There are a variety of combinations of these frameworks - technology adopted and mode of payment, a survey of which would constitute a study in itself. There are three different models available for m-payment solutions on the basis of payment (Lim, 2007):[22]

a) Bank account based.

b) Credit card based.

c) Telecommunication company billing based.

❖ **Bank Account based M-Payment**

Banks have several million customers and telecommunication operators also have several million customers. If they both collaborate to provide an m-payment solution it is a win-win situation for both industries. In this model, the bank account is linked to the mobile phone number of the customer. When the customer makes an m-payment transaction with a merchant, the bank account of the customer is debited and the value is credited to the merchant account.

❖ **Credit Card based M-Payment**

In the credit card based m-payment model, the credit card number is linked to the mobile phone number of the customer. When the customer makes an m-payment transaction with a merchant, the credit card is charged and the value is credited to the merchant account. Credit card based solutions have the limitation that it is heavily dependent on the level of penetration of credit cards in the country. Only this small segment of the population will benefit in the credit card based model. Though limited in scope, there may be high demand within this segment for a payment solution with credit cards and also, may provide high volumes of transactions.

❖ **Telecommunication Company Billing of M-Payments**

Customers may make payment to merchants using his or her mobile phone and this may be charged to the mobile phone bills of the customer. The customer then settles the bill with the telecommunication company (Zheng and Chen, 2003). This may be further classified into prepaid airtime (debit) and postpaid subscription (credit).

X. Zheng & D.Chen (2003). Study of mobile payments systems. IEEE International Conference on E-Commerce, CEC 2003, June 2003 Page(s):24 – 27 Digital Object Identifier 10.1109/COEC.2003.1210227.

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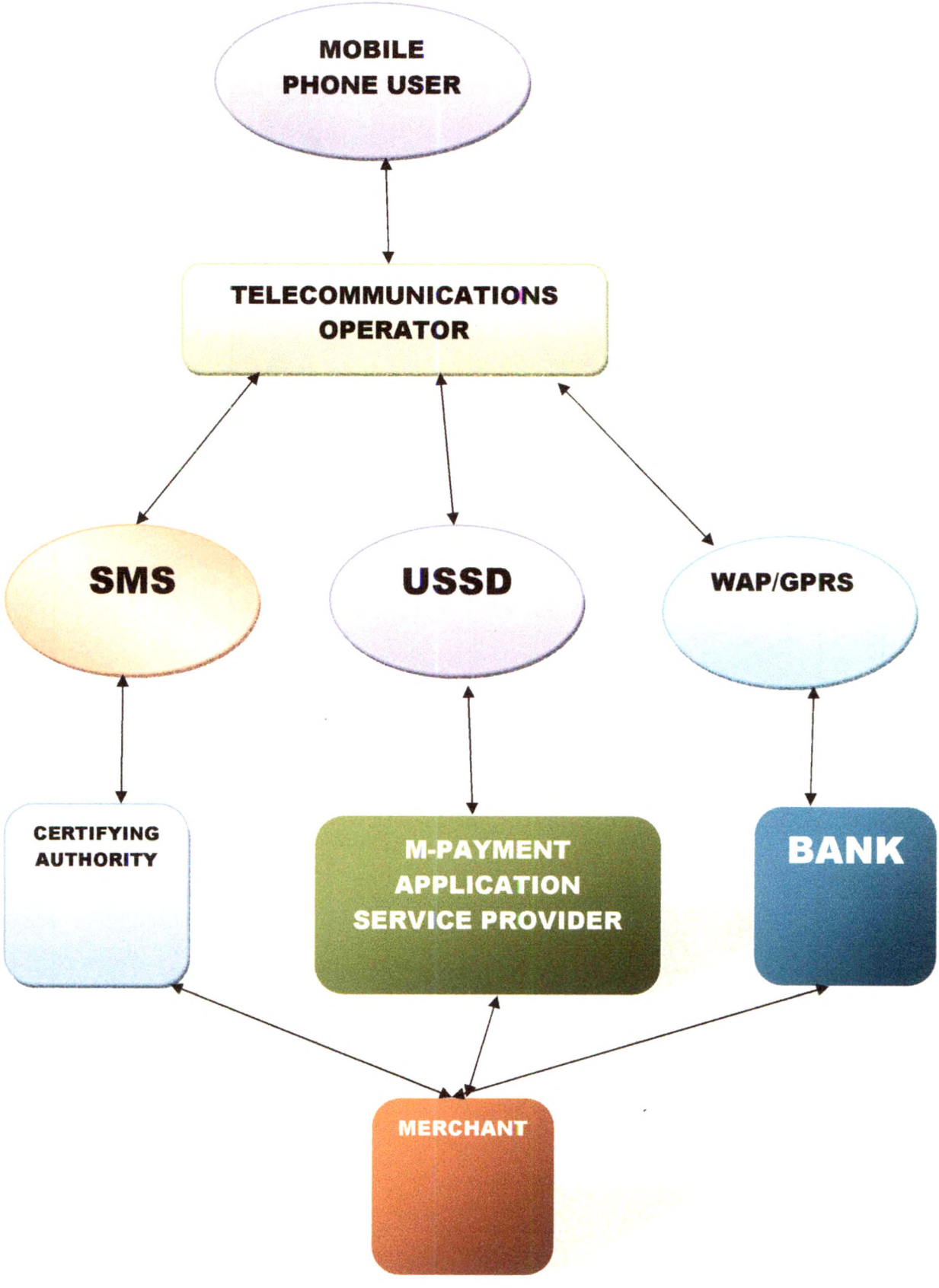
[22] A.S. Lim (2007). "Inter-consortia battles in mobile payments standardization", Electronic Commerce Research and Applications (2007),

1.8.1.1 .Conceptual Model of m-Payment Service

This is a simple, illustrative conceptual model that describes the relationship between the major participants in an m-payment scenario (Fig. 1.1). There is the customer and the merchant who would like to use an m-payment service. The M-Payment Application Service Provider (MASP) provides the necessary technical infrastructure (hardware and software) to facilitate m-payments and acts as an intermediary between the financial institutions and mobile network operators. The MASP registers users who would like to avail of the m-payment service. The users (customers and merchants) have to be registered with the MASP prior to using the service. At the time of registration the MASP collects the bank account details (or credit card details) of the customer and merchant as well as their valid digital certificates.(e.g., buying a ticket from an airline over the phone). The merchant obtains the phone number of the customer and initiates the m-payment transaction request stating the amount for which payment is required. The customer confirms the request and authorizes payment. The MASP receives the authorization and verifies the authenticity of the customer. The MASP then debits the customer account and credits the merchant account by interacting with the bank. Once the electronic funds transfer is successful a confirmation message is sent to the customer and the merchant advising them of the debit and credit respectively. This model can be extended to handle the interaction between the MASP and the financial system taking into account inter-bank payments and settlement.

FIGURE 1.11 MODEL OF M-PAYMENT SERVICE PROVIDER



1.8.2 THE SOCIAL EMBEDDEDNESS OF ECONOMIC TRANSACTIONS

There is a litany of social/contextual influences on m-banking/m-payments use. Both macro-level cultural factors and micro-level, locally-negotiated norms in families and among peers, particularly about money, are at play (N. Lewis et al.,(2010).[23] For example, respondents in this study have agreed that they are well satisfied with the fast and speedy mobile banking services and they feel comfort when they would certainly transfer money to a family member (a gift), they would not do so to an acquaintance (a loan). Technically, the actions are the same. Socially, they are miles apart. However, others suggest that m-banking/m-payments systems may alter patterns of money-sharing within families by giving women greater autonomy and control over household savings (G. Kim et al.,(2009).[24]

1.8.3 CROSS-CUTTING THEMES IN STUDIES OF M-BANKING/M-PAYMENTS USE

When such studies of m-banking/m-transactions use in the developing world appear, it is likely that they will touch, implicitly or explicitly, on cross-cutting themes shared by studies of other mediated communication technologies. There is little need for a new 'theory of m-banking.' Rather, our existing toolkit of theories of technology use, and particularly technology use in the service of economic and social development (ICTD), is sufficiently robust to handle the introduction of this new technology (C. N. Sivanand, M. Geeta, and M. Suleep, 2004).[25] Rather, the task at hand for communication researchers is to find ways to have the existing theory inform and strengthen the assessments of impact and diffusion, of design and policy, which are occurring at this time as diverse stakeholders are establishing the mobile payments landscape. While some periods of alternating exuberance and introspection are to be expected in the realm of new technology development and policy, the opportunity exists at this time for theory to temper some of the more dramatic swings, at least as far as m-banking/m-payments as an 'ICT4D' is concerned.

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[23] N. Lewis et al.,(2010) , "Predicting young consumers' take up of mobile banking services," International Journal of Bank Marketing, vol. 28, no. 5, pp. 410-432.

[24] G. Kim et al.,(2009) , "Understanding dynamics between initial trust and usage intentions of mobile banking," Information Systems Journal, vol. 19, no. 3, pp. 283-311, 2009.

[25] C. N. Sivanand, M. Geeta, and M. Suleep (2004) , "Barriers to Mobile Internet Banking Services Adoption: An Empirical Study in Klang Valley of Malaysia," Internet Business Review, vol. 1, no. 2, pp.1-17.

A willingness to examine the bi-directionality of influence between communication technologies and the social structures in which they exist, a focus on the 'dynamic interactions between people and technology' is a hallmark of many studies applying a 'use heuristic' or 'ensemble' view (R. Tiwari and S. Buse,2006) . [26]

Mobile telephones have also been the subjects of a wide range of studies complicating the directionality of influence, from technological affordances to user choices to social structures and back again (Donner, 2008).[27] Studies that take 'ensemble' approaches to assessing the spread of m-banking/m-payments systems are needed.

A final cross-cutting issue involves the introduction of 'trust' as a factor in the analysis of m-banking/m-payments use. For example, users feel more comfortable with at least some face-to-face contact and assistance while using an m-banking/m-payments system proposed a modified technology acceptance model that included a trust variable (perceived credibility) to predict m-banking adoption in India but now customers feel secure in transferring the amounts. Yet their modification also included another variable, self-efficacy, and a form of trusting one's self.

Indeed, trust itself is a multifaceted concept, which must be handled carefully in any analysis of m-banking/m-payments use. Trust is a cross-cutting concept in that people can trust (or mistrust) their own skills. They can trust the interface, the network across which their funds travel, the representatives of the institutions (channels) who control their money, and/or trust the institutions themselves Zhou, T. (2012).[28]

These forms of trust may change over time with use of the system. People might become more or less trusting along any of these dimensions as their experience of the system changes, relative to friends, family, and others in the community. The role of trust is a cross-cutting issue because multiple research traditions examine economic transactions in their social context: not as discrete acts but as markers and reinforcements of a set of interrelated responsibilities, roles, and transactional networks in which trust plays a central role (Rakesh, R. (2012).[29] Often these

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[26] R. Tiwari and S. Buse,(2006) "Mobile Banking: The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector," Research project, University of Hamburg, Germany.

[27] Donner, J. (2008). Research approaches to mobile use in the developing world: A review of the literature. The Information Society, 24, 140_159.

[28] Zhou, T. (2012). Examining Mobile Banking User Adoption from the Perspectives of Trust and Flow Experience. Information Technology Management, 13 (1), pp. 27-37.

[29] Rakesh, R. (2012). Quality Assessment of Banking Industry Using the Servqual Model. Indian Streams Research Journal, 2 (2), pp. 1-4

transactions are seen as either being structured by or creating a form of 'social capital'. These transactions need not be face-to-face; researchers have used social capital/social-networks lenses to explore how the information technologies generate and reinforce social/economic relationships in ways that provide 'returns' to actors (Kazemi, M. and Mohajer, Sh. (2010).[30]

1.8.4 ROLE OF MOBILE BANKING SERVICES IN ONLINE SHOPPING

Online shopping websites offers the customers multiple payment methods. Whatever your online mode of payment, one can rest assured that they trusted payment gateway partners use secure encryption technology to keep the transaction details confidential at all times.

Customers may use Internet Banking, E-Gift Voucher (eGV), Cash on Delivery and Wallet to make your purchase. These online websites also accepts payments made using Visa, MasterCard, Maestro and American Express credit/debit cards in India and 21 other countries.

The online transaction on these websites such as Flipkart, amazon, shopclues, snapdeal etc. is secure with the highest levels of transaction security currently available on the Internet. They use 256-bit encryption technology to protect your card information while securely transmitting it to the respective banks for payment processing.

All credit card and debit card payments are processed through secure and trusted payment gateways managed by leading banks. Banks now use the 3D secure password service for online transactions, providing an additional layer of security through identity verification.

The 3D secure password is implemented by VISA and MasterCard in partnership with card issuing banks under the "Verified by VISA" and "Mastercard Secure Code" services, respectively.

The 3D secure password adds an additional layer of security through identity verification for your online credit/debit card transactions. This password, which is created by customer, is known only to customer. This ensures that only customer can use your card for online purchases. Flipkart offers customers the convenience of using the bank's Internet Banking service to make a payment towards order.

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[30] Kazemi, M. and Mohajer, Sh. (2010). Ranking of Factors Affecting Customer Satisfaction of Service Quality in the EN Bank of Mashhad. Journal of Industrial Management, 10, pp. 91–103.

1.9 CHALLENGES FOR A MOBILE BANKING SOLUTION

Key challenges in developing a sophisticated mobile banking application are:

- **Handset Operability**

There are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking solution on any type of device. Some of these devices support J2ME and others support SIM Application Toolkit, a WAP browser, or only SMS. The desire for interoperability is largely dependent on the banks themselves, where installed applications (Java based or native) provide better security, are easier to use and allow development of more complex capabilities similar to those of internet banking while SMS can provide the basics but becomes difficult to operate with more complex transactions. There is a myth that there is a challenge of interoperability between mobile banking applications due to perceived lack of common technology standards for mobile banking. In practice it is too early in the service lifecycle for interoperability to be addressed within an individual country, as very few countries have more than one mobile banking service.

- **Security**

Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments. The following aspects need to be addressed to offer a secure infrastructure for financial transaction over wireless network:

If the bank is offering smart-card based security, the physical security of the device is more important.

1. Security of any thick-client application running on the device. In case the device is stolen, the hacker should require at least an ID/Password to access the application.
2. Authentication of the device with service provider before initiating a transaction. This would ensure that unauthorized devices are not connected to perform financial transactions.
3. User ID / Password authentication of bank's customer.
4. Encryption of the data being transmitted over the air.
5. Encryption of the data that will be stored in device for later / off-line analysis by the customer.

❖ **Scalability & Reliability**

Another challenge of the banks is to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With mobile banking, the customer may be sitting in any part of the world (true anytime, anywhere banking) and hence banks need to ensure that the systems are up and running in a true 24 x 7 fashion. As customers will find mobile banking more and more useful, their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence. There are systems such as Mobile Transaction Platform which allow quick and secure mobile enabling of various banking services. Recently in India there has been a phenomenal growth in the use of Mobile Banking applications, with leading banks adopting Mobile Transaction Platform and the Central Bank publishing guidelines for mobile banking operations.

❖ **Application Distribution**

Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to a web site for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades and updates and download necessary patches (so called "Over the Air" updates). However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components.

❖ **Personalization**

It would be expected from the mobile application to support personalization such as :

- Preferred Language
- Date / Time format
- Amount format
- Default transactions
- Standard Beneficiary list
- Alerts

1.10 DETERMINANTS OF SERVICE QUALITY

1 **Reliability**: involves consistency of performance and dependability. It means that the firm performs the service right the first time. It also means that the firm honors its promises. Specifically it involves: accuracy in billing, keeping records correctly and performing the service at designated time.

2 Responsiveness: concerns the willingness or readiness of employees to provide service. It involves timeliness of service: mailing a transaction slip immediately, calling the customers back quickly and giving prompt service.

3 Access: involves approachability and ease of contact. It means the service is easily accessible by telephone; waiting time to receive service is not extensive, convenient hours of operations and convenient location of service delivery.

4 Communication: means keeping customers informed in language they can understand and listening to them. It may mean that the company has to adjust its language or different consumers - increasing the level of sophistication with a well- adjusted customer and speaking simply and plainly with a novice. It involves: explaining the service itself, explaining how much the service will cost, explaining the trade-offs between service and cost and assuring the customer that a problem will be handled.

5 Credibility: involves trustworthiness, believability, honesty. It involves having the customer's best interest at heart. Contributing to credibility are: company's name, company's reputation, personal characteristics of the contact personnel and the degree of hard sell involved in interactions with the customer.

1.11 FUNCTIONS OF MOBILE BANKING

In today's business environment, with so many deadlines to fulfill , appointments to meet and meetings to attend , one can definitely do banking transactions and make enquiries while traveling, using mobile phones. For mobile banking, one has to have a SAT handset with 32k SIM card and needs to register for mobile banking with the bank. Registration process is done using a cell phone, which the bank will download in the mobile banking module. After registration, one can use the following mobile banking services:

Request facility:

- Request for account information
- Query about account balance
- Request for the last few transactions(depending on the bank's policies)
- Order for a new cheque book
- Enquire about status of the cheque
- Issue stop payment order

- Make payment of utility bills
- Locate nearest ATM/branch office
- Find out about the products and services

❖ **ALERT FACILITY:** one can subscribe to facilities such as:

- When salary gets credited to our account
- An over specified amount gets credited/debited
- Account balance goes below/above a specified limit
- When a cheque bounces

The charges of mobile banking services depend on the SMS rate. There are charges for sending request for information, whereas no charges for response, when a SMS is received. In today's extremely competitive banking environment, consumers demand convenience, personalization and a proven commitment from the bank's customer service cell. Telephone banking delivers on the promise of any time, any place access, by instantly connecting your customers with their accounts and the information they want from any touch-tone phone. Enabling your customers to be "self-service" customers—ones who can obtain banking information and perform transactions, according to their own schedules—meets the growing consumer demand of ultimate convenience and autonomy.

❖ **Security aspect for Telephone Banking:**

Telephone banking security, protects the data entered by the customer using industry leading algorithms to encrypt the PINs between the server and the core middleware so that they are never in the clear in the transaction messages. Extensive security measures are in place to prevent unauthorized transactions.

- List of accounts
- Account balances
- Funds transfers between accounts
- Last 10 debits and credits
- Card activation
- Cleared cheque by cheque number
- Order cheque book
- Request statement
- Bill Payments from account

- Loan Payment from account
- Interest rates notice
- Change password etc.

❖ **Benefits of Telephone/Mobile Banking:**

- Lowers the bank's total cost of customer care , by reducing the call volume of customer service representatives and tellers
- Provider of quick-to-market solutions ,which increases the value of resources
- Supports the bank's marketing plans ,with "Brand able" messages that play while a customer is waiting/on hold
- Improves customer's and the bank's productivity , by managing the flow of customer's information
- Strengthens strategic positioning by increasing the customer's loyalty by improving the customer service and achieving higher customer satisfaction.
- Online account information, provides real-time account balances as the transactions occur, giving the account holder accurate, up-to-date information.
- Providing the account holder secure financial transactions, 24 hours a day, 7 days a week, at any place.

❖ **Credit Cards/Debit Cards/Smart Cards**

The Credit Card holder is empowered to spend wherever, whenever and on whatever he wants, within the limits fixed by his bank. A Credit Card is a post- paid card. 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 him a debit card with a Personal Identification Number (PIN). When he makes a purchase, he enters his PIN on the shop's PIN pad. When the card is swiped 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 customer's account.

All the banks are adding chips to their current magnetic stripe cards to enhance their security and offer a new service, called Smart Cards. Smart Cards allow a lot of information to be stored on the magnetic stripe cards. In addition, these cards are highly secure, more reliable and perform multiple functions. They hold a large amount of personal information, from medical, health history, personal banking to personal preferences.

❖ **PC Banking**

PC banking means Personal Computer based home banking services to other banks. In this case customer can contact their banks from their home by using their personal computer. User-friendly - PC Banking displays easy-to-follow links to account summaries, transactions and other on-line services. It is a flexible system through which customer can easily transfer information from their PC to their banks. Customer can also submit electronic loan applications through PC Banking. With the help of PC banking, the customer can also perform the following transactions:

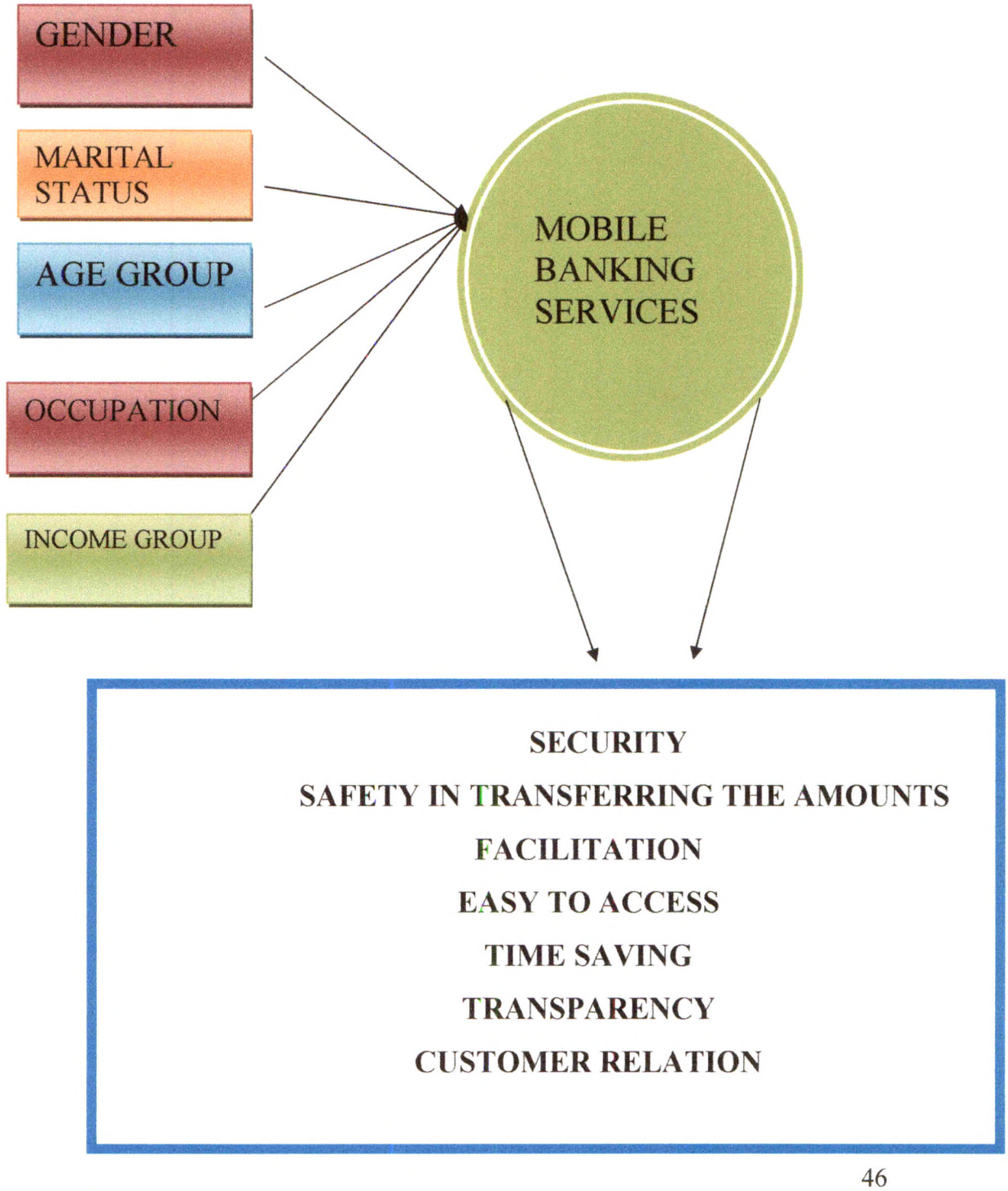
- Transfer funds
- Make loan payments
- Request withdrawal cheque
- View current balances
- View account history
- View cleared cheques
- Add a product or service to your existing account
- Read alert messages on your account
- Update your password
- Apply for a loan
- Report a lost or stolen ATM, debit or credit card

PC banking uses software like Quicken, Quick Books and Microsoft Money to get connected to the customer's bank. PC banking allows the customer / user to manage the entire transactions like handling saving account, loan account, investment transactions, paying bills etc. with the help of personal computer.

1.12 A CONCEPTUAL MODEL ON HYPOTHESIZED STATEMENTS

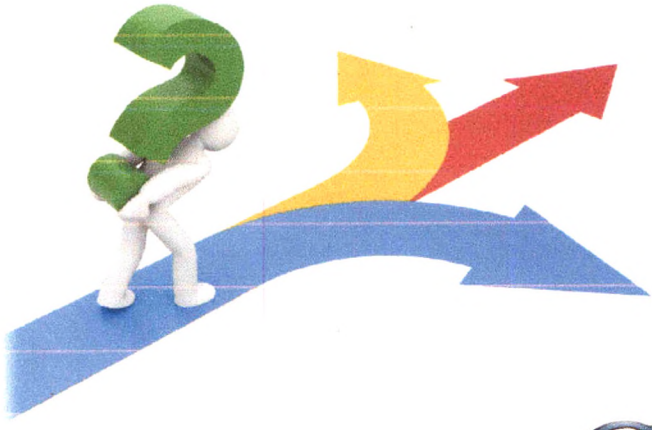
This study has explored many factors which vary according to the demographic characteristics that how they perceive the mobile banking services in their own perception. Mainly, effectiveness of mobile banking services and its usage and ultimately leads to customer satisfaction is a final destination:

FIGURE 1.12: HYPOTHESIZED FRAMEWORK



1.13 CONCLUSION

This chapter has focused on the history of Indian Banking Industry. The last two decades marked the era of globalization and liberalization. Indian banks have shown remarkable commitments in absorbing these reforms. Along with the popularity of the internet and easy access to the wireless network, Indian Banking sector has come a long way for banking system to transform itself from traditional branch to IT enabled banking. With rapid growth of cellular services in India, banks identified mobile phones as an effective tool to reach maximum unbanked customers. To become more efficient, flexible and competitive in today's changing business environment, banks are increasingly acknowledging the benefits of internet using mobile banking in satisfying the needs of the modern consumer.



Chapter-2

INDIAN BANKING INDUSTRY & SERVICE QUALITY

CHAPTER 2

INDIAN BANKING INDUSTRY & SERVICE QUALITY

2.1 INTRODUCTION:

This chapter emphasizes on the adoption of mobile banking enhances the performance of a bank in terms of reduction in costs, such as transaction, administration, and promotion cost Economic cost is one of the biggest concerns for any technology adoption. Numerous technological advancements fail due to high expenses and operational costs. Thus, technology having optimal expenses is launched in the market and rapidly adopted by the customers. Evaluating customer satisfaction requires certain dimensions to be considered. Level of service quality determines customer satisfaction and improved service quality has a positive outcome, but it must not exceed the expected profit margin. Therefore, creating long-term relations with customer through attention to needs, increase in service quality along with reduction in cost, leads towards improving firm's overall performance.

2.2 ADVANCEMENT IN TECHNOLOGY

The banking industry is facing rapid changes in the market, such as: new technologies, economic uncertainties, fierce competition, more demanding customers and the changing climate which lead to an unprecedented set of challenges. Banking is a customer oriented service industry which has witnessed a radical shift in the market power. The effectiveness and efficiency became the buzzword of the success of banking operations and its proper functioning particularly with respect to providing services to the customers. Service is an invisible thing which is indispensable from the person who extends it. An efficient or effective service is one which is extended appropriately by identifying and understanding the needs of the individual customer from time to time.

Customer service is a dynamic interactive process which needs continuous improvement. With the advancement of information technology and communication system, the whole world has been reduced to a global village. The customers at the present juncture are well exposed to unstoppable innovations in communication technology. Customer service is not only a critical function but plays a vital role for the business. It is the next most important business strategy. The improved customer service will definitely increase profitability.

During the past two decades or so, regulatory, structural and technological factors have significantly changed the banking environment. In a milieu which becomes increasingly competitive, service quality as a critical measure of organizational performance continues to compel the attention of banking institutions. The interest is largely driven by the realization that higher service quality in customers' satisfaction and loyalty, greater willingness to recommend to someone else, reduction in complaints and improved retention rates.

In the era of globalization and liberalization, economic reform has become an imperative to remain in the main stream of global economy. In this regard, banking sector being the backbone of the economy cannot maintain status quo. It is legitimately feared that the privileged status, which banks enjoyed for the last three decades, has already been changed with the entry of new players in the form of private and foreign banks. Under these circumstances, the banks will have to face prolonged challenges to retain the existing customers and to create new customers. However, success rate depends on the innovative strategies adopted by the banks including better customer services and adequate fulfillment of customer expectations.

2.3 IMPORTANCE OF SERVICE QUALITY IN BANKING SECTOR

Increased competition, highly educated consumers and increase in standard of living are forcing many businesses to review their customer service strategy. Many business firms are channeling more efforts to retain existing customers rather than to acquire new ones since the cost of acquiring new customer is greater than cost of retaining existing customers. As customers become more sophisticated, therefore, it becomes essential to consider the use of technology to respond to their continuous needs. Customers in developing economies seems to keep the 'technological factors' of services as the yardstick in differentiating good and bad services and the human factor-the employees seem to play a lesser role in discriminating the quality of service for banks. The variations in services offered by the banks develop excellence for service quality. Banking is no longer regarded as business dealing with money transaction alone, but it also seem as a business related to information on financial transaction. Customers at the corporate level or at retail level have always been important for the banks. As mobile banking is becoming more prevalent, level of customer satisfaction is also changing the scenario of technological environment.

Information Technology in the form of M-Banking plays a significant role in providing better services at lower cost. M-Banking has provided number of

convenient services to the customer. So as the service quality improves, the probability of customer satisfaction increases. Increase satisfaction in turn increases the mutual understanding, customer retention and a bond of trust between customers and banks. The banks which are providing these services on a wider scale to customers but at the same time technology based product is different in public and private sector banks. Mobile banking is an improvement over traditional banking system because it has reduced the cost of transaction processing, improved the payment efficiency, financial services and also has improved the banker-customer relationship. The relationship between M-Banking services and customer satisfaction has been studied in this present research. This study has tried to fill the gap between the m-banking services and customer satisfaction by providing accuracy and reliable services to the customers. There are following ways have been discovered to find out the customers' expectation towards mobile banking services and also this study has given suggestive measures to improve the satisfaction level of customers.
These are as follows:

- Customer can withdraw funds, transfer funds anytime, anywhere they want.
- Accessibility has been extended through technological development as it allows customers to do business from their home and office.
- It makes the banking activities and transactions very simpler to understand.
- There is no requirement of direct control with bank, as services can be operated wherever customer wants.
- It has reduced the waiting time of customers.
- Availability of employees at all times is not required as these services are provided 24 hours a day, seven days a week.
- Internet based services has enabled the corporate and retail customers to transact from home, office and travelling.
- Online fund transfer has enabled the customer to transfer funds from one bank to another or within the same bank at the same time.
- Communication, interaction between the bank and customer has been improved due to M-Banking.

2.4 STRATEGIES & FACTORS ADOPTED BY THE BANKING SECTOR

There are following factors /strategies adopted by the banking sector:

2.4.1 TECHNOLOGICAL FACTOR

Increasing complexity of technology reduces the adoption of technology and makes it costly for the firm to implement. Higher technological innovation with reduced complexity is profitable for adoption of mobile banking as well as it increases the trust of customers on the service provider thus increasing customer satisfaction. Comparatively traditional banking system incorporated tedious authentication and verification methods which required the customer to visit the bank personally. This activity consumed time of the customer as well as the service provider, increasing the cost and complexity and reducing profit. Technology innovation has reduced the requirement of staff at the branch, thus reducing the salaries given to them. The office setup required and other utilities are removed, thus saving firms investment, which is now used to establish computer infrastructure that operates automatically under the supervision of few skilled IT professionals, saving time and money Mobile banking as provides the facility of entity authentication which means "users should be sure that they are communicating with the real bank, before sending sensitive information to it; banks should know the identity of a user before processing its transactions".

2.4.2 STRATEGIC FACTOR

Customer loyalty and customer retention has importance over customer acquisition. The value of customer relationship management has become apparent in this competitive era of technological innovation. Trust is the backbone of any business. The level of risk involved varies with the nature of the product offering. The security issues are involved in customer authentication and authorization through all the stages of wireless transmission N. Daghfous and E. Toufaily. (2007).[1] C. L. Goi,(2006) [2] describes ease of use, transaction security, transaction accuracy, speediness, convenience, time utility, provision of different personal services, social desirability, usefulness, economic benefits, and user involvement as psychological factors associated with banking channel adoption.

Successful strategy in terms of customer retention or enhancement ultimately leads to the profitability. A stream of research has argued that in banking sector, the strategic focus of banks is to remain competitive in order to retain as many customers as

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[1] N. Daghfous and E. Toufaily. (2007). "The adoption of "E-banking" by Lebanese banks: Success and critical factors. [Online]. Available: http://www.esg.uqam.ca/recherche/document/2007/02-2007.pdf

[2] C. L. Goi,(2006) "Factors Influence Development of E-Banking in Malaysia," Journal of Internet Banking and Commerce, vol. 11, No.2.

possible D. Cohen, C. Gan, H. Yong and E. Choong, (2006).[3] They further added that retention of existing customers is more economical compared to acquiring the new ones. Thus, customer retention and customer satisfaction are the two main prospects to be catered while designing firm's strategy.

2.4.3 FUNCTIONAL FACTOR

Functional aspect of service provision to customers, in banking sector, is targeted to increases their interest and attract new customers. But to retain customers, the functionality offered must be reliable and timely. Similarly, accessibility with respect to convenience is a vital issue for the customers. Moreover timely delivery of service is also crucial or else it may cause anxiety in customers and a firm may lose them. Relationship service is the key factor that adds value to the service. Service provider must take care of this issue in order to extend the adoption of mobile banking.

Trust, which is a crucial factor, can be linked to customer service. Through the use of FAQ's and personnel contact to ensure reliability on the system can be created. The system must show full detail of the utility. Help material and printed material should be provided to customer. Confirmation detail is one of the functionality which broadens the aspect of trust in customers. SMS alerts cater the need to keep the customer updated with the bank transaction management, staff pay and promotions and staff training and evaluation" as managerial uses of customer satisfaction measurement. The evidence suggests that the functional criterion of a service has a vital impact on the customer's satisfaction level. Guidance is one of the critical features which must be provided to the customer. Help centre provides proper navigation details through the system, which enables a user to gain full benefit from the utility. Functional features like speed, interactivity, accessibility and security are the desired deliverables of customers. Furthermore, feedback and complaint management are the service demanded for proper user satisfaction. Customer inquiry service must be timely for customer satisfaction and retention.

Research of W. Chmielar, (2002)[4] suggested that functional diversification, service quality and versatility as well as efficiency of customer inquiry service as the key

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[3] D. Cohen, C. Gan, H. Yong and E. Choong, (2006) "Customer Satisfaction: A Study of Bank Customer Retention in New Zealand," presented at the Commerce Division, Discussion Paper No. 109.

[4] W. Chmielar,(2002) "Profitability aspects of Electronic Banking applications for Small Companies," presented at the European Conference on Information Systems, Poland, pp.1578-1588.

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[4] W. Chmielar,(2002) "Profitability aspects of Electronic Banking applications for Small Companies," presented at the European Conference on Information Systems, Poland, pp.1578-1588.

factors of measuring customer satisfaction. Furthermore, research shows that bank's put in their best effort to sell different products and services to customers. Today's customers desire quality products and services along value added benefits (D. Cohen, C. Gan, H. Yong and E. Choong, 2006).[5] He further added that "improvement in communications efficiency could have a significant impact on customer satisfaction and consequent behavioral intentions".

The important driving factor towards the adoption of technology advancement is the economic boost that it has brought to the setup. The recognition of mobile banking service in m-commerce depends upon the cost effectiveness introduced to the traditional banking system. Mobile banking offers customers reduced service charges than traditional banking charges. This is an incentive offered by the banks to use the technology and to attract customers, to increase their profit margin. Adopting technology-based innovation can be costly as institutions require a complete setup of computers, network coverage and skilled workers to start up with. But mobile technology has an advantage over other innovations as it acknowledges the existing infrastructure available in the market.

Mobile network coverage provided by the telecom companies is used by the banking sector to provide their services. To cope up with the changing environment and to ensure provision of risk free technology to customers, banks invest in establishing measures to provide secure and reliable transaction of money. Investment done to ensure security must be balanced with respect to the costs, as extra costs generally increase the cost of availing a service (J. Soroor and K.N. Toosi, 2005).[6] The repercussions of mobile technology are not necessarily transformed into financial profits, but often passed to the customer in the form of reduction in prices.

Similarly, P. Luarn and H. -H. Lin, (2005) [7] added to the same concept that "perceived financial cost will have a negative effect on the behavioral intention to use mobile banking". The argument suggests that customer satisfaction improves with

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[5] D. Cohen, C. Gan, H. Yong and E. Choong, (2006) "Customer Satisfaction: A Study of Bank Customer Retention in New Zealand," presented at the Commerce Division, Discussion Paper No. 109.

[6] J. Soroor and K.N. Toosi, (2005) "Implementation of a Secure Internet/Mobile Banking System in Iran," Journal of Internet Banking and Commerce, Vol. 10, No.3.

[7] P. Luarn and H. -H. Lin, (2005) "Toward an understanding of the behavioural intention to use mobile banking," Computers in Human Behavior, vol. 21, no. 6, pp. 873-891, Nov.

reduced economic costs. R. Copercini. (2007).[8] stated that customer satisfaction as the leading indicator for business profitability. He further argues that customer retention and penetration is the measure for customer satisfaction level.

2.5 SERVQUAL APPROACH

SERVQUAL model for measuring service quality (Parasuraman et al (1988)[9] reduced those into the following five:

- ***Tangibles*** - Appearance of physical facilities, equipment, personnel, and communication materials;
- ***Reliability*** - Ability to perform the promised service dependably and accurately;
- ***Responsiveness*** - Willingness to help customers and provide prompt service; Assurance, Knowledge, courtesy and trustworthiness of the personnel;
- ***Assurance***-confidence, personnel relations and security;
- ***Empathy*** (understanding the customer) -Making the effort to know customers and their needs.

This set of five dimensions is further subdivided into 22:

- ***Tangibles:***

- Company has modern equipment;
- Company possesses visually attractive equipment and facilities;
- Appearance of staff;
- Visually appealing materials connected with service.

- ***Reliability:***

- Realization of assured service;
- Reliability in solving customer problems;
- delivering the appropriate service from the first visit onwards;
- Providing the promised service at the promised time;
- Insisting on zero defect policy;

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[8] R. Copercini. (2007)."Calculating Financial Impact of Lean Six Sigma Projects". Available: http://www.isixsigma.com/index.php?option=com_k2&view=item&i d=334:&Itemid=49 (accessed 30 June, 2010).

[9] Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988). "SERVQUAL: a multi-item scale for measuring consumer perceptions of the service quality", Journal of Retailing, Vol. 64, No. 1, pp. 12 - 40.

- Willingness to help customers,
- Willingness of personnel to respond to customer n.

➢ ***Responsiveness:***

- Informing the customers about the time of service delivery;
- Prompt service delivery to customers.

➢ ***Assurance:***

- Personnel who instil confidence;
- Customers feel secure in their dealings with the company;
- Courtesy of the personnel;
- Knowledge of personnel to answer the customer questions.

➢ ***Empathy (understanding):***

Giving individual attention to customers;
- Giving personal attention to customers;
- The personnel focus on customers interests;
- The personnel understand specific needs of their customers.
- Operating hours are convenient to customers.

2.6 The 'GAP MODEL'

The task of a manager is to balance customer expectations and perceptions and to close any gap between the customer's expectations and customer's perceptions. The 'Gap' model (Parasuraman et al, 1985; Zeithamal et al, 1990)[10] is a means of describing customer dissatisfaction in the context of service quality. A series of seven gaps regarding service design and delivery were identified:

(1) The Knowledge Gap: It is the difference between what service provider's believe customers expect and customers' actual needs and expectations.

(2) The Standard Gap: It is the difference between managements' perceptions of customer expectations and the quality standards established for service delivery.

(3) The Delivery Gap: It is the difference between specified delivery standards and the service providers' actual performance on these standards.

(4) The Internal Communication Gap: It is the difference between what the company's service quality level and what the company is actually able to deliver.

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[10] Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1990). "A conceptual model of service quality and its implication", Journal of Marketing, Vol. 49, Fall, pp. 41-50.

(5) The Perception Gap: It is the difference between what is delivered and what customers perceive that have received (as they are unable to accurately evaluate service quality).

(6) The Interpretation Gap: It is the difference between what a service provider's communication effort promise and what a customer thinks was promised by these communications.

(7) The Service Gap: It is the difference between what customers expect to receive and their perceptions of the service that is delivered.

The ten determinants of service quality as well as by evaluating the gaps between the customers' expectations and customers' perception of quality led to the development of a scale for measuring customer perception of service quality.

2.7 CUSTOMER SATISFACTION

Today customers are becoming increasingly more demanding, less tolerant and very critical when not having their expectation met. There was a time that customer's satisfaction was not so important. Customers were purchased goods or services according to the choice of business owner. Today customers have lots of choice on where and who to deal with. As a result power has now shifted to the customers. If they feel, they are not satisfied they will simply go to another place to fulfil their expectation. Measuring customer satisfaction is extremely important in every business, particularly service industry in order to maintain existing customers and to bring new customers.

Now a-days customers are the most valuable asset because happy and satisfied customers are like free advertising of the business. Customer satisfaction has been an intensively discussed subject in the areas of consumer and marketing research. In recent times, customer satisfaction has gained new attention within the context of the paradigm shift from transactional marketing to relationship marketing. In numerous publications, satisfaction has been treated as the necessary premise for the retention of customers, and therefore has moved to the forefront of relational marketing approaches. The importance of customers in service sector business is unquestionable, because the success of service sector business is mostly depending on customers, the future and the financial security of this business is in the hands of customers. Therefore, service sector industry like insurance industry give proper emphasis on customer satisfaction. Customer satisfaction has a positive effect on service sectors. The insurance industry becomes an integral part of Indian market, with insurance

companies being significant institutional investors. This company affects money, capital markets and the real sectors in an economy, making insurance facility to ensure the completeness of a market. It is an industry with strategic importance for any country as it contributes to the financial sector as well as confers social benefits on the society. An insurance policy/ product protect the financial buyers against any financial loss arising from risks at some cost. It reduces the anxiety and Promotes financial stability to the clients. Moreover, to meet the various needs of various individual, the life insurance players have different types of product and services in their bouquet. Besides this, almost all companies offer the flexibility to customers to choose the most suitable products for themselves.

According to Singh (2012)[11] "satisfaction is an overall attitude towards a product provider or an emotional reaction to the difference between what customers expect and what they actually receive regarding the fulfillment of a need". It has been revealed form the previous researches that satisfaction as a person's feelings of pleasure, excitement, delight or disappointment which results from comparing a products perceived performance to his or her expectations. Satisfaction means the contentment one feels when one has fulfilled a desire, need or expectation. Furthermore, Customer satisfaction can be a measure of how happy customers are with the services and products of a supermarket. Keeping customers happy is of tremendous benefit to companies. Satisfied customers are more likely to stay loyal, consume more and are more likely to recommend their friends to the business.

Furthermore, Zairi (2000)[12] says that many studies have viewed the impact of customer satisfaction on repeat purchase, loyalty and retention and they have all echoed concern that customers who are satisfied are most likely to share their experiences with other people with regards to about five to six people. Additionally, this research is supported by La Barbera & Mazarsky (1983)[13] who also imply that

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[11] Singh, A. B. (2012). "Mobile Banking Based Money Order for India Post: Feasible Model and Assessing Demand Potential". Procardia- Social and Behavioral Science, 37, pp. 466-481.

[12] Zari Baf, M., Hosseini, S. M. and Bozorgmehr, B. (2012). "Comparative Study of Electronic and Traditional Banking Preferences of User Behaviour (Case study: Investigating the Use of Services Like Semnan E-banking Customers Bank)". Journal of Management, 21, pp. 55-66.

[13] La Barbera & Mazarsky (1983). "Building Customer Loyalty", Training and Development Journal, Vol. 45, No. 4, pp. 34-36

satisfaction influences repurchase intentions whereas dissatisfaction is seen as a primary reason for customer defection or discontinuation of purchase.

2.7.1 DIMENSIONS OF CUSTOMER SATISFACTION

Satisfaction is affected by many factors which include friendly & courteous employees, accuracy of billing, competitive pricing, service quality, good value and quick service. For purposes of this study, the researcher has concentrated on various dimensions of customer satisfaction which are Location, Additional Services, product quality, Service Quality, Facilities, Reliability, process, Value for money, Staff and Personnel service. Furthermore, these dimensions are used in the collection of data and analysis of results.

Services:

Product quality is described using attributes which are:

- **Performance:** which is refers to products primary operating characteristics Features: These are additional features which are also known as the bells and whistles of the product.
- **Conformance:** which is described as the extent to which a product will operate properly over a specified period of time under stated conditions of use?
- **Reliability:** the probability that will operate properly over a specified period of time under stated conditions of use.
- **Durability:** It is the amount of use a customer gets out of use of a product before it physically deteriorates or until replacement is preferable.
- **Service ability:** the speed competency and courtesy of repair.
- **Aesthetics:** How a product appeals to all the five senses of a human.
- **Customer perceived quality**: Customers perception of a products quality based on reputation of the firm.
- **Variety:** helps retailers to serve different tastes and preferences of its clients. Variety in product categories, it can improve the convenience of purchase in this way increasing customer satisfaction. Variety product selection can also help reduce the perceived costs like effort and travel time.

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- **Facilities**

  Under this dimension we use three elements like display, music and clean and spacious atmosphere to measure the effect of supermarket facilities on customer satisfaction.

- **Reliability**

  Reliability refers to how much trust can be afforded the banking staff and organization for example through parameters like accurate record and data. Reliability refers to the promises given by the banks. If the banks cannot keep or breaks the promises, it dissatisfies customers and results in negative word-of-mouth. In contrast, when the company is able to keep its promises, it increases customer confidence in the banks and creates customer satisfaction and lead to loyalty.

- **Process**

  Process will be measured using three elements such as number of checkout counters/ express checkout counters, opening hours and queue waiting time at counters. It is important to manage these elements of process in service delivery as they can make or break Customer satisfaction.

- **Value for Money**

  Customer satisfaction is driven by perceived price or value. Though the concept of value is relative and has several dimensions to it, Zeithaml (1988)[14] considers customers value as the overall assessment of the utility of a product based on perception of what is received and what is given. Dodds et al (1991),[15] controverter that customers perceptions of value represent a trade-off between the quality or benefit they receive in the product relative to the sacrifice they perceived by paying the price. The perceived value process involves a trade-off between what the customer gives such as price/money, sacrifices, perceived risk, opportunity cost, and learning cost in exchange for what he/she gets such as quality, benefits, utilities.

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[14] Zeithaml, V.A. (1988). "Consumer perceptions of price, quality, and value: a means-end model & synthesis of evidence", Journal of Marketing, Vol. 52 No. 3, pp. 2-22.

[15] Dodds et al (1991), Customer Relationship Management in Banking Sector; A comparative study of SBI and other nationalized commercial banks in India", Arth Prabhand: A Journal of Economics and Management, Vol.01, No.6, September, pp. 62-82.

According to Ciavolino & Dahlgaard (2007),[16] Value for money is the perceived level of quality relative to the price paid for a product or service. Value of money is based on competitive pricing of products, discounts awarded to customers, and promotions. Cronin & Taylor (1992) claimed that customer satisfaction is not only affected by customer services but also by price and convenience. Additionally, several researches have been done the value for money and the value attached to it by customers. These studies also point out the difference between price and quality and how they influence perceived value, customer satisfaction and customer behavior.

- **Staff**

Employees are important for a company's marketing strategy. In this paper, the authors make use of two elements namely friendly helpful staff and knowledgeable& quick performance to explain the staff dimension. According to Liao & Chuang (2004)[17] say that the successful implementation of a company's marketing concept is to an essential degree dependent on the frontline employees because of their direct customer interaction.

- **Personnel Service**

Quality will be measured using variables like personnel service, friendly staff, courteous and knowledgeable staff. The speed of solving problems is also an important variable. We also keep in mind the ability of staff to offer personalize service such as being able to recognize frequent customers and even greet them by name.

Mobile services are more attractive than current online services due to service ubiquity, a unique characteristic exclusive to the mobile environment (Tojib and Tsarenko, 2012).[18] In Iran, the most important services provided in Mobile Banking system are : balance enquiry, last three accounts transactions enquiry, draft, approved of Check amount, Check status enquiry, blocking card, buy prepaid recharge, installments payment, bills payment, received messages

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[16] Ciavolino & Dahlgaard (2007), CRM Adoption Framework and Its Success Measurement. Proceeding of the 2008 International Joint Conference in Engineering IJSE2008, Jakarta, Indonesia. August.

[17] Liao & Chuang (2004) A Unified Perspective on the Factors Influencing Usage Intention toward Mobile Financial Services. Journal of Business Research, 65 (11), pp. 1-10.

[18] Tojib, D. and Tsarenko, Y. (2012). Post-Adoption Modeling of Advanced Mobile Service Use. Journal of Business Research, 65 (7), pp. 922-928

archives, ability of receiving various customer accounts information, shopping ability, hotel expenses payment, stock market status enquiry.

2.8 CRM IN MOBILE BANKING SERVICES

CRM is most crucial and very important in service sector. Creating a relationship with the customers is quite easy as compared to retention the customer. Customers want from the service provider that they give maximum services to them which is equal to the money which they are paying. Relationship building with customers is now accepted and very crucial for the industries to maintained relation with same pace. In service industries, the goal is especially emphasized since a repeat customer is believed to cost merely a fraction of what needs to be sent in servicing a new customer is service transaction. It is believed that relationships flourish when marketers meet customers' core expectations and exceed in respect of other features of their total offering. Service firms have been the pioneers in adopting the practice of CRM practices.

Now, we talked about the Indian banking industry which has witnessed rapid development in recent past with the initiation of financial sector reforms. The thrust of financial sector reforms was to improve efficiency, competitiveness and productivity of the financial system which is delivering to the account holder or new customer. The entry of new generation private sector banks which provided technology aided services like Internet Banking, Mobile banking, Inter Branch Network etc has electrified the banking environment in India and has added a new dimensions to automation in Indian banking.

2.8.1 CRM STRATEGIES

Customer relationship management is a vital factor to improve the performance of the banks. Most of the banks in India are new turning to CRM as they are increasingly realizing that the cost of acquiring new customers is for higher than the cost of retaining existing customers. This quest has led to the implementation of CRM in banks. The concept of CRM is in the initial stage of implementation in banks, as getting the CRM philosophy work in a bank is quite complex as well as a challenging task for, its implementation is based on certain key principles, namely;

The banks must realize that all customers having different preferences and belonging to different background.

- Customer profitability varies from person to person
- Not all customers are evenly desirable for the banks.
- The banks must differentiate their customers based on the 'value criteria'.
- Value is the profit that the customer adds to the bank account.

A more profitable customer is a 'High Value' customer and a less profitable customer is a 'Low Value' customer. In recent years, the banking industry around the world has been undergoing a rapid transformation. In India also, the wave of deregulation of early 1990s has created heightened competition and greater risk for banks and other financial intermediaries. According to a RBI statement, in future, India will have a competitive banking market as one of the most attractive market after 2009. India will see foreign banks come in, with more benefits offered to a customer. Therefore, it is imperative that Indian banks wake up to this reality and re focus on their core area and tries to maintain the customers and learnt how to retain the customers. A greater force on CRM is the only way the banking industry can protect its market share and to enhance the growth rate. The success of CRM strategy is all depends on its ability to understand the customers need and to integrate them with the organizations strategy. Banking industry has realized the significance of customer-centred philosophies and is turning to quality management approaches to help managing their businesses. Many scholars and service marketers have explored consumers' cognitive and affective responses to the perception of service attributes in order to benefit by providing what consumers need in an effective and efficient manner. Consumer satisfaction is considered the primary intervening constructs in the area of service marketing because ultimately it leads to the development of consumer loyalty or re-patronization of a product or service (Ravichandran et al., 2010).[19]

Service quality and customer satisfaction are very important concepts, which must understand by companies that want to grow while keeping their competitive edge. In the modern competitive environments, delivering high service quality is the key for a sustainable competitive advantage. Customer satisfaction has a positive effect on an organization's profitability. Satisfied customers of any business repeat purchase, show brand loyalty, and give positive word of mouth. Many models have been developed to

[19] Ravichandran, K., Prabhakaran, S. and Kumar, A. S. (2010). Application of Servqual Model on Measuring Service Quality: A Bayesian Approach. Enterprise Risk Management, 1 (1), pp. 145-169.

measure service quality delivered by firms in numerous businesses It is important to review service quality models because of its relation with customer satisfaction. Thus, service quality has become a major area of interest of practitioners, managers and researchers because of its impact on customer satisfaction, customer loyalty, and of course, company profitability (Zekiri, 2011).[20]

2.9 CUSTOMER FOCUS IN BANKING SERVICES

The scenario of banking sector is competitive in which the customers are demanding, and they are aware about the services which are rendered by the banks. Banks providing the tangible services like interest rates, loans scheme, EPF, types of account and the intangible services like staff behaviour, efficiency, speed of transactions and the infrastructure. The banks may need to include customer oriented approach in the areas like cash accessibility, security, money transfer, deferred payment and financial advices to the customers.

There are following strategies which are accessible by relationship manager:

- To win back or save customers
- To maintain and attract the potential customers
- To create trust among the existing customers
- To up sell or offer cross services.

The future of banking sector are depends upon the ability of the bank to develop close relationship with the customers. In order to develop the trust with customers the banking industry has to focus on the new emerges and adopted the new technology. Today customers are rendering the services by bank such as ATM services, access to internet banking, mobile banking, and credit cards. These have elevated banking beyond the barriers of time and space.

Indian banks have expanded to cover a large geographic & functional area to meet the developmental needs. They have been managing a world of information about customers - their profiles, location, etc. They have a close relationship with their customers and a good knowledge of their needs, requirements and cash positions.

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[20] Zekiri, J. (2011). Applying SERVQUAL Model and Factor Analysis in Assessing Customer Satisfaction with Service Quality: The Case of Mobile Telecommunications in Macedonia. International Bulletin of Business Administration,11, pp. 86- 101.

Though this offers them a unique advantage, they face a fundamental problem. During the period of planned economic development, the bank products were bought in India and not sold. What our banks, especially those in the public sector lack are the marketing attitude. Marketing is a customer-oriented operation. What is needed is the effort on their part to improve their service image and exploit their large customer information base effectively to communicate product availability. Achieving customer focus requires leveraging existing customer information to gain a deeper insight into the relationship a customer has with the institution, and improving customer service-related processes so that the services are quick, error free and convenient for the customers.

Furthermore, banks need to have very strong in-house research and market intelligence units in order to face the future challenges of competition, especially customer retention. Marketing is a question of demand (customers) and supply (financial products & services, customer services through various delivery channels). Both demand and supply have to be understood in the context of geographic locations and competitor analysis to undertake focused marketing (Advertising) efforts. Focusing on region-specific campaigns rather than national media campaigns would be a better strategy for a diverse country like India.

2.9.1 CUSTOMER-CENTRICITY

Customer-centricity also implies increasing investment in technology. Throughout much of the last decade, banks world-over have re-engineered their organizations to improve efficiency and move customers to lower cost, automated channels, such as ATMs and online banking. But this need not be the case. However, to maximize the value of this resource, our banks need to transform their branches from transaction processing centres into customer-centric service centres. This transformation would help them achieve bottom line business benefits by retaining the most profitable customers. Branches could also be used to inform and educate customers about other, more efficient channels, to advise on and sell new financial instruments like consumer loans, insurance products, mutual fund products, etc. The biggest challenge our banks face today is to establish customer intimacy without which all other efforts towards operational excellence are meaningless. The banks need to ensure through their services that the customers come back to them. This is because a major chunk of income for most of the banks comes from existing customers, rather than from new customers.

Banks CRM system must capture customers taste, preference, behaviour, living style, age, education, cultural background, physical and psychological characteristics, sensitivity etc. While differentiating customers by the value criteria into low and high value customers. Once the banks differentiate their customers Vis-a Vis the profitability and their other trait, it becomes easy for the banks to customize their service to maximize the overall value of their customer's portfolio.

The concept of CRM needs to make bits impact in the banking scenario, particularly in the nationalized banks, the state banks groups and the private sector banks which constitute the core of the banking system in India. The component of CRM already exists but needs to be put together like the pieces of a riddle. The pieces to be properly aligned are people, processes, information technology and leadership. This connectivity has to be done by the management, which can be achieved by them by practice over a period of time.

Banks also need to identify customers and products that would be most profitable and target customers with products that are appropriate to their needs and service the customers with greater cost efficiency. Banks also need to find out the avenues for increased customer satisfaction, which leads to increased customer loyalty.

2.10 BANKING PROFILE

❖ HDFC Standard Life

HDFC Life, one of India's leading private life insurance companies, offers a range of individual and group insurance solutions. It is a joint venture between Housing Development Finance Corporation Limited (HDFC), India's leading housing finance institution and Standard Life plc, the leading provider of financial services in the United Kingdom. HDFC Life's product portfolio comprises 26 retail and 6 group products, which meet various customer needs such as Protection, Pension, Savings, Investment and Health. Customers have the added advantage of customizing their plans, by adding optional benefits called riders, at a nominal price.

Apart from several retail and group products in its portfolio, the company also has five optional rider benefits catering to the savings, investment, protection and retirement needs of customers. HDFC Life continues to have one of the widest reaches with more than 500 branches servicing customer needs, along with a strong base of Financial Consultants.

Standard Life was established in 1825, and is a leading provider of long term savings and investments to around 6 million customers worldwide. Headquartered in

Edinburgh, Standard Life has around 9,000 employees across the UK, Canada, Ireland, Germany, Austria, India, USA, Hong Kong and mainland China.

The Standard Life group includes savings and investments businesses, which operate across its UK, Canadian and European markets; corporate pensions and benefits businesses in the UK and Canada; Standard Life Investments, a global investment manager, which manages assets of over £157 bn globally; and its Chinese and Indian Joint Venture businesses. At the end of April 2011 the Group had total assets under administration of £198.4 bn. Standard Life plc is listed on the London Stock Exchange and has approximately 1.5 million individual shareholders in over 50 countries around the world. The company also relooked at talent acquisition strategies and identified innovative and cost effective sources of recruiting talent. In addition to creating a culture of competency based talent processes during the year, the Company focused on harnessing the potential of employees and developing a value proposition for retaining high caliber employees. Career development opportunities were extended based on fair and transparent performance based culture connecting to the organizational goals set at the start of the business and variable pay were granted. This enabled high performance and retention.

The Learning and development team played a pivotal role in channelizing their deliveries to the strategic needs of Sales and Operations in the form of need based training and structured induction programmes. Efforts were also directed towards improving managerial effectiveness, with the launch of significant endeavors noteworthy being 360 degree feedback and coaching for the senior leadership and LOTUS for line managers. The company's engagement initiatives revolved around interaction on various facets of the work environment and communication updates on the Company and the industry. Employee friendly policies launched this year were well appreciated by the employees thus demonstrating people care.

In recognition to these efforts, HDFC life has been adjudged among top 50 best places to work for in 2011 and 1st in the insurance industry as a part of the study conducted by the Great Places to Work Institute.

The company's sustained growth and performance in the tough its people strategy. The Company focused on using technology cost-effectively and optimally and ensure smooth business operations and achievement of targets.

During the year, there were various initiatives taken towards providing differential customer experience through technology aided platforms like the Customer Portal and Corporate Website. New payment options using credit cards were introduced for our

customers. Management and monitoring of sales activities, identified as a critical productivity measure for the sales force, was carried out through the Sales Activity Management system. A generic platform for the broker channel was created and a new policy administration system for rural policies was launched. The Policy and Commissions accounting was made more efficient and controls were enhanced.

❖ **ICICI**

Suggestive Strategies as CRM initiatives of ICICI Bank;

- **Mobile ATMs**: Customers of ICICI Bank can access their bank accounts through mobile ATMs. These ATMs are kept in vans and parked at locations that have a high traffic of bank customers such as the commercial areas in a city or up market residential areas ICICI Bank now provides standard ATM facilities through ATM vans. This facility has been tried at Mumbai, Chandigarh and various places in Kerala during specified timings.

- **Bulk Deposits**: The ICICI Bank's Bulk Deposit ATMs enable customers to deposit large amounts at one time. Unlike conventional ATMs, which are able to accept only 30 notes at a time, these ATMs allow the deposit of huge amounts. The bulk deposit facility can be availed of by select customers who need to deposit huge amounts of cash. ICICI Bank issues a special card called the 'Deposit Only Card' to facilitate this service. This card allows for deposit transactions only. The service is further facilitated by the provision of special bags at ATMs in which a customer can put his money. After the deposit slip is filled, the bag can be inserted in the ATM. The transaction slip is then generated by the ATM as an acknowledgement of the deposit. ICICI Bank also has cash pick-up service for business customers under the business banking segment.

- **ATMs for the visually challenged**: ICICI Bank has launched ATMs with special voice-guided systems, which guide a visually challenged person to access ATMs without any help. The jack on the terminal enables headphones to be connected to it and voice commands enable the customer to transact business. Customers may choose a suitable language to get voice commands. After the language selection is done, the customer is guided to ensure that the ATM card is inserted in the right slot and thereafter, guidance is provided for entering the PIN by using the keypad. A raised button is provided on number 5 to enable users to identify the numbers easily through

touch. The slot for cash collection has such raised 'pips' that enable easy identification through touch.

➢ **Other Services through ATMs**: Apart from the usual transactions involving the bank, some other services can also be availed of by ICICI Bank customers. These include:

- Prepaid mobile recharge
- Buying and renewing Internet packs (such as those of TATA Indicom Internet service provider and Sify).
- Making donations for Tirupati Tirumala Devasthanams, Nathdwara temple and Shri Mata Vaishnodevi shrine.
- Mutual fund transactions, and
- Bill payments

❖ **Mobile phone as a Virtual Wallet**: The mobile phone has been transformed into a virtual wallet – a new innovation in mobile commerce. On September 19, 2005, Airtel, ICICI Bank and VISA announced the launch of "mChq" – a revolutionary new service – which is a credit card using the mobile phone. This is the first mobile-to-mobile payment option which enables Airtel customers and ICICI Bank Visa cardholders to pay for their purchases with their Airtel Mobile phones. The service has eliminated the need for carrying physical cash for making a purchase and also the problems associated with the point of sale (POS) terminal since the mobile phone services as a secure POS and a payment mechanism.

❖ **Social Events**: ICICI Bank organized the largest domestic invitational amateur golf event for HNI (high-net-worth individuals) customers. This nation-wide golf tournament had over one lakh high-net-worth clients of ICICI Bank's private banking division participating in the event.

❖ **Mobile Banking Benefits**: Mobile banking enables the customer to avail of many facilities by just sending an SMS. These facilities, which are currently offered free of cost, are as follows:

- Locating ATM
- Locating branch
- Locating drop box
- Alert facilities like salary credit, account debit/credit, cheque bounce, etc., and
- Queries on banking, cards and de-mat account.

➢ **AXIS BANK**

Axis Bank is the third largest private sector bank in India. Axis Bank offers the entire spectrum of financial services to customer segments covering Large and Mid-Corporate, MSME, Agriculture and Retail Businesses. The Bank has a large footprint of 1947 domestic branches (including extension counters) and 11,245 ATMs spread across the country as on 31st March 2013. The Bank also has overseas offices in Singapore, Hong Kong, Shanghai, Colombo, Dubai and Abu Dhabi. Axis Bank is one of the first new generation private sector banks to have begun operations in 1994. The Bank was promoted in 1993, jointly by Specified Undertaking of Unit Trust of India (SUUTI) (then known as Unit Trust of India),Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC), National Insurance Company Ltd., The New India Assurance Company Ltd., The Oriental Insurance Company Ltd. and United India Insurance Company Ltd. The shareholding of Unit Trust of India was subsequently transferred to SUUTI, an entity established in 2003.

With a balance sheet size of Rs.3, 40,561 crores as on 31st March 2013, Axis Bank has achieved consistent growth and stable asset quality with a 5 year CAGR (2009-13) of 26% in Total Assets, 24% in Total Deposits, 27% in Total Advances and 37% in Net Profit.

- ❖ **Axis Bank believes in providing quality services to the customer their core values are;** Customer Centricity, Ethics, Transparency, Teamwork & Ownership, handling the customer queries, suggestions, feedback and complaints if any there is Customer care Department in AXIS. Axis find out their customers through introducing newly services by calling them. As the name suggests, the customer care service is specially catered to serve all customers of AXIS bank, whether existing customers or new customers. The

executive customer care is providing relevant information regarding the services as well as their working system to the customer. Axis Bank are spread in India at various places and they providing 24X7 work environment so that the customers can contact any time in case of any problem. Employees of AXIS have thorough knowledge.

➢ Overview of the Structure of SBI

State Bank of India (SBI) is India's largest and oldest bank. The bank operates more than 13,500 branches within India. It also has majority stakes in five associate banks. It has more than 170 branches in about 30 foreign countries, including various locations in the US, Canada, and Nigeria. SBI has other units devoted to capital markets, fund management, factoring and commercial services, credit cards, insurance, and brokerage services. The Reserve Bank of India owns about 60% of State Bank of India.

Everyone knows about SBI i.e. State Bank of India. SBI is the well known bank and nationalized bank in India. Today's, Customers desires security related to their account which may they find in SBI.SBI is the run by the government so the public feel secure. There are some Strategies offered by SBI to the customers are;

- **Create an account opening** – SBI to open a new account enables online. Customers can apply for new accounts in branches. Types of accounts such as savings, current, fixed deposits and recurring deposit account can be opened.
- **Activity Enquiry** – SBI online transaction provides for the status of the investigation. Transaction details and transaction can view the current status and verify.
- **SBI e-Tax** – via E-SBI customer can pay taxes online. This feature TDS, Income Tax, and Indirect Tax, corporate Tax, estate duty and enables to pay fringe benefits.
- **E-Ticketing** - Reservation of Train Bus and air can be booked online with SBI.
- **RTGS/NEFT** - In these services, customer can transfer money from one bank to another bank.
- **Mutual funds** - SBI also provide services in investing money in mutual funds and select a plan accordingly.

- **Third Party Transfer** – adding as a trustee's third party can transfer the money to the accounts of third parties. Beneficiary account should any branch of SBI.

- **Demand Draft** – DD can get from customer saving account, current account, loans or overdrafts of SBI

State Bank of India (SBI) is India's largest commercial bank. SBI is also present worldwide, with seven international subsidiaries in the United States, Canada, Nepal, Bhutan, Nigeria, Mauritius, and the United Kingdom, and more than 50 branch offices in 30 countries. In Indian government's infrastructure, agricultural, and industrial development policies, SBI has been forced to revamp its operations since competition was introduced into the country's commercial banking system. As part of that effort of Business Process Reengineering, SBI has been rolling out its own network of automated teller machines, as well as developing anytime-anywhere banking services through Internet and other technologies. SBI also has taken advantage of the deregulation of the Indian banking sector to enter the bank assurance, assets management, and securities brokering sectors. The establishment of the British colonial government in India brought with it calls for the formation of a Western-style banking system, if only to serve the needs and interests of the British imperial government and of the European trading houses doing business there. The creation of a national banking system began at the beginning of the 19th century.

The first component of what was later to become the State Bank of India was created in 1806, in Calcutta. Called the Bank of Calcutta, it was also the country's first joint stock company. Originally established to serve the city's interests, the bank was granted a charter to serve all of Bengal in 1809, becoming the Bank of Bengal. The Bank of Bengal also received the right to issue its own notes, which became legal currency within the Bengali region. This right enabled the bank to establish a solid financial foundation, building an interest-free capital base.

Toward the middle of the century, the imperial government created two more regional banks. The Bank of Bombay was created in 1840, and was soon joined by the Bank of Madras in 1843. Together with the Bank of Bengal, they became known as the "presidency" banks. All three banks were operated as joint stock companies, with the imperial government holding a one-fifth share of each bank. The remaining shares were sold to private subscribers and, typically, were claimed by the Western European trading firms.

On the one hand, the presidency banks were given the responsibility for the new currency's management and circulation. On the other, the government agreed to transfer treasury capital backing the currency to the banks--and especially to their branch offices. This latter feature encouraged the three banks to begin building the country's first banking network. The three banks then launched an expansion effort, establishing a system of branch offices, agencies, and sub-agencies throughout the most populated regions of the Indian coast, and into the inland areas as well. By the end of the 1870s, the three presidency banks operated nearly 50 branches among them.

The majority of that, however, was transferred to the three newly created Reserve Treasuries, located in Calcutta, Bombay, and Madras. The Reserve Treasuries continued to lend capital to the presidency banks, but on a more restrictive basis. The minimum balance now guaranteed under the Presidency Banks Act was applicable only to the banks' central offices. With branch offices no longer guaranteed a minimum balance backed by government funds, the banks ended development of their networks. Only the Bank of Madras continued to grow for some time, supplied as it was by the influx of capital from development of trade among the region's port cities. The loss of the government-backed balances was soon compensated by India's rapid economic development at the end of the 19th century. The building of a national railroad network launched the country into a new era, seeing the rise of cash-crop farming, a mining industry, and widespread industrial development. The three presidency banks took active roles in financing this development. The banks also extended their range of services and operations, although for the time being was excluded from the foreign exchange market.

By the beginning of the 20th century, India's banking industry boasted a host of new arrivals, and particularly foreign banks authorized to exchange currency. The growth of the banking sector, and the development of indigenous banks, in turn created a need for a larger "bankers' bank." At the same time, the Indian government had outgrown its colonial background and now required a more centralized banking institution. These factors led to the decision to merge the three presidency banks into a new, single and centralized banking institution, the Imperial Bank of India.

Created in 1921, the Imperial Bank of India appeared to inaugurate a new era in India's history--culminating in its declaration of independence from the British Empire. The Imperial Bank took on the role of central bank for the Indian

government, while acting as a bankers' bank for the growing Indian banking sector. At the same time, the Imperial Bank, which, despite its role in the government financial structure remained independent of the government, carried on its own commercial banking operations.

In 1926, a government commission recommended the creation of a true central bank. While some proposed converting the Imperial Bank into a central banking organization for the country, the commission rejected this idea and instead recommended that the Imperial Bank be transformed into a purely commercial banking institution. The government took up the commission's recommendations, drafting a new bill in 1927. Passage of the new legislation did not occur until 1935, however, with the creation of the Reserve Bank of India. That bank took over all central banking functions.

The Imperial Bank then converted to full commercial status, which accordingly allowed it to enter a number of banking areas, such as currency exchange and trustee and estate management, from which it had previously been restricted. Despite the loss of its role as a government banking office, the Imperial Bank continued to provide banking services to the Reserve Bank, particularly in areas where the Reserve Bank had not yet established offices. At the same time, the Imperial Bank retained its position as a bankers' bank.

Into the early 1950s, the Imperial Bank grew steadily, dominating the Indian commercial banking industry. The bank continued to build up its assets and capital base, and also entered a new phase of national expansion. By the middle of the 1950s, the Imperial Bank operated more than 170 branch offices, as well as 200 sub-offices. Yet the bank, like most of the colonial government, focused primarily on the country's urban regions.

By then, India had achieved its independence from Britain. In 1951, the new government launched its first Five Year Plan, targeting in particular the development of the country's rural areas. The lack of a banking infrastructure in these regions led the government to develop a state-owned banking entity to fill the gap. As part of that process, the Imperial Bank was nationalized and then integrated with other existing government-owned banking components. The result was the creation of the State Bank of India, or SBI, in 1955.

The new state-owned bank now controlled more than one-fourth of India's total banking industry. That position was expanded at the end of the decade, when new legislation was passed providing for the takeover by the State Bank of eight regionally based, government-controlled banks. As such the Banks of Bikaner, Jaipur, Indore, Mysore, Patiala, Hyderabad, Saurashtra, and Travancore became subsidiaries of the State Bank. Following the 1963 merger of the Bikaner and Jaipur banks, their seven remaining subsidiaries were converted into associate banks.

In the early 1960s, the State Bank's network already contained nearly 500 branches and sub-offices, as well as the three original head offices inherited from the presidency bank era. Yet the State Bank now began an era of expansion, acting as a motor for India's industrial and agricultural development that was to transform it into one of the world's largest financial networks. Indeed, by the early 1990s, the State Bank counted nearly 15,000 branches and offices throughout India, giving it the world's single largest branch network.

SBI was allowed to dominate the Indian banking sector for more than two decades. In the early 1990s, the Indian government kicked off a series of reforms aimed at deregulating the banking and financial industries. SBI was now forced to brace itself for the arrival of a new wave of competitors eager to enter the fast-growing Indian economy's commercial banking sector. Yet years as a government-run institution had left SBI bloated--the civil-servant status of its employees had encouraged its payroll to swell to more than 230,000. The bureaucratic nature of the bank's management left little room for personal initiative, nor incentive for controlling costs.

The bank also had been encouraged to increase its branch network, with little concern for profitability. As former Chairman Dipankar Baku told the *Banker* in the early 1990s: "In the aftermath of bank nationalization everyone lost sight of the fact that banks had to be profitable. Banking was more to do with social policy and perhaps that was relevant at the time. For the last two decades the emphasis was on physical expansion."

Under Baku, SBI began retooling for the new competitive environment. In 1994, the bank hired consulting group McKinsey & Co. to help it restructure its operations. McKinsey then led SBI through a massive restructuring effort that lasted through much of the decade and into the beginning of the next, an effort that helped SBI develop a new corporate culture focused more on profitability than on social and political policy. SBI also stepped up its international trade operations, such as foreign

exchange trading, as well as corporate finance, export credit, and international banking.

SBI had long been present overseas, operating some 50 offices in 34 countries, including full-fledged subsidiaries in the United Kingdom, the United States, and elsewhere. In 1995 the bank set up a new subsidiary, SBI Commercial and International Bank Ltd., to back its corporate and international banking services. The bank also extended its international network into new markets such as Russia, China, and South Africa.

Back home, in the meantime, SBI began addressing the technology gap that existed between it and its foreign-backed competitors. Into the 1990s, SBI had yet to establish an automated teller network; indeed, it had not even automated its information systems. SBI responded by launching an ambitious technology drive, rolling out its own ATM network, then teaming up with GE Capital to issue its own credit card. In the early 2000s, the bank began cross-linking its banking network with its ATM network and Internet and telephone access, rolling out "anytime, anywhere" banking access. By 2002, the bank had succeeded in networking its 3,000 most profitable branches. The implementation of new technology helped the bank achieve strong profit gains into the early years of the new century.

- **BANK OF MAHARASHTRA**

Bank of Maharashtra was registered on 16th Sept 1935 with an authorized capital of Rs 10.00 lakh and commenced business on 8th Feb 1936. Known as a common man's bank since inception, its initial help to small units has given birth to many of today's industrial houses. After nationalization in 1969, the bank expanded rapidly. It now has 1421 branches all over India. The Bank has the largest network of branches by any Public sector bank in the state of Maharashtra. The bank has fine tuned its services to cater to the needs of the common man and incorporated the latest technology in banking offering a variety of services. Bank of Maharashtra is a public sector bank in Maharashtra, which offers personal banking, cash management, retail loans and other financial services. Their services include deposits, savings/current bank account, vehicle loans, personal loans, retail trade finance, global banking, lending to priority sector and small scale sector, foreign exchange and export finance, corporate loans and equipment loans. The Bank has one subsidiary, namely The Maharashtra Executor & Trustee Company Pvt Ltd, which undertakes management of public/ private trusts and administration/ execution of Will.

➢ BANK OF ALLAHABAD

Allahabad Bank is one of the premier nationalized banks in India. It is also the oldest joint stock bank of India. It was incorporated by a group of Europeans at Allahabad on April 24, 1865. It was the time Indian economy had started shifting towards organized trade and business affairs. After some years in 1920, the P&O Bank brought Allahabad Bank and its headquarters at Kolkata. The Allahabad bank got an entirely new identity when it was nationalized in 1969 along with 13 other banks in India. Since then the Allahabad Bank had a smooth journey towards progress. Today it is one of the leading banks in India with a whooping business of over Rs.1, 00,000 crores.

Allahabad has adopted CBS (Core Banking Service) since 2006 and has developed 24 hours connectivity with its 2165 branches across the length and breadth of the country. In 143 years of it existence the bank has come a long way by developing a wide grip over all the corners of India. The Allahabad bank got an entirely new identity when it was nationalized in 1969 along with 13 other banks in India. Since then the Allahabad Bank had a smooth journey towards progress. Today it is one of the leading banks in India with a whooping business of over Rs.1, 00,000 crores. Allahabad has adopted CBS (Core Banking Service) since 2006 and has developed 24 hours connectivity with its 2165 branches across the length and breadth of the country. The bank has initiated the BPR practices in the year 2008. For the smoothening functioning in the bank the Bank has implemented the BPR practices through computerization of 1057 branches of which 867 are TBM branches. Nearly 85% of the Banks business covered under computerization. The Bank has procured source code of application software from the existing vendor to computerize remaining branches.

2.11 CONCLUSION

To conclude this chapter, the researcher has stated that Indian Banks have traced a unique growth in the past decade with the commencement of profitable alteration. The Private Banks have transformed themselves into profit oriented business organizations besides playing a developmental role in the economy. In an attempt to be more profitable, the banks have become competitive and more customers oriented. This new orientation has compelled them to take a more realistic approach for conducting the business. The Mobile Banking is one such tool to retain the customers which helps in meeting their expectations according to changing needs. While analyzing the mobile banking services in both public and private banking sector, it was found that the Private Sector Banks have been able to provide the mobile banking services more effectively and efficiently when compared to their Public Sector counterparts. This indicates that strategically speaking, the Private Sector Banks have been more innovative in understanding their customers and in building good relations with them.

Chapter-3

REVIEW OF LITERATURE

CHAPTER 3

REVIEW OF LITERATURE

INTRODUCTION

This chapter provides a direction and framework of theoretical advancement that have been considered in the research performance evaluation of the banking industry. The objective of this chapter is to review the previous researches conducted on the banking industry for the purpose of finding out the performance of different bank groups working in banking industry related to mobile banking.

The review of previous researches helps the researcher to identify the problems to be taken up in the present study. Based on the problems identified, the researcher has formulated the methodology for the present study. This chapter presents a review of relevant research studies relating to the present study area. From the below reviews of both empirical and conceptual work, it is clear that different authors have approached various self-service technology-enabled, financial information mediums including M-Banking in different ways in varying different levels of analysis. These different approaches helped in the emergence of more and more literature on the subject over the time. It gives an idea on extensive and diverse works on M-Banking.

While analyzing the different studies, it was found that banks have grown in size, functions, technology, and different area of operations and in services. To find what others have done, over 263 research papers from 1995 to 2014 were reviewed from various national and international journals. Out of 263 research papers the review of literature has been confined to 49 which were considered worth studying at length. Inflibnet database 'Shodhganga' was referred and out of 1300 Ph.D. theses on banking, only 18 were studied which had some relations with on-line banking, mobile banking & customer satisfaction. Out of these 11 theses have been studied at length & referred below and the remaining reviews are collected from Postgraduate project report and websites. Moreover, the review of related studies has helped the researcher to conceptualize the present study and to design the research methodology.

Technological advancement has been seen in the banking industry and government liberalized the norms for banks in the Indian financial market. It definitely affects the

working of Indian banks. There are many researches which analyzes the performance of Indian and foreign banks by considering different parameters, i.e., profitability, deposit, advance, earnings, expenditure, etc., but no research considers all the variables together. Therefore, it has been found that the need of performance evaluation of Indian and foreign banks exists. The chapter covers thorough literature review of various research works available related to the topic, which has been considered under this study. This literature review has included the problem area, different reports and notification and occasional papers of Reserve Bank of India, special reports of Indian Banks Association, Economic Survey, International and National research papers, Annual Reports of Banks, Banks' profile yearly issued by RBI.

Few of the literature review having relative importance to the topic are as follows:

A Study by **Malviya, S., & Sharma, G. (2014)** [1] determined the customer's perception toward the e-banking services. Analysis of variance technique is employed to study the significant relationship between the occupation and customer perception of e-banking services and significant relationship between the age and customer perception of e-banking services. The result clearly shows that different age group of customer and different occupation group of customers have different perception toward the e-banking services. Demographic factors significantly influenced by internet banking behavior, specifically, occupation and age. Finally, this study suggests that the e-banking services of public and private banks it will help to the bankers to understand the customers need in a better way.

A Study by **Sonawane, A. S. (2014)**[2] emphasized on the awareness and perceptions of mobile phone users on mobile banking services, The willingness of mobile phone users on utility of mobile banking services, The mobile phone users' perceived movement of mobile banking services/activities, The movement styles or decision making styles of mobile phone users in respect of mobile banking services/activities, The relationship between demographic variables and use or adoption of mobile

[1]Malviya, S., & Sharma, G. (2014). "Exploring Usage Pattern of Mobile Banking Among Public and Private Sector Banks in Indore". Asian Journal of Research in Banking and Finance, 4 (1), pp.56-63.

[2] Sonawane, A. S. (2014). "A Study of mobile phone users in Thane district". South Asian Journal of Marketing & Management Research, 4(7), 48-55.

banking services. With mobile phone penetration of over 80 percent, India has a huge potential for mobile banking. But on the global landscape, mobile payments have a long way to go in India. According to the Master Card Mobile Payments Readiness Index (MPRI), India ranked 21st among 34 countries with the score of 31.4 on a scale of 100. The index is a data-driven survey of the global mobile payments landscape. It relies on an analysis of 34 countries and their readiness to use three types of mobile payments: person to person, mobile e-commerce and mobile payments at the point of sale (POS).

A Study by **Ashta (2014)**[3] examined how mobile banking has become an essential tool of financial inclusion. Mobile banking is most spoken factor in the area of developments in the banking sector as a whole and is expected by industry experts to replace the credit/debit card system in future. It was also suggested that reach of banks unbanked through treating Mobile banking as a platform as appropriate tool for India's financial inclusion plan. Age has significant impact on agreement to boost up of security risk solutions.

A Study by **Sultan, Sahila & Madhu (2014)**[4] conducted to know the customers perception towards risks mobile banking in selected public, private and foreign banks on the basis of judgment sampling. Population is based on the Banks which provide Mobile banking facility to customers from Delhi and NCR. To find out the patterns of relationship that exist between data-groups, statistical tools used for this purpose are Standard Deviation, Regression Analysis, t-test, Z test. The results show that age has a significant impact on agreement on boost up of security risk solutions. There is a significant difference in the average agreement on boost up of security risk solutions, performance/service quality risk solutions, technological risk solutions and financial risk solutions in mobile banking of unmarried and married respondents. However, unmarried respondents consider security risk solutions, performance/service quality risk solutions, technological risk solutions and financial risk solutions most important than married respondents to boost up the mobile banking.

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[3] Ashta,(2010). "Evolution of Mobile banking Regulations". http://www.arraydev.com/commerce/JIBC/0306-04.htm accessed on 02-08-2013

[4] Sultan, Sahila & Madhu (2014) "Demographic perception towards mobile banking in India". International Journal of Management, IT and Engineering, 4(7), 251-259.

A Study by **Dr. Shamsher Singh (2014)**[5] stated that Internet technology is regarded as the third wave of revolution after agricultural and industrial revolution. After phone and net banking, technology is heralding the era of mobile banking in India. Mobile services are a very important part of the e-commerce landscape. The growth of Mobile banking is phenomenal compared to previous delivering channels. It took approximately twenty years for ATMs to become popular while online banking took a decade. More so, with India all set to emerge as the second largest mobile subscriber base in the world after China, the telecom operators and banks are raring to use this medium to offer banking services including fund transfers to all sorts of people. Technology plays a vital role in improving the quality of services provided by the banking sector. This study has examined the adoption and impact of mobile banking in on customer of different banks. The population studied here was urban population, which can be considered as representative of banking customers in Delhi.

A Research carried out by **Nitin Vinayaket. Al., (2014)**[6] on recent innovations in the telecommunication had proven to be a boom for the banking sector and its customers: one of these is Mobile Banking, where customers interact with the bank via mobile phones and banks provide them the services like short message services, fund transfers, account details, issue of cheque book etc. Presently almost all the banks in the world have started providing their customers "Mobile Banking" services. The main issue of this study was to understand the factors which contributed to user's intention to use the mobile banking services. The purpose of this review study was to explore the factors that influence the adoption behaviour of mobile banking services by Indian consumers. This study also discussed the various steps that mobile banking providers should take to increase their mobile banking services user's database. The users of banking services on their mobiles were highly satisfied ones, because of several reasons.

Uppal, R.K. (2014)[7] studied the extent of mobile banking in Indian banking industry during 2012-2013. The study concluded that among all e-channels, ATM is the most effective while mobile banking does not hold a strong position in public and old

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[5] Dr. Shamsher Singh (2014) "The Impact and Adoption of Mobile Banking in Delhi" International Research Journal of Business and Management – IRJBM January - 2014 - Volume No – I pp. 19-31.

[6] Nitin Vinayaket. Al. (2014) "Impact of Information Technology on Banks", Mohit Publication.

[7] Uppal R.K. (2014) "m-banking services with special reference to efficiency and effectiveness", IJMR, Vol. 6 Issue 2, pp.156-161

A Study by **Dr. Shamsher Singh (2014)**[5] stated that Internet technology is regarded as the third wave of revolution after agricultural and industrial revolution. After phone and net banking, technology is heralding the era of mobile banking in India. Mobile services are a very important part of the e-commerce landscape. The growth of Mobile banking is phenomenal compared to previous delivering channels. It took approximately twenty years for ATMs to become popular while online banking took a decade. More so, with India all set to emerge as the second largest mobile subscriber base in the world after China, the telecom operators and banks are raring to use this medium to offer banking services including fund transfers to all sorts of people. Technology plays a vital role in improving the quality of services provided by the banking sector. This study has examined the adoption and impact of mobile banking in on customer of different banks. The population studied here was urban population, which can be considered as representative of banking customers in Delhi.

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[5] Dr. Shamsher Singh (2014) "The Impact and Adoption of Mobile Banking in Delhi" International Research Journal of Business and Management – IRJBM January - 2014 - Volume No – I pp. 19-31.

[6] Nitin Vinayaket. Al. (2014) "Impact of Information Technology on Banks", Mohit Publication.

[7] Uppal R.K. (2014) "m-banking services with special reference to efficiency and effectiveness", IJMR, Vol. 6 Issue 2, pp.156-161

private sector but in new private sector banks and foreign banks m-banking is good enough with nearly 50 pc average branches providing m-banking services. M-banking customers are also the highest in e-banks which have positive impact on net profits and business per employee of these banks. Among all, foreign banks are on the top position followed by new private sector banks in providing m-banking services and their efficiency is also much higher as compared to other groups. The study also suggests some strategies to improve m-banking services.

A Study by **Azouzi Dhekra (2014)**[8] aims at checking the current and prompt technological revolution, if any, altering the whole world has crucial impacts on the Tunisian banking sector. On the basis of empirical analysis, the study concludes that panoply of factors is affecting the customers' attitude toward e-banking. For instance; age, gender and educational qualifications seem to be important and they split up the group into electronic banking adopters and traditional banking defenders and so, they have significant influence on the customers' adoption of e-banking. It also shows that despite the presidential incentives and in spite of being fully aware of the e-banking benefits, numerous respondents are still using the conventional banking. Fear of loss because of transactions errors or hackers plays a significant role in alienating Tunisian customers from online banking. Finally, the study highlights the limitations and suggests some research perspectives.

A Study Ganesan R. and Vivekanandan K. (2014)[9] described a secured hybrid architecture model for the internet banking using hyper elliptic curve cryptosystem and MD5. This hybrid model is implemented with the hyper elliptic curve cryptosystem (HECC) and it performs the encryption and decryption processes in an efficient way merely with an 80-bit key size. The various screen shots given in this contribution shows that the hybrid model which encompasses HECC can be considered in the internet banking environment to enrich the privacy and integrity of the sensitive data transmitted between the clients and the application server.

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[8] Azouzi Dhekra (2014) "Technological Revolution in e-banking," Journal of IT, Pakistan, Vol 4 (3) pp.189-201.

[9] Ganesan R. and Vivekanandan K. (2014) "Hybrid Architecture model for the Internet Banking using Hyperelliptic curve Cryptosystem and MD5", Proceedings of International Conference, pp.340-349.

Malviya, S., Sharma, G.(2014)[10] conducted their study on 'Usage Pattern of Mobile Banking Among Public and Private Sector Banks in Indore' they focused on Technology introduced new ways of delivering banking to the customers like ATM, internet banking and Mobile banking. The present research explores the usage pattern of mobile banking among the public and private sector banks in Indore. Using information drawn from the survey of 478 mobile banking users of various public and private sector banks of Indore, during the month of December, 2011 to March, 2012. Percentage analysis and pilchard were used for analysis. The results indicates that getting information like mini-statement, balance inquiry; utility bill payment like telephone bills, mobile top up, electricity bills and funds transfer from one account to other account are the most preferred service by the mobile banking user's in Indore.

At the same time **Jasrai, L. (2013)**[11] stated clearly that Mobile telecom service industry in India enjoyed a high growth rate during the last decade but was now struggling to maintain a sustainable growth rate due to deterioration of key operating metrics, leverages, financial metrics, high operating costs, and disparity of tele-density between rural and urban India. The purpose of this study was to provide a conceptual framework of rural entrepreneurship with the aim to enhance adoption and consumption of mobile telecom services in bottom-of-pyramid markets. On the basis of extensive review of literature and three case studies drawn from Asian telecom firms, viz., Village Phone Program - Bangladesh and Smart Communication Inc. Philippines, and Celtel International - Nigeria, various partners such as mobile telecom operators, microfinance agencies, rural entrepreneurs, local community and regulating bodies have been identified as the major stakeholders in the suggested model.

Abigael Jepleting (2013)[12] in his study of "Effects of Mobile Banking on Customer Satisfaction: a Case of Equity Bank of Eldoret Town" found that the effects of

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[10] Malviya, S., & Sharma, G. (2014). "Exploring Usage Pattern of Mobile Banking Among Public and Private Sector Banks in Indore". Asian Journal of Research in Banking and Finance, 4 (1).

[11] Jasrai, L. (2013) "The Role of Information in Mobile Banking Resistance". International Journal of Bank Marketing, 28(5): 372-388.

[12] Abigael Jepleting (2013) "Effects of Mobile Banking on Customer satisfaction": A Case of Equity Bank, International Journal of Innovative Research in Management ,March, Issue 2, Volume 3.

mobile banking on customer satisfaction with specific interest on Equity bank of Eldoret town. The study adopted a descriptive research design on a sample size of 213 respondents who were selected through stratified and purposive sampling from a target population of 2,130 consisting of employees, bank customers and agents. Data was collected by use of questionnaires and interview schedules and the data analyzed by the aid of Statistical Package of Social Scientists Program (SPSS). The findings were summarized using statistical measures of central tendency and measures of dispersion while data was presented using tables, charts and figures. Based on the study findings, it was concluded that close to all those using mobile banking services were satisfied and indeed it was efficient and reliable. However, a bigger part of that population was not using the services and was doubting the citing security measures and reliability. This shows that as people adopt mobile banking it becomes more useful.

Bhalchandra Goel (2013)[13] emphasized on the relationship between service qualities, perceived value with the customer satisfaction in mobile banking. There are several factors that determine the customer satisfaction of mobile banking in India and they are efficiency, security, cost effectiveness, fulfillment, problem handling and accuracy in results. This study is to analyze the customer response and customer satisfaction of mobile banking through these factors.

Lee, H., Zhang, Y., & Chen, K. L . (2013).[14] the primary purpose of the study is to study the mobile banking strategies used by financial institutions with the secondary purpose to study the willingness of the financial institutions in providing mobile banking. The survey results reported in this article showed that credit unions were more likely to provide mobile banking services, but commercial banks tended to offer more comprehensive mobile service features than credit unions. In addition, large financial institutions tended to provide better security and security descriptions on the customer websites.

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[13] Bhalchandra Goel (2013) "Predicting Young Consumers' take up of Mobile Banking Services". International Journal of Bank Marketing, 410-432.

[14] Lee, H., Zhang, Y., & Chen, K. L . (2013). "Perceived usefulness, perceived ease of use, and user acceptance of information technology". MIS Quarterly, 13(3): 319-40.

Sultan Singh & Sahila Chaudhary (2013) [15] suggest that Mobile banking is emerging as very popular practice for customers but risk to the customers as well as mobile banking service providers is also raising. Various kinds of risks like operational risk, technological risk, legal risk, strategic risk etc., which have become the issue to the experts to suggest the means to mitigate them. Efforts in same direction have been made by the researcher in present study, which reveals that operational risk is major one and needs to be managed properly by developing a business model compatible to changes in system, technique and environment.

A research by **Pepreya B.K. (2013)**[16] suggested that Internet-banking was very useful for prompt payments and provide various facilities to the customers for 24 hours, anywhere anytime. But some risks related to security are involved still every customer wants a number of facilities anywhere anytime. So Internet-banking should be cheap, best affordable and secure from the present risks.

Rao N.V.M., Singh P. and Maheshwari N. (2013)[17] study e-Business models and real-life experiments that have been circling around the e-business models in some selected banks chosen, from public sector and private sector banks. The study concludes that most of the banks offering Internet banking facility in India has high overall scores indicating high quality of their websites at all the functional and interactivity levels.

Krishnamoorthy, V. and R. Srinivasan (2013)[18] threw light on customer perception on internet banking which serves as a tool for CRM. Data was collected from 154 respondents who were exposed to Internet Banking. This study clearly indicated that banks were finding difficulty in retaining their existing customers, for which either they needed to come up with innovating, customized products or they need to develop trust with their customers and maintain the relation with them.

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[15] Singh, S., & Chaudhary, S.(2013). "Management of risk in mobile banking .Editorial Advisory Committee". CPJ Global Review Vol. V No. 1, pp.120-129.

[16] Pepreya B.K. (2013). "A Study on Internet Banking and its Dimensions of Quality Services", Published in Indian Training Journal of Management, Indian journals.com Vol 2 Issue 4, pp.123-130

[17] Rao N.V.M., Singh P. and Maheshwari N. (2013) "e-Business Models on Internet Banking Facility", Published in Management Review, vol. 9 Issue 6, pp,91-98

[18] Krishnamoorthy, V. and r. Srinivasan (2013). "Internet Banking as a Tool for Customer Relationship Management-A Study on Customer Perspective". Indian Journal of Research, Volume 2, issue 2, pp.187-190

Singh, M., & Behl, A. (2013)[19] studied on the growth of using mobile phone as a tool for financial inclusion and also increasing substantially. It has proved to be a win-win situation for both banks and telecom companies in terms of reaching out to customers and increasing their revenue base respectively. On a parallel track it has been observed that acceptation and adoption of mobile as a channel has been an issue in rural areas. Considering this grey area, this study has developed the model called Interpretive Structural Modeling (ISM) may prove to be an approach which drives the officials to study various aspects and interconnections of issues related to this problem. The model would give a better and a statistical angle to primary studies which have been done in this area.

According to the study by **Adewoye, J. (2013)**[20] perceived value is a subjective concept that differs among bank customers. In this literature emphasis little bit on what constitutes the value of mobile banking system. The aim of this study is to examine factors affecting the value held by bank customers toward the use of mobile banking services. This study may enable banks to develop a marketing strategic plan based on perceived value from the customer's point of view.

According to **Kumar, S. (2013)**[21] what's holding us back from using mobile banking? The top five banks in India based on the mobile banking transactions during April-December 2012 provided by RBI are, SBI, ICICI bank, Axis bank, City bank & HDFC bank. According to Deloitte Assoc study 67% of overall banking transactions still happen through cash. This study stated that mobile banking is used for enquiries such as balance status, new cheque book issue, mobile top-ups, tickets bookings (movies/air/bus), direst to home recharge are some of rapid growing transactions in mobile banking.

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[19] Singh, M., & Behl, A. (2013) "The Impact and Adoption of Mobile Banking in Delhi". IRJBM - (www.irjbm.org) January - 2014 - Volume No – I, pp 69-78.

[20] Adewoye, J. (2013) "Customer's perceived value to use mobile banking services". In International Conference on Management, Behavioral Sciences and Economics Issues (ICMBSE 2012), Penang. Malaysia (pp. 178-182).

[21] Kumar, S. (2013) "what's holding us back from using mobile banking"? Live Mint and Wall Street Journal.

A research study by **Chopra V.K. (2013)**[22] highlights the importance of IT and business re-engineering in achieving the objectives of banks. The study concludes that PSBs and old private sector banks are slow in imbibing technology in their operations, whereas new private sector banks and foreign banks are early adopters of the technology and increasing the competition. The paper emphasizes that IT along with the business process re-engineering can provide ideal technology environment catering to the stated business objectives. The major objective of this research is to identify the key factors which have a dominating effect on the consumers' minds while making a purchase of Smartphone.

According to **Kiran , N. (2013)**[23] assess, awareness and perceptions of mobile phone users on mobile banking services, the willingness of mobile phone users on utility of mobile banking services, the mobile phone users' perceived movement of mobile banking services/ activities, the movement styles or decision making styles of mobile phone users in respect of mobile banking services/activities and the relationship between demographic variables and use or adoption of mobile banking services.

Ashish and Anand (2012)[24] examines how mobile banking has become an essential tool of financial inclusion. Mobile banking is most spoken factor in the area of developments in the banking sector as a whole and is expected by industry experts to replace the credit/debit card system in future. It was also suggested that reach of banks unbanked through treating Mobile banking as a platform as appropriate tool for India's financial inclusion plan. Age has significant impact on agreement on boost up of security risk solutions.

Ketkar et.al (2012)[25] in their study brought out the factors such as facility to get quick updates, time and cost saving, reach to telecom distribution, and need for telecom to improve customer retention, as the key drivers by using Interpretive

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[22] Chopra V.K. (2013) Business Reengineering Process in Selected Banks to facilitate Online Services, Indian Journal of Management, Vol.9, Issue 5, pp.234-241.

[23] Kiran , N. (2013) Toward an understanding of the behavioral intention to use mobile banking. Computers in Human Behavior, 873–891.

[24] Ashish and Anand (2012)[24] Consumer acceptance of online banking; an extension of the technology acceptance model. Internet Research, 14(3), 224-235.

[25] Ketkar et.al (2012) "Technology in Banking Sector: Issues and Challenges", Vinimay, Vol. XXVII, No. 4, pp.56-61.

structural modeling (ISM) and taken samples from India. In these circumstances, on attempt is made to examine these factors/variables that determine mobile banking usage or non-usage among mobile phone user.

As explained by **Chhaya, L. K. (2012)** [26] telecom services signify the social and economic development of a nation. The telecommunications sector is one of the prime sectors required for the transformation and development of a nation. The Indian telecommunications sector has undergone a major process of evolution and progression. This study focuses on the issues related to energy, environment, spectrum as well as remedies to overcome the challenges. Use of renewable energy resources, effective andtransparent spectrum management and one unified standard with convergence of different technologies can be future prospects for the betterment of service providers as well as subscribers.

S. Samudra and Phadtare (2012) [27] used the UTUAT model to investigate the adoption of mobile banking services and findings suggests that mobile banking services should be promoted to middle level managers whose salaries are in the range of 1-6 lacs and the age group is 25-30 as this is the most active age groups of 3G mobile. This study found out that perceived cost is also an important factor and has negative relation with the intention to adopt mobile banking services; therefore, this study suggests that the creative promotional and pricing strategies, including cost reduction should be implemented to attract more price-conscious customers. Singh, Srivastava, and Srivastav (2010), also argued that the financial cost incurred has a negative effect on the intention to use mobile banking.

The purpose of the study given by **Kai Wang & Chien-Liang Lin, (2012)**[28] was to understand the determinants that influence mobile phone subscriber's intentions to use MVAS. Their study aims to investigate the influences of perceived playfulness and information systems (IS) quality on mobile phone subscribers' intentions to use MVASs. For the same an online survey involving 304 subjects was conducted. The

[26] Chhaya, L. K. (2012) "An investigation of consumer acceptance of M-banking". International Journal of Bank Marketing, 28(7), pp.321-329.

[27] S.Samudra and Phadtare (2012) "The New World of Banking: A Paradigm shift", Journal of Management Research, Vol.3,pp 201-210.

[28] Kai Wang & Chien-Liang Lin, (2012) "The effect of customers' mobile experience and technical support on the intention to use mobile banking". Cyber Psychology and Behaviour, 12, 539-543.

results confirmed that information quality, system quality, and service quality serve as important antecedents of perceived ease of use and usefulness among mobile phone subscribers. Additionally, the authors also found that the perceived playfulness of MVASs mediates the influence of perceived ease of use on intentions of mobile phone subscribers to adopt the services. The comparison between experienced and inexperienced users also suggests that inexperienced subscribers are attracted to MVASs that satisfy their needs for information or play, whereas experienced subscribers tend to take into account system and service qualities.

The purpose of the study given by **Ling Zhao,YaobinLu,Long Zhang ,Patrick Y.K. Chau (2012)**[29] was to explore the effects of service quality and justice on customer satisfaction, which, in turn, affects continuance intention of mobile services. Service quality, justice and customer satisfaction were measured by multiple dimensions. A research model was developed based on this multidimensional approach and was empirically examined with data collected from about one thousand users of mobile value-added services in China. Results show that all three dimensions of service quality (interaction quality, environment quality and outcome quality) have significant and positive effects on cumulative satisfaction while only one dimension of service quality (interaction quality) has a significant and positive effect on transaction-specific satisfaction. Besides procedural justice, the other two dimensions of justice (distributive justice and interactional justice) significantly influence both transaction-specificsatisfaction and cumulative satisfaction. Furthermore, both types of customer satisfaction have significant and positive effects on continuance intention. Implications for research and practice are discussed.

Yung-Shen Yen (2012),[30] in his study identified the perceived values in mobile phone services, and further explore the relationships among perceived value, customer satisfaction, and customer loyalty. The findings of his study reveals that perceived values, including utilitarian value, social value, and hedonic value, positively influence customer loyalty, and the mediation of customer satisfaction is also significant. The contributions of his study were two-fold. The first is to recognize the importance of utilitarian value, social value, and hedonic value for customer loyalty in

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[29] Ling Zhao et al., (2012) "An examination of the determinants of customer loyalty in mobile commerce contexts, Information and Management", Vol. 43 No. 3, pp. 271-282

[30] **Yung-Shen Yen (2012)** "The Conceptualization and Measurement of M-Commerce user satisfaction", Computers in Human Behaviour, Vol. 23 No. 1, pp. 381-398.

mobile phone services. The second is to offer insights for mobile marketers to improve perceived value for customers and enhance their satisfaction levels, helping with customer retention.

MohdShoki. Bin Md.Ariff* HiewSok Fen NorhayatiZakuan ,NawawiIshak, Khalid Ismail (2012)[31] examined the relationship between customers' perceived values, satisfaction and loyalty amongst users of mobile phones. The measurement of customers' perceived economic, emotional and social values and the eight items of customer loyalty were based on the work of Lim. Customer satisfaction was measured using three modified items based on the Lee's study. A total of 270 sets of questionnaires were distributed randomly to users of a mobile phone service provider in Johor Bahru, Malaysia. The findings revealed that customers' perceived high emotional value towards the mobile phone. Economic and social values were in the moderate level. The high and moderate positive correlations were found between customers' perceived emotional value and economic value with customer satisfaction. Customers' perceived emotional value of the mobile phone had the strongest impact on customer satisfaction. The findings provide usable model for mobile phone service providers to enhance customers' perceived values of their services that contribute to high customer satisfaction and loyalty.

According to **Alsheikh, L., & Bojei, J. (2012)**[32] **p**erceived value is a subjective concept that differs among bank customers. The aim of this paper is to examine factors affecting the value held by bank customers toward the use of mobile banking services. benefit and sacrifice factors model assuming that it will help in better understanding of mobile banking usage based on perception value using benefits factors (performance expectancy and effort expectancy) in conjunction with sacrifice factors (cost and risk). Performance and effect expectancy has positive effect on perceived value in using mobile banking services whereas cost and risk has negative effect on - highlighted the enable banks to develop a marketing strategic plan based on perceived value from the customer's point of view. This study has developed a scale to facilitate an empirical study to measure the service quality offered by mobile banking services. The present study has made an attempt to develop a scale for

[31] Mohd Shoki. Et al., (2012) "Relationship between customer's perceived values, satisfaction and loyalty of mobile phone users", Vol.6 (3) 21-32

[32] Alsheikh, L., & Bojei, J. (2012). "Factors Influencing Banks' Implementation and Consumers' Acceptance of E-Banking of Selected Commercial Banks in Calabar, Cross River State, Nigeria.

measuring the quality of mobile banking services. Implications of the findings and potential areas of research are also discussed.

Kamini, Sandip and Nirmal (2011)[33] examined the awareness and perceptions of Customers about Mobile Banking to find out awareness and willingness to use mobile banking and to study the change pattern of customer's interaction with banks. it was found that that if a bank can address the security concerns of customers, it may have a positive effect on the usage of mobile banking.

Aheleroff, S. (2011)[34] in his study discusses how to cluster mobile customers based on their call detail records and analyse their consumer behaviours. In order to improve mobile operator's competitiveness and customer value, several data mining technologies are used. One of the most important data mining technologies is customer clustering and segmentation. The study shows that the targeting practice has been proven manageable and effective for mobile telecommunications industry. Most telecommunications carriers cluster their mobile customers by billing system data.

Abdoul Reza Beiginia, Ali Soleimani Besheli, Morteza Ahmadi, Mahmud Esfandiari Soluklu (2011)[35] conducted a study with the aim of identifying the type of customers' attitudes toward mobile banking and factors affecting their attitudes to behavior using the extended theory of the planned behavior model. In most previous researches, attitude, subjective norm and perceived behavioral control are recognized as determinants of behavioral intention and technology adoption. The results of statistical analysis have revealed that adding factors related to the quality of the network into the basic model, significantly increases the determination power of "attitudes to behavior" construct from 0. 23 (in the basic model) to 0.57 (in the developed model) and also increase the determination power of "behavioral intention" construct from 0.56 to 0.64. So the results have shown that the extended theory of the

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[33] Kamini Shah, Sandip Bhatt and Nirmal Jain (March, 2011), "Awareness and perceptions of Customers about Mobile Banking", The Indian Journal of Commerce Association, ISSN 0019-512X,Volume 64, number 1, Jan-Mar 2011,pp 13-26.

[34] Aheleroff, S. (2011). "An Assessment on Service Quality in the Mauritian Banking Sector". International Research Symposium in Service Management, pp: 1-16.

[35] Abdoul Reza Beiginia, Ali Soleimani Besheli, Morteza Ahmadi, Mahmoud Esfandiari Soluklu (2011) "Examine the Customers' Attitude to Mobile Banking Based on Extended Theory of Planned Behavior", International Bulletin of Business Administration, ISSN: 1451-243X Issue 10, Department of Management, Faculty of Humanities, Shahed University, Tehran - IRAN

planned behavior model compared with the basic model has the more power to predict customers' behavioral intention regarding internet banking.

According to **Prerna Sharma Bamoriya & Preeti Singh (2011)**[36] mobile banking is a revolution that is driven by the world's one of the fastest growing sectors – mobile communication technology. Like in any emerging technology, there exist barriers to the adoption of mobile banking services. This study explores the issues in mobile banking perceived critical for adoption by both mobile banking users as well as non-users. The study identified certain issues pertaining to banks, mobile handsets and telecom operator's viz. mobile handset operability, security/privacy, standardization of services, customization, Downloading & installing application software and Telecom services quality. For this a descriptive design was adopted to empirically explore the selected issues. Study suggests that from consumers' perspective mobile handset operability, security/privacy and standardization of services are the critical issues. Although the research has its limitations, the implications of the results provide practical recommendations to the all concerned parties.

Rashad Yazdanifard, Mohamed Sayed & Abdelgadir Elkhabir (2011)[37] discussed how m-commerce conducts transactions of the mobile device through Internet and how these technologies are developed throughout the years. The study has also judged the security and privacy levels when dealing with mobile commerce and what kind of issues are encountered when using mobile commerce systems. This study has also evaluated the solutions on how m-commerce issues are avoided and how they are tackled by the technology evolution.

Muhammad Asif Khan (2010)[38] in his study entitled as, "An Empirical Study of Automated Teller Machine Service Quality and Customer Satisfaction in Pakistani Banks" investigate significant dimension of ATM (automated teller machine) service

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[36] Prerna Sharma Bamoriya & Preeti Singh (2011) "Issues & Challenges in Mobile Banking In India: A Customers' Perspective", Management Review Vol. 3 91) pp.58-6.

[37] Rashad Yazdanifard, Mohamed Sayed Abdelgadir Elkhabir (2011)' "Mobile Commerce and Related Mobile Security Issues", Deakin University, Melbourne, Australia/International Journal of Mobile Communications 2003 – Vol.1,No.3,pp-273-288/2003.

[38] Muhammad Asif Khan (2010) "An empirical study of automated teller machine service quality and customer satisfaction in Pakistani banks"- European journal of social sciences, Vol. 13, November. PP.320-329.

quality and its effect on customer satisfaction. Questionnaire was used to collect the data from a convenient sample of 500 customers of multinational and national banks. The results indicate that convenience, efficient operation, security and privacy, reliability and responsiveness are significant dimensions of ATM service quality and that ATM service quality positively and significantly contributes towards customer satisfaction.

Safeena Rehmath (2010)[39] in her research paper determined the consumers' perspective on internet banking adoption though customer acceptance is a key driver determining the rate of change in the financial sector. This study aims at examining the impact of perceived usefulness, perceived ease of use, consumer awareness on internet banking and perceived risk on the acceptance of internet banking by the consumers. The result of this study concludes that majority of customers are accepting online banking because of many favorable factors. Analysis concluded that usefulness, ease of use of the system awareness about online banking and risks related to it are main perusing factors to accept online banking system. These factors have a strong and positive effect on customers to accept online banking system.

H.EMari & S. Iranzadeh (2010)[40] in the study entitled as, "Determining the Dimension of Service Quality in Banking Industry: Examining the Gronroos's Model in Iran", was to determine the dimensions of service quality in the banking industry of Iran. The study empirically examines the European perspective (i.e. Gronroos's model) suggesting that service quality consists of three dimensions, technical, functional and image. This research is an applied research and the results of the study showed that in case of a banking service the overall service quality is influenced more by a consumer's perception of technical quality than functional quality.

Garrity Jim (2010)[41] discussed the application and benefit of automated teller machine (ATM) locators in banking sector. these smart phones applications enables customers to conveniently find the surcharge –free, linked ATM network that the local banks belong to as well as helping banks in terms of comprehensive mobile banking services.

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[39] Safeena Rehmath (2010) "Customer perspective on E-banking value: Case Study on internet banking", Journal of Internet banking and Commerce, volume 15, No.1 pp.2.

[40] H. Emari & S. Iranzadeh (2010) "Determining the dimension of service quality the banking industry: Examining the Gronroos's model in Iran" The Authors journal compilation, East Azarbaijan, Iran

[41] Garrity Jim (2010) "ATM locators: your lead-in to full mobile /ABA Bank Marketing"; Vol 42 issue 4, p12-18,7p/May.

A study conducted by **Shih Kuang, Hsun Kuang & Feng Lin Binshan (2010)**[42] found that M-banking was a channel through which banks interact with customers via mobile devices. M-banking was an emerging mobile commerce application. It was a challenging task for banks to encourage customers to continue using m-banking services, and attract new customers to the service. This study clarifies the differences in the thinking paths of users of m-banking services, and consumers who have not yet used m-banking services, in terms of their involvement. The study has proved that consumers equipped with more product knowledge tend to pay more attention to the information in relation to product attributes, rather than the peripheral information, which does not consider the advantages and disadvantages of products. These findings can serve as reference for banks in the formulation of different marketing strategies and promotional campaigns targeted at both existing users and consumers who have not adopted m-banking services.

According to **Weber, Rolf H; Darbellay, Aline (2010)** [43] the growth in mobile financial services not only depends on technological advances, but also on consumer confidence in the provided services. Mobile financial services can be divided into mobile banking and mobile payment; therefore, legal certainty must be established as to what supervisory regime applies to the various activities involving banks and non-banks.so, the legal aspects also play a role in the evolution of mobile banking as far as the need to enhance customer trust in the offered services is concerned. Major issues arise in relation to data security and consumer protection.

Deng, ZhaohuaLu, Yaobin. Deng, Shimin and **Zhang, Jinlong2 (2010)**[44] studied on applied technology acceptance model (TAM) and identified other three constructs to examine the factors that influence the adoption of mobile banking in China. The proposed model was empirically evaluated by using survey data collected from 209 users concerning their perceptions of mobile banking. In this article findings indicate

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[42] Shih, Kuang-Hsun et al., (2010) Assessing user experience and usage intentions of m-banking service/International Journal of Mobile Communications, Volume 8, Number 3, 5 May, pp. 257-277(21).

[43] Weber, Rolf H; Darbellay, Aline (2010) "Legal issue in mobile banking"/Journal of Banking Regulation, Volume 11, Number 2, March 2010, pp. 129-145(17)/ Palgrave Macmillan.

[44] Deng, Zhaohua et al.,(2010). "Exploring user adaption of mobile banking :An empirical study in China", International Journal of Information Technology and Management, Volume 9, Number 3, 14 January 2010 , pp. 289-301(13).

that TAM can predict consumer intention to use mobile banking. Specifically, trust-based construct, perceived credibility, has significant effect on user's attitude toward mobile banking.

As per **Marion Mbogo (2010)**[45] micro-business enterprises in the developing world are increasingly deploying the use of mobile payments to enhance the quality of their services and increase growth. The pace of transformation in the micro business sector has speeded up with more micro businesses realizing the potential of using the mobile payments in their service delivery. However, there are only a handful of studies on the application of digital technology for success and growth on micro business. This study aims to investigate the success factors attributable to the use of mobile payments by micro-business operators. The study is based on a survey conducted through administration of questionnaires. The data was collected from a sample of 409 micro business entrepreneurs in Nairobi, Kenya. The study applies the Theory of Technology Acceptance Model (TAM) which was extended to include other factors to help us predict success and growth in micro-businesses. Analyses of the data reveal that convenience of the money transfer technology plus its accessibility, cost, support and security factors are related to behavioral intention to use and actual usage of the mobile payment services by the micro businesses to enhance their success and growth.

Thomas Ogoro et al., (2010) [46] studied to establish the relationship between technology and service quality in the banking industry in Kenya. This paper emphasis on technology-based self-service has greatly changed the way that service firms and consumers interact, 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 research was carried through across-sectional survey design which questioned respondents on e-banking services. The population of

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[45] Marion Mbogo (2010) "The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-Pesa in Kenya".

[46] Thomas Ogoro Ombati, Peterson Obara Magutu, Stephen Onserio Nyamwange: Richard Bitange Nyaoga,(2010) "Technology and Service Quality in the Banking Industry", African Journal of business & management ,vol. 1 (Apr 12 2010) 16 pages ,AIBUMA Publishing, http://www.aibuma.org/journal/index.htm.

study mainly constituted of customers of banks within the Central Business District (CBD), Nairobi. The findings revealed that, secure 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.

Hernan E. Riquelme and Rosa E. Rios (2010)[47] researched for the aim of finding out to factors influencing the adoption of M-Banking between the male and female users of internet banking services in Singapore. The responses collected from the 681 users about intense to use, relative advantage of mobile device, ease of use, risk, social norms and usefulness. This study found that perception risk is negatively associated with intention to adopt mobile phone for banking services. Further, usefulness and social norms are the factors that influence the intention to adopt mobile banking services. Relative advantage of mobile device and ease of use indirectly influence the perception of usefulness. The survey reveals female users electronic banking perceive that ease of use leads to the more usefulness of the mobile device to conduct banking services. Based on the gender variable, ease of use has a stronger influence on female respondents than male, whereas relative advantage has a stronger effect on the perception of usefulness on male respondents.

Termsnguanwong. S (2010) [48] in his empirical research explains the customer's discernment of M-Banking in Thailand through their level of satisfaction. The study focuses on three different parameters like trust in using M-Banking, reasons for non-usage of M-Banking and importance of diverse of M-Banking service. This study reveals that 2/3rd of the M-Banking users and most of them agreed that M-Banking service is more convenient to branch banking because it gives faster transactions and ease of use. Further, this study says that most of the customers in Thailand prefer branch banking rather than mobile banking. Checking account balance is primary financial information by the customers under M-Banking.

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[47] Hernan E. Riquelme and Rosa E. Rios (2010): "The moderating effect of gender in the adoption of mobile banking", Doctoral Thesis Submitted to University of California.

[48] SupathanishTermsnguanwong (2010): "Customers' Discernment of Mobile Banking Business": Northern Region of Thailand – University of London, pp. 1-12

Mohon and Rekha (2009)[49] focus on the mobile and smart-card banking solutions that bridge remote sectors of India's population and the country's banks. It notes that though India has experienced high growth rates, 60 percent of its population has little or no access to formal finance and less than 6 percent of villages have bank branches. It describes the Zero platform. Which allegedly converts mobile phones into bank branches, though its use considers the security of transactions a concern?

Indrani Medhi et al., (2009)[50] tells us that due to the increasing penetration in the mobile phones even poor communities mobile payment schemes could bring formal financial services to the " unbanked" however below poverty line consumers also correlate with formal education so here questions arise that weather electronic access to complex financial services is enough to bridge the gap .In this study they compares non-illiterates and semi-illiterate so result confirm that non-text design are strongly preferred over text-based design so speed is fast and less assistance is required on the spoken dialog system (without text).

According to **Kim, Gimun, Shin, BongSik & Lee, Ho Geun (2009)**[51] mobile banking is an emerging application of mobile commerce that could become an additional revenue source to both banks and telecom service providers. It is a form of service convergence enabled by innovative technologies. The objective of this research is to reveal the mechanisms associated with the initial formation of people's trust in mobile banking and intention to use the service. They represent four types of trust-inducing forces: institutional offering (structural assurances), cognition (perceived benefits), personality (personal propensity) and firm characteristics (firm reputation). The survey data are analyzed using structural equation modeling. The analysis showed that three variables (relative benefits, propensity to trust and structural assurances) had a significant effect on initial trust in mobile banking.

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[49] Mehon/Rekha (2009) "India's Mobile Lifeline" banker/ oct/ p186-188/

[50] Indrani Medhi et a., (2009) "A comparison of mobile money-transfer UIs for non-literate and semi-literate Users"./Proceedings of the 27th international conference on Human factors in computing/Conference on Human Factors in Computing Systems Pages: 1741-1750 SESSION: Mobile applications for developing world Year of Publication: 2009.

[51] Kim, Gimun, Shin, BongSik, Lee & Ho Geun (2009) "Understanding dynamics between initial trust and usage intension of Mobile Banking", Information Systems Journal, Volume 19, Number 3, May 2009 , pp. 283-311(29)

However contrary, the reputation of firm characteristic variable failed to attract people to mobile banking.

T.K.Murugesan (2009)[52] examines what types of electronic banking technologies are open to financial institution in India. It then proceeds to examine how various electronic products might be attractive to potential customers in terms of improved accessibility, affordability, and ease of use. it also focus on the functionality of electronic cards, pricing of electronic solution, the segmentation of different electronic products for different groups. Electronic banking can offers customers an enhanced range of services at a very low cost. ATMs are expensive to own but are much cheaper way of processing withdrawal then over the counter.

Michalis Zarifopoulos, Anastasios, A (2009)[53] highlighted the technical aspects of mobile banking services. This study reveals the consumer preference and problems faced by consumer in using mobile banking services. it also suggest the measures to enhance mobile banking services.

Rasheda Sultana (2009) states the biggest share of mobile payment users will be in the Asia/Pacific region by 2012(Gartner, 2008). In the context of being the most promising ICT market and the largest inbound remittance receiver[2], this region is expected to be the hub of m-banking transactions. The paper starts with an overview of existing models of m-banking and then examines the m-banking regulations in some South Asian countries and of the countries where (e.g. the Philippines, Kenya, South Africa) m-baking/payment system is already in practice or a success. The concerns of financial regulators and policy measures taken so far are discussed in light of the discussions in international forums.

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[52] T.K.Murugesan (2009) "E-Banking and Value Added Services", Prathyusha Institute of Technology and Management/Thiruvallur, Chennai/apr 2009.

[53] Michalis zarifopoulos,Anastasios,A.Economides (2009) "Evaluating mobile banking portals", International Journal of Mobile Communications 2009 Volume 7 ,Issue 1 (January 2009) Pages: 66-90 Year of Publication: 2009 Inderscience Publishers, Departments of Economic Sciences and Information Systems, University of Macedonia, Egnatia 156, Thessaloniki 54006, Greece Switzerland

Priporas,Constantinos-Vasilios,Mylona,Ifigeneia (2008)[54] tells us how different companies can capture young consumers and increase their market share by providing services through SMS (short message service) facilities.

Jahangir. N & Begum. N (2008)[55] focused on the role of influencing factors for adaptation of E-Banking among the electronic banking users of private commercial banks in Bangladesh. They examined the perceived usefulness, perceived ease of use, security and privacy and customer attitude towards E-Banking which are positively customer adaptation.

Laukkanen, Tommi (2007)[56] explores and compares customer value perceptions in internet and mobile banking. The purpose especially is to compare customer perceived value and value creation between internet and mobile bill paying service. This article 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. In this study two factors are considered a qualitative in-depth interviewing and Means-end approach and laddering interviewing technique. The findings suggest that efficiency, convenience and safety are salient in determining the differences in customer value perceptions between internet and mobile banking. The findings of the qualitative study, being more depth than wide in nature, deserve to be quantitatively measured in future studies in order to provide more generalize results. And Means-end approach and laddering interviewing technique was used in order to reveal how different value creating factors are hierarchically structured and related to each other.

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[54] Priporas,et al., (2008) "Mobile services: potentiality of Short Message Service as new business communication tool in attracting consumers". International Journal of Mobile Communications. Vol (3) 20-30.

[55] Nadim Jahangir &Noorjahan Begum (2008): "The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking" African Journal of Business Management, Volume2 , No.1, pp 032-040.

[56] Laukkanen,T.(2007). "Internet vs mobile banking: comparing customer value perceptions". Business Process Management Journal, 13(6), 788-797. Amin, Hanudin/An analysis of credit card usage intension/Information Management & Computer Security/ Volume 15, Number 4, 2007, pp. 260-269(10)/ Emerald Group Publishing Limited .

According to **Amin, Hanudin (2007)** [57] many banks consider mobile-based technologies have improved the banking services through introduction of new banking facilities. One of the latest facilities developed in this area is the "mobile credit card." and the purpose of this study is to examine the factors that determine intention to use mobile credit card among Malaysia bank customers, as their new way in conducting payment transactions. The technology acceptance model (TAM) was used as the base model in order to develop the modified version of TAM to better reflect mobile credit card usage.

Kelvin Chikomo, Ming Ki Chong, Alapanrnab, Andrew Hutchison (2006)[58] discusses some of these security shortfalls, such as security problems with GSM network, SMS/GPRS protocols and security problems with current banks mobile banking solutions. In addition, this study discusses the SMS and GPRS proposed solutions for these problems. The results from these proposed solutions have provided secure and economic communications between the mobile application and the bank servers.

Tiwari. R, et. al (2006)[59] conducted their empirical study regarding assessment of customer acceptance for various M-Banking services and customer's willingness to pay for them in the German cities. The participant customers were in the age group of 18 to 65 years and they gave their perceived preferences and willingness to pay for seventeen different financial services offered in M-Banking. This study reveals that more than half of the customers are not aware of such offers provided by their banks and only 12% of the participants have used mobile financial services. Among them $8/10^{th}$ of the users of M-Banking facilities were male.

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[57] Amin,Hanudin (2007) "Building effective online marketplaces with institution-based trust". In: 23rd International Conference on Information Systems, Barcelona, 667–675.

[58] Kelvin Chikomo (2006) "Security of Mobile Banking /Data Networks Architecture" Group Department of Computer Science University of Cape Town.

[59] RajnishTiwari, Stephen Buse and Cornelius Herstatt (2006): "Mobile Banking As Business Strategy: Impact of Mobile Technologies on Customer Behavior and its Implications for Banks", Research paper presented at Portland International Conference on Management of Engineering and Technology (PICMET) and Istanbul (Turkey)

Tommi Laukkanen et al.,(2005)[60] examines the role of personal values in consumer resistance to mobile banking innovation. A large Internet survey was implemented and 1,151 usable responses among mobile banking non-users collected. Following the theory of innovation resistance five barriers, namely Usage barrier, Value barrier, Risk barrier, Tradition barrier and Image barrier to mobile banking adoption was formed. Cluster analysis was used to group the individuals into four homogenous segments representing different reasons to resist mobile banking. Using One-Way-Analysis of Variance (ANOVA) the groups' differences in values were measured. The results suggest that those customers having low resistance to mobile banking are more self-fulfilling and self-respecting than others, while those having high resistance seem to have higher needs than others for security.

Wan et al. (2005)[61] studied the customers' adoption of banking channels in Hong Kong. They covered four major banking channels namely ATM, Branch banking, Telephone Banking and Internet banking. The study segmented the customers on demographic variables and psychological beliefs about the positive attributes processed by the channels. The psychological factors were ease of use, transaction security, transaction accuracy, speediness, convenience, time utility, social desirability, usefulness, economic benefits and user involvement.

The study conducted by **Boating (2004)**[62] that growing demand for person to person money remittances is paving the way for new remittance options where the confluence of existing banking infrastructure with new products and technologies such as the internet is providing new options for more cost-effective and convenient fund transfers. Trends of money remittances are gradually transferring to mobile based transactions which can be categorized as m-banking.

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[60] Tommi Laukkane et al.,(2005) "How personal values determine consumer resistance to mobile banking?" Department of Business and Management, University of Kuopio.

[61] Wan, W.N., Luk, C.L. and Chow C.W.C., (2005). "Consumers' Adoption of Banking Channels in Hong Kong". International Journal of bank Marketing, 23: 255-272Rebecca T.

[62] Boating (2004) "The mobile commerce value chain: analysis and future developments", International Journal of Information Management 22, 91–108, (2002).

Howcroft .B, Hamilton .R and et.al (2002)[63] conducted a research for the purpose of respondents changing attitudes towards bank delivery channels and determined the important factors in encouraging and discouraging respondents' use of telephone and internet banking. This study reveals that 22.1% of the respondents acquired their financial services through telephone. Lower fees, service quality and save time are the major factors for encouraging adoption of telephone/Internet banking. In addition, this report stated that the younger consumers value the convenience or time saving potential of M-Banking more than older consumers. Younger consumers also regarded the lack of face-to-face contact as less important than older consumers. Furthermore, the survey found that educational qualification is not an important factor in encouraging or discouraging the use of telephone or online banking but security and errors are the important factors for discouraging adoption for telephone/internet banking in UK.

REVIEW OF DOCTORAL THESIS

A thesis by **Mikko Joutsen (2013)**[64] has examined how mobile banking and mobile payments services are going to change the banking sector in Finland, and what role non-bank companies from the IT and telecom industries will play in this process. This thesis provides an understanding of the ongoing changes happening in the Finnish banking sector, the impact of mobile banking and payments services amongst this change as well as the role of IT and telecommunications players in it. These themes are examined through interviews of major Finnish banking and finance institutions as well as international companies in the telecom and IT fields. The contribution of this thesis to the academic literature, does not solely lie on mobile banking and payments, but also on the disruptive effects a revolutionary new technology can have on a traditional and relatively stable market.

The results show that banks have a significant advantage over their IT and telecom rivals in regards to their service offering, financial buffer, and status as trustworthy institutions. The banks' embrace of mobile financial services will change the Finnish

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[63] Barry Howcroft, Robert Hamilton, Paul Hewer, (2002) "Consumer attitude and the usage and adoption of home-based banking in the United Kingdom", International Journal of Bank Marketing, Vol. 20 Issue: 3, pp.111 - 121.

[64] Mikko Joutsen (2013) "Mobile Banking and Mobile Payments: Changing Banking Services in Finland". Dissertation. Lappeenranta University of Technology School of Business. Finance.

banking sector into one, with a light branch network focused on sales power, and a heavy emphasis on new mobile devices providing service power regardless of time and place. In light of the conducted research, this thesis has come to the conclusion that due to mobile banking and mobile payments services, the Finnish banking sector is heavily affected by: new technologies, new mobile devices, new services, new service models, new value chains, and new market participants.

A thesis by **Ashok Bahadur Singh (2013)**[65] discussed the rapid transition and rollover of banks' branches towards core banking solution is yielding the transformation, evolution and integration of different entities to collaborate and integrate the business strategy on the various fronts such as micro finance institutions, postal services, insurance, telecom service providers etc. The study has illustrated mobile money order evolution, present status of India Post money order, analyze the trend and suggest the approaches for increasing the efficiency of India Post money order by using mobile banking as medium to integrate banking sectors with India Post. The proposed mobile money order for India post would enhance the efficiency of present postal money order in terms of number of factors such as business growth, convenience, reduced transaction costs, social and economic developments and many more.

A thesis by **McGregor, B.A (2013)**[66] analyzed how mobile banking technology helps under banked or unbanked populations access more secure financial services and decrease personal financial risk. The Analysis examined three different types of mobile banking transactions: paying a bill, receiving money or sending money. The quantitative analysis within this study analyzes if when controlling for other variables, a low proportion of ATMs or commercial bank branches is correlated with high usage of mobile technology for banking. The results indicate that consumers may be increasingly turning to mobile phones to meet their personal financial needs when traditional banking services are not generally available. The results also highlight the

[65] Ashok Bahadur Singh (2013) "Designing Mobile Money Order: Integrating India post to banking systems through mobile banking". Thesis. SYMBIOSIS INTERNATIONAL UNIVERSITY.

[66] McGregor, B.A (2013) "Mobile banking: Increasing Access to Financial Services". A thesis submitted to the Faculty of the Graduate School of arts and Sciences of Georgetown University in partial fulfillment of the requirements for the Degree of master of Public Policy. Washington, DC, April, 19. 2013.

need for global organizations and governments to increase investment in mobile banking services and the underlying infrastructure necessary to support these services, especially in countries where the number of ATMs and commercial bank branches are low, in order to expand consumers' access to financial services.

A thesis by **Rashmi Sharma (2013)**[67] focuses on the role of banks in the Indian Financial market as they are the biggest purveyors of credit and attract most of the savings from the population. Banking is necessary for the economic development as it holds the key that serves as a barometer for the economic health of a country. The e-banking offers huge opportunities in every sphere of business as the competitive advantage, member/client retention, increased revenues and reduced costs.

A thesis by **Bindiya Tater (2011)**[68] explores the perception of Indian customers towards the use of technologies with respect to such factors as convenience, privacy, security, ease of use, real time accessibility and accurate record of varied transaction that enable customer's adoption of banking technology. Other factors such as slow transfer speed, technical failure, frauds and unawareness among customers that make hindrance in adoption are also tested. The results show that demographic variables such as gender, age qualification and income play a positive role in adoption of banking technology. All the banks are using information technology as a strategic vehicle to stay competitive against other players. The study also shows that banking technology helps in increasing customer satisfaction, customer loyalty, improvised growth and performance of the banks.

A thesis by **Gareth James Peevers (2010)**[69] focused on the financial services which are investing considerable sums of money into mobile banking services and the uptake by customers has been high. The cost to benefit ratio of mobile banking is highly satisfactory when the costs of developing and managing the channel are

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[67] Rashmi Sharma (2013) "A Comparative Study of E-banking in Public and private Sector Banks (With Special reference to SBI and HDFC Bank)". Submitted for the Award of the Degree of Doctor of Philosophy in the Faculty of Commerce and Management. IIS University, Jaipur.

[68] Bindiya Tater (2011) "Customer Adoption of Banking Technology in Private Banks of India". Thesis. Pacific University, Udaipur.

[69] Gareth James Peevers (2010) "on Usability Design of Short Message Service (SMS) Mobile Phone Banking", Ph.D Thesis. The University of Edinburgh.

considered. Many of the advantages of internet banking are shared by mobile banking e.g. control and time saving. Mobile banking also offers higher convenience with the ability to carry out banking whenever and wherever you are. It is hoped that mobile banking is as successful as internet banking.

A thesis by **Kirui, O.K. (2010)**[70] carried out an empirical research with the aim of assessing the awareness of M-Banking services of the small farmers (191 Male &188 Female) and their use of M-Banking services in three Districts of Kenya. This study found that 96.3% of the farmers were aware of mobile phone–based money transfer services (M-Banking). In addition, this study reported that awareness of the mobile-based money transfer service differs among the three districts of Kenya. There is radio plays a dominant role in creating an awareness among the smallholder farmers because more than half of the farmers learned about the mobile phone –based money transfer service through this media. Furthermore, only 52% of the farmers have used the M-Banking services. Finally, it is concluded that awareness level of M-Banking is high among the farmers and their usage level is much lower.

A thesis by **Suoranta .M (2003)**[71] explained in her descriptive research approach tried to determine the dimensions regarding adoption of M-Banking. The M-Banking technology adoption model explains that age and education among the several demographic variables have an influence on the adoption of mobile banking. Further, relative advantage, compatibility, communication and trial ability are influencing factors on the adoption of M-Banking. But, complexity, security and trust worthiness of m-services are not major obstacles for adopting M-Banking.

Research Gap

The above reviews agreed that transformation is taking place regarding self-service technology-enabled financial transaction between bankers and customers in various countries. M-Banking is playing a vital role in the 21st century throughout the globe. Based on the above earlier studies the following gaps are found by the researcher:

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[70] Kirui, O.K. (2010): "Awareness and use of m-banking services in agriculture: The case of smallholder farmers in Kenya ", A Dissertation. South Africa, University (September).

[71] Mary Suoranto (2003): "Adoption of Mobile Banking In Finland", Doctoral Thesis Submitted to University of JyvaSkyla.

1) No author focused on the growth of M-Banking technology-enabled financial information system in India.

2) Large number of previous studies included in the review of literatures focusing on adoption of mobile banking / Information Technology aspects from customers' view. Therefore, this study moves towards adoption of M-Banking by the bankers (employees) view.

3) Indian author (Uppal R.K, 2009) suggests that future area of research is needed to the Indian context regarding general or personal factor-wise use of e-channels and its extent of acceptance. In addition, research gap also finds out earlier works consisting acceptance level of mobile banking among the bank customers because acceptance level (High, Medium and Low) is also motivated to usage of M-Banking.

4) Finally, place of research is the primary gap of the every research work because people in different countries have different lifestyles in the different aspects. On the other hand, very few numbers of studies focus on Indian context (Uppal R.K 2009 & 2010, Indrani et.all 2009 and Tiwari, R., Bure, S & et.al 2006). But none of them focus on the effectiveness of mobile banking services based on the segment of M-Banking among the customers and their reasons for accepting the mobile banking services such as: safe in transactions, reliability, fast and speedy services, transparency etc.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

The present market scenario of banking industry shows that, all public and private sector banks are updating themselves according to the technological changes and providing convenient banking to increase the customer base. Hence, there is also a need to identify the customer satisfaction of public and private sector banks and problems faced by them. It will help to adopt appropriate policy service designing and service improvements to increase customer satisfaction. Perceived service quality and customer satisfactions are major areas in the business and marketing research literature (Zekiri, J., 2011).).[1] It is defined collectively as the ultimate goal of a firm in customer retention or customer loyalty (Rexha, N., et al., 2003).[2] There are number of research work conducted under the various branches of business studies. Most of these works stressed the overall customer satisfaction in the banking industry rather than transaction specific satisfaction. Measurement of transaction-specific requires assessing each aspect of the banking services. It refers to a customer's evaluation of an array of different attributes of the service after having an experience with it.

Several researches have been conducted in the past which define the various components of quality service metrics (i.e. customer satisfaction, customer loyalty, profits, consumer behavior and attitude towards service providers). In order to fill the research gap, author has tried to explain the banking performance in terms of retaining the customers by offering diverse services. In order to identify customer, job and employee satisfaction various researches has been made in traditional banking services. Studies were conducted on mobile banking under the faculty of commerce and management but so far only few studies have been published in central India. Recent changes in banking norms have helped banks to offer new and attractive services (e-banking, mobile banking, money transfer and many more) through e-

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[1] Zekiri, J. (2011). "Applying SERVQUAL Model and Factor Analysis in Assessing Customer Satisfaction with Service Quality: The Case of Mobile Telecommunications in Macedonia". International Bulletin of Business Administration,11, pp. 86- 101.

[2] Rexha, N., et al.,(2003). "The Impact of the Relational Plan on Adoption of Electronic Banking". Journal of Services Marketing, 17 (1), pp. 53-67.

channels also known as alternative banking channels. Author realized that very few efforts were being made in order to identify the factors which are responsible for determining the mobile banking services and how these factors impact customer satisfaction and therefore, author took the step to study the same and hence the researcher has explored such dimensions which are very important for the users of mobile banking.

Study conducted by **Mikko Joutsen (2013)**[3] has examined how mobile banking and mobile payments services will change the banking sector. This thesis provides an understanding of the ongoing changes happening in the Finnish banking sector, the impact of mobile banking and payments services amongst this change as well as the role of IT and telecommunications players in it. In the same way **Ashok Bahadur Singh (2013)**[4] discussed in his study the rapid transition and rollover of banks' branches towards core banking solution is yielding the transformation, evolution and integration of different entities to collaborate and integrate the business strategy on the various fronts such as micro finance institutions, postal services, insurance, telecom service providers etc. A Thesis by **Bindiya Tater (2011)**[5] also explores the perception of Indian customers towards the use of technologies with respect to such factors as convenience, privacy, security, ease of use, real time accessibility and accurate record of varied transaction that enable customer's adoption of banking technology. Other factors such as slow transfer speed, technical failure, frauds and unawareness among customers that make hindrance in adoption are also tested.

Likewise a Thesis by **Gareth James Peevers** (2010)[6] focused on the financial services which are investing considerable sums of money into mobile banking services and the uptake by customers has been high. **Suoranta .M (2003)**[7] in her descriptive research approach tried to determine the dimensions regarding adoption of

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[3] Mikko Joutsen (2013) "Mobile Banking and Mobile Payments: Changing Banking Services in Finland". Dissertation. Lappeenranta University of Technology School of Business. Finance.

[4] Ashok Bahadur Singh (2013) "Designing Mobile Money Order: Integrating India post to banking systems through mobile banking". Thesis. Symbiosis international university.

[5] Bindiya Tater (2011) "Customer Adoption of Banking Technology in Private Banks of India". Thesis. Pacific University, Udaipur.

[6] Gareth James Peevers (2010) "on Usability Design of Short Message Service (SMS) Mobile Phone Banking", Ph.D Thesis. The University of Edinburgh.

[7] Mary Suoranto (2003): "Adoption of Mobile Banking In Finland", Doctoral Thesis Submitted to University of JyvaSkyla.

M-Banking. The M-Banking technology adoption model explains that age and education among the several demographic variables have an influence on the adoption of mobile banking. Further, relative advantage, compatibility, communication and trial ability are influencing factors on the adoption of M-Banking. But, complexity, security and trust worthiness of m-services are not major obstacles for adopting M-Banking.

The aim of this study is to examine factors affecting the value held by bank customers toward the use of mobile banking services. In a lieu with all these studies the present study suggests that Assurance & Security, Efficiency, Responsiveness, Convenience and Reliability dimensions are predictors for mobile banking service quality of public and private sector banks of Madhya Pradesh. The study further confirms that 'Assurance & Security is measured through feeling of safety, trust and security in transactions. 'Efficiency & Convenience' is measured through simple and easy to access, clear instructions, quickness in performing transactions, time saving, easy availability of banking information. Similarly, 'Responsiveness' is measured through promptness in response, quick and effective rectification, problem solving attitude of customer care etc. Similarly, 'Reliability' is measured through accurate transaction processing and record keeping, satisfaction of customer needs etc.

The study also confirms association between effectiveness of mobile banking services and customer satisfaction and trust of the customers in the mobile banking services.

The findings of the study suggested that there are some similarities and some differences regarding the extent to which the four dimensions predict overall mobile banking service qualities which ultimately affect customer satisfaction of mobile banking users of public and private banks of Madhya Pradesh.

4.2 STATEMENT OF THE PROBLEM

With the advancement of science and technology, the modern market has been converted into a buyer's market also known as customer oriented market. Banking industry is one of the most important among service industries, which have special importance in the economy.

- Advancement in the technology and concomitant developments in communication channels has resulted in innovation of alternative delivery channels.
- In the traditional banking, customer visit the branches to carryout banking transaction, but now they have the choice of alternative delivery channels i.e.

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- In the traditional banking, customer visit the branches to carryout banking transaction, but now they have the choice of alternative delivery channels i.e.

ATMs, Credit cards, Debit cards, internet banking, mobile banking, core banking etc.

- Customers are now looking for multiple delivery channels which are flexible as well as they offer convenient working hours. As e-banking channels enhance good performance of mobile banking services and increases the level of customer satisfaction by providing anytime, anywhere and multi way banking services (varieties of services, convenience, speed, efficiency, security and cost effectiveness) therefore, almost all Indian commercial banks started providing services through the various alternative e-channels also known as ***'Alternative banking.'***

The IT experts and banking experts argued that, use of ICT in banking will increase overall quality of the banking services. Although, no one has conducted a field work which examines the impact of the service quality of mobile banking on customer satisfaction.

Moreover, implementation of ICT in banking industry improves quality of services and improved service quality in the banking business and hence it is expected to influence the customer satisfaction. The customers are going to use a variety of service dimensions or attributes that are salient to the customer to infer in the service quality and perceived value (Agathee, U. S., 2012)[8]. However, technology based alternative banking services differ from the common service and traditional banking services. Therefore, this research attempts to examine the effect of mobile banking services on customer satisfaction.

The aim of this study is to determine the underlying factors that influence customers' satisfaction with mobile banking Services in M.P.

- To find out the different types of mobile banking services offered by banks to mobile banking users.
- To measure the extent of usage of mobile banking service in M.P. region.
- To evaluate the effectiveness of the services provided by the banks.
- To measure the extent of satisfaction level amongst the customer of mobile banking.
- To suggest appropriate measures and strategies to enhance the use of mobile banking services and its usage in M.P.

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[8]Agathee, U. S. (2012). "An Assessment on Service Quality in the Mauritian Banking Sector". International Research Symposium in Service Management, pp: 1-16.

4.3 IMPORTANCE OF THE STUDY

- The present study offers meaningful insights for policy implications to be proved better for customers' satisfaction through improved mobile banking facilities. The main concern of the study is to provide information that would help the management of the public and privates sector banks to re-design their mobile banking services in order to retain its existing customers and to attract new ones in today's competitive environment.
- This research has practical significance because findings of the research understand the factors affecting customer satisfaction from the mobile banking channels, and comparative level of the customer satisfaction in public and private banks.
- Findings and suggestions of this research can help to design and improve their service and marketing strategies to cope with the challenges of keeping profitable customers in the virtual market place. Question behind this research is whether evaluating impact of mobile banking services on customer satisfaction and relationships between service quality of mobile banking service and customer satisfaction. Several studies have found that firms spend substantial resources to attract new customers as they do keeping existing customer. Several firms have been exerting all their efforts toward achieving customer satisfaction under the basic assumption that satisfaction will lead to loyalty. However, in the recent era almost banks are trying to attract new customers by providing modern looking services and convenient e-service. The researcher has investigated this attitude and concluded some findings.
- For academia, the findings of this research will provide empirical evidence and may add to a new knowledge to the existing literature of business economics and banking for understanding the impact of complex relationship between customer satisfaction and mobile banking services.
- Security is the freedom from danger, risk or doubt. It involves: physical safety, financial security and confidentiality.
- Understanding/knowing the customer involves making the effort to understand customer's needs. It involves: learning the customer's specific requirement, providing individual attention and recognizing the regular customer.

4.4. RESEARCH DESIGN

The research design of the present study is based upon understanding of the paucity of research on this particular topic. This research using descriptive research designs as there were many variables already studied and existed in the phenomena. And descriptive study is one in which information is collected without any manipulation. So the author wants to measure the intensity of the same variables in this study in Indian context which were already studied earlier by different researchers.

Moreover, this research also using exploratory research design as the researcher has proposed to explore important variables which affect the mobile banking services offered by banking sector in Madhya Pradesh by questioning from the bank managers/officials. The author conducted the in-depth interviews of forty bank managers of different banks (Public & Private) before finalizing the questionnaires.

4.5 PILOT TEST STUDY

The present study is based on primary data and the same has been collected through a non-disguised structured questionnaire consisting of questions on Likert Scale, multiple choice and close ended type. A pilot survey of 50 respondents was conducted through questionnaire and it contained 55 questions so as to make in-depth understanding of the variables. All the variables mentioned in the questionnaire, were taken from the past reviews and later on, the questionnaire was converted to easy and understandable language so as to make it understandable to the masses. After analysis of the questionnaire, it was found that no proper response was given for few questions and thus those questions were removed. These questions were about the amount of transactions through mobile, handling the mobile set, cost of the mobile, VAT, cost of transaction, internet expenditure etc. In place of these questions few new questions were added. These wer:

- Mobile banking would make banking more convenient for customer.
- In order to increase security, mobile banking services should be conducted through special software that is downloaded from the mobile operator / bank and not just through a web browser or SMS.
- Mobile banking is reliable enough for transactions.
- Mobile banking is easily to access with speedy.
- It is easy to learn to use the mobile payment system.

Finally 45 questions were incorporated in the questionnaire and 300 respondents were selected from various cities of M.P (Indore, Dewas, Gwalior, Neemach, Jabalpur and

Bhopal) having different demographic characteristics. Initially 345 questionnaires were distributed but in the data cleaning process 45 questionnaires were found inappropriate for the reason that they had incomplete, inconsistent and illegible responses and were excluded from the final analysis, thereby the sample size was finally reduced to 300.

In this study the researcher has explored the variables which contribute in customer satisfaction who are offered mobile banking services such as easy access, speed, security in transactions, safety in funds etc.

4.6 QUALITATIVE AND QUANTITATIVE RESEARCH

In order to understand and explore various attributes of customer satisfaction towards mobile banking Services (customer loyalty, customer ease, convenience, security of funds, safety etc) Daymon & Holloway (2002)[9] suggest employing qualitative research methods. A decision to choose qualitative design was based on the nature of the research purpose and objectives which were fixed previously. Since this study has attempted to investigate what are the attributes of mobile Banking Services and its impact on customer satisfaction qualitative research design is being considered as it provide broad insight to the problem as compared to the quantitative research methods.

Qualitative research method is defined as "any kind of research that produces findings not arrived at, by means of statistical procedures or other means of quantification" (Strauss & Corbin, 1990).[10] The main reasons for choosing this type of research are:

- In this study this qualitative research is related with words (Attributes, Characteristics), as opposed to quantitative research, which focuses more on numbers.
- In certain cases informal decisions were made with the respondents to get in depth knowledge customer satisfaction towards mobile banking services.
- Qualitative research is linked to small-scale studies.
- Qualitative research tends to be less structured than quantitative research. Thus, the research process is more adaptable, flexible, and open to study new variables that may come into sight during the investigation.

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[9] Daymon, C. and Holloway, I. (2002) Qualitative research methods in Public Relations and Marketing Communications London, Routledge

[10] Strauss, A., & Corbin, J. (1990). Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, CA: Sage.

This study was conducted to identify and analyze the reasons why customers' develop their perception towards mobile banking services. As rightly said by Bate (1997)[11] qualitative research is about digging into the life of people every day. It is also that qualitative research produces a quality in a research that no other method gives, and provides a unique way of illustrating and explaining theoretical issues every day.

4.7 RESEARCH APPROACH

Research may be deductive or inductive. Deductive research approach begins with the development of a theory or hypothesis and later a development of a strategy to test it in a context to verify or reject its claims. So it is thinking from general to specific. On the other hand, the approach is inductive where the research begins with an observation of a phenomenon in an environment, then data is collected upon through which a theory is developed and it is generalized.

In this study, we have used applied empirical theories which test the impact of factors influencing customer satisfaction with mobile banking services. Therefore, the study is deductive. Qualitative approach is associated with the nature of services and the items which have been constructed in accordance with the quality of services and the quantitative approach is associated in terms of statistical tools which has helped researcher to measure the variables and come to the final conclusion. On the basis of this approach the hypotheses are tested statistically.

4.8 SAMPLING TECHNIQUE

The sample is selected from a larger group of person which is identified as the population. Sampling techniques offer a range of methods to reduce the quantity of data that needs to be collected by considering only data from a subgroup rather than all possible cases. If data is collected and analyzed from every possible case or group, it is a census. However, it is not necessarily true that a census survey would produce more useful results than a well-planned sample survey. Sampling offers a valid alternative to a census as it would be impractical to survey the full set of cases (the population) because the cost would be too high and enough time is not available and results are needed quickly from gathered data.

For this study random sampling method has been used as the chance of probability of each case being selected from the population is known with the former which makes it possible to estimate statistically the characteristics of the population from the sample. This technique also provides effective coverage at low cost.

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[11] Bate S.P (1997) "Whatever happened to organizational anthropology? A review of the field of organizational ethnography and anthropological Studies" Human Relations, 50(9) pp.1172-1175

4.8.1 UNIVERSE

The population of the study consists of customers who are having account in the bank and who frequently access the mobile banking services. For effective coverage and lower cost, non-probability and convenient sampling technique are being used for selecting the participating respondents. Customers were sub- divided into demographic profile based on Age, Income, Gender, Marital status and occupation etc. Universe also consisted of respondents who belong to service and business class along with people from different profession.

4.8.2 SAMPLE SIZE

Sample Size consisted of 300 customers having banks account. Due to limited financial resources at the researcher's disposal greater sample size could not be permitted. There were individual differences because the information process was related to demographic characteristics (Age, Education, Income Level, Gender, Occupation and Marital Status). Total 300 respondents were selected for this study on the random sampling basis from M.P. region (Mainly Indore, Dewas, Bhopal and Ujjain).

4.9 DATA COLLECTION

The data collection methods used in this research involves the search through both primary and secondary data. According to Malhotra (2005)[12], Primary data have been originated by the researcher for the specific purpose of addressing the problem at hand. Also that obtaining primary data can be expensive and time consuming. Primary data, being the most significant is gathered through self-structured questionnaire based on 5-point Likert Scale. The questionnaire consisted of self-designed 45 questions whose reliability and validity is also being tested.

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[12] Malhotra (2005). "Integrating Knowledge Management technologies in organizational Business processes", Journal of Knowledge Management, vol 9 issue1 pp.245-249.

4.9.1 THE QUESTIONNAIRE FOR THE MOBILE BANKING

Self-structured questionnaire was constructed on 5 point Likert Scale. This questionnaire consisted in all 45 statements related with mobile banking services such as, accessibility, security, safety of funds, convenience, proper allocation of funds, easy to learn etc.

Section B: Demographic Information of Respondents

This section collected demographic details. Respondents were required to fill in information regarding their gender, marital status age, position and income level etc. Then the next part of this section included variables associated with effectiveness of mobile banking services. For testing the hypotheses, Correlation, Regression, ANOVA, Chi Square and Factor Analysis were used.

Self- structured questions were based on various dimensions of mobile Banking Services which influence customer satisfaction such as:

- Quick services
- Easy to transfer money
- Abundant of ATM Booths
- Easy to deposit and withdraw money
- Maintain error free records
- Prompt respond to queries
- Sensitize customers
- 24*7 service
- Security
- Time Saving
- Trust
- Encouragement
- Customer loyalty
- Convenience & Ease

The secondary data for this particular study were collected through marketing journals and other existing reports that were based on the topic. Secondary data helped the researcher to create better comprehension of customer satisfaction and is influenced by different attributes. As a general rule stated by Malhotra (2005),[13] "Examination of available secondary data is a prerequisite to the collection of primary

[13] Malhotra (2005).'Integrating Knowledge Management technologies in organizational Business processes, Journal of Knowledge Management.. Vol 9 issue1 pp.245-249.

data. Start with secondary data. Proceed to primary data only when the secondary data sources have been exhausted or yield managerial returns." Thus this study was also conducted and analyzed through secondary data proceeded with primary data. Close-ended questions were asked to analysis the pre-determined objectives. Closed questions enable subjects to make a quick decision which enhances the enthusiasm and commitment of the subjects. Closed questions also facilitate the quick coding of information for analysis (Sekaran 2003). [14]

4.10 STATISTICAL ANALYSIS OF DATA

The data is coded in excel using Ms-Office package. The coded data was then analyzed using SPSS version 17.0. The data was analyzed using descriptive statistics. Firstly all the questions were subjected to frequency analysis and then item total correlation was used to check whether the scale is measuring any variation or not. Thereafter, the reliability and validity of the scale were done using Cronbach's Co-efficient Alpha.

Once the reliability and validity of the scale and its dimensions was carried out, an attempt to segment respondents was tried using various statistical analyses viz, Factor Analysis, T-test, one way-ANOVA, Correlation and Linear Regression.

- Correlation Analysis (To check the relationship between the dimensions of mobile banking services and customer satisfaction)
- Regression Analysis (To examine the impact of variables of satisfaction with mobile banking services (convenience, ease, security, safety of funds, easy to access, customer loyalty etc.)
- Descriptive Statistics (Demographic profile)
- ANOVA (To check the consistency between two variables)

Statistics is an invaluable tool that provides researchers with various techniques to analyze and interpret data collected from research projects. The use of statistical techniques allows researchers to understand data and to draw conclusions about the

[14] Sekaran, U. (2003). Research method for business: A skill building approach, 4th edition, John Wiley & Sons.

topic being investigated. In order to measure the different variables being investigated researchers assign scores to responses obtained from subjects (Harris 1995).[15]

Analysis of Variance (ANOVA): It is a statistical test that is utilized to determine if differences exist among the means of two or more independent samples, that is "...the means for K samples are not statistically different". Dillon, Madden and Firtle (1994); Churchill (1995); and Zikmund (1995) maintain that it is suitable to use ANOVA when K independent groups are scaled using interval measurement. ANOVA is a bi-variate statistical test which is commonly referred to as 'one way', since there is only one independent variable. ANOVA differs significantly from the t-test since it is able to test for differences in more than two independent groups simultaneously (Zikmund 1995). Using the ANOVA technique allows researchers to determine if different groups within a sample vary with regard to the independent variable being investigated. However, if this variance within the groups is compared with the variance of the groups' means around the grand mean, it is then possible to establish if the means are significantly different. The F-test is a statistical technique that identifies if there is more variability in the scores obtained for one sample group compared to the other sample group (Zikmund 1995).

In this study, the F-test was used to determine if a significant difference existed in the preference of attributes of mobile banking services differing in convenience, eases to access, security, safety of funds, time saving, with regard to banks in M.P. Karl Pearson formulated the Pearson's product moment correlation coefficient. This coefficient is also referred to as 'Pearson r'. The magnitude of 'r' gives an indication of the strength and direction of the relationship that exists between two variables. Pearson 'r' value can only assume values between -1 and +1. According to Harris (1995), "...a value of +1 indicates a perfect positive linear relationship, reflecting the fact that the higher the score on X, the higher the score on Y and vice versa".

Conversely, a negative value of Pearson 'r' indicates that "low scores on X go with high scores on Y". If a value of +1 or -1 is obtained for 'r', this will indicate that a perfect prediction exists, that is, there will be no mistakes when predicting scores on either X or Y. However, if the value of 'r' is zero, then no linear relationship will exist between X and Y. In this study, correlation and regression are applied to measure the

[15] Harris, J. & G. Lindsey (1995) The elements of phonological representation. In Jacques Durand & Francis Katamba (eds.), Frontiers of phonology: atoms, structures, derivations, 34-79. Harlow, Essex: Longman.

internal consistency among factors determining customer satisfaction towards mobile banking services in Madhya Pradesh.

4.11 VALIDITY AND RELIABILITY OF INSTRUMENTS

Reliability can be defined as the degree to which measurements are free from error and, therefore, give in consistent results. In other words, reliability concerns the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials. Internal consistency involves correlating the responses to each question in the questionnaire with those to other questions in the questionnaire. Although there are variety of methods for calculating internal consistency, of which one of the most frequently used is Cronbach's Alpha, which is the degree of inter correlations among the items that constitute a scale. The reliability of the measuring instruments was assessed with the use of Cronbach Alpha Coefficient. A reliability 0.60 and 0.70 or above is considered to be the criteria for demonstrating internal consistency of new scales and established scales respectively.

Reliability refers to extent to which a measurement instrument is able to yield consistent results each time it is applied under similar conditions. It is the constituent of a measurement device that causes it to yield similar outcome or results for similar inputs. Statistically, reliability is defined as the percentage of the inconsistency in the responses to the survey that is the result of differences in the respondents. This implies that responses to a reliable survey will vary because respondents have different opinions, not because the questionnaire items are confusing or ambiguous.

Reliability could be estimated mathematically or through pre-testing of the instruments. In this study, since the questionnaire items were adopted from previous studies by Guilford, J.P. (1965)[16] but tailored to the insurance service context, it was prudent to conduct a pilot test to refine the instrument. As a result, the questionnaire items were pilot tested to remove confusing words and to improve upon the clarity of the questions items to strengthen its reliability. Again, statistically, the Cronbach's alpha could also be used to assess the reliability of an instrument. A reliability values of 6.0 to 0.70 and above are considered by many researchers as acceptable. In this study, the value of reliability is above .97, so it is highly reliable scale.

The composite reliability alpha for all items excluding the respondents' background data is 0.978 which is very good for statistical analysis.

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[16] Guilford, J.P. (1965) "Fundamental Statistics in Psychology and Education" , 4th Edn. New York: McGraw-Hill.

Validity: ***The estimates of internal consistency, validity for the factors and the total scale estimates of internal consistency for a linear combination is 0.982.***

Table 4.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	No. of Items
.978	.982	45

Cronbach's alpha is .982 so it may be concluded that there is a high degree of internal consistency. Thus, the scale can be considered as a reliable scale.

The researcher, with the schedule approached each respondent. The respondent is briefed about the objective of the research. The sample procedure is discussed with the respondents and there by ensure the trust and support from them. Some persons, students, professionals, business class people, service class people have been approached. The researcher assured the confidentiality of the information supplied. The respondents were assured that the data collected from them would be kept confidential. It is also assured that the information would be used only for academic and research purpose.

4.12 OBJECTIVES OF THE STUDY

The aim of this study is to determine the underlying factors that influence customers' satisfaction with mobile banking Services in M.P.

- To find out the different types of mobile banking services offered by banks to mobile banking users.
- To measure the extent of usage of mobile banking service in M.P. region.
- To evaluate the effectiveness of the services provided by the banks.
- To measure the extent of satisfaction level amongst the customer of mobile banking.
- To suggest appropriate measures and strategies to enhance the use of mobile banking services and its usage in M.P.

4.13 HYPOTHESIS

Hypotheses are predictions that can be tested empirically for internal consistency in a systematic and controlled way. These are basic tool of scientific research that aims to explain phenomenon. They specify relations among variables with the purpose of explaining and predicting phenomena, and reflect the proper scepticism of scientific inquiry about claimed relationships between phenomena by accepting only results that have a statistically low probability (5% or less) of occurring by chance.

The hypotheses in this study were expressed as null hypothesis. The null hypothesis is a succinct way to express the testing of obtained data, against chance expectations. It expresses the chance expectation. Null hypothesis are tested by subjecting them to statistical tests that measure the probability of the event occurring by the ratio of the favourable cases to the whole number of cases possible. It then becomes possible to make appropriate inferences. In the description that follows, the conventional abbreviation for listing hypotheses is used. Much of the interests of the researcher were in the frequency of responses in various categories, and the null hypothesis expression therefore is not considered quite correct. Nevertheless it was considered to be a convenient mode of expression.

For this study, the following hypotheses were formulated:

H_{11}: There is no significant difference between gender category and the effectiveness of mobile banking services and its usage.

H_{01}: There is a significant difference between gender category and the effectiveness of mobile banking services and its usage.

H_{02}: There is no significant difference between marital status category and the effectiveness of mobile banking service and its usage.

H_{12}: There is a significant difference between marital status category and the effectiveness of mobile banking services and its usage.

H_{03}: There is no significant difference among age category and the effectiveness of mobile banking services and its usage.

H_{13}: There is a significant difference among age category and the effectiveness of mobile banking services and its usage

H_{04}: There is no significant difference among occupation and the effectiveness of mobile banking services and its usage.

H_{14}: There is a significant difference among occupation and the effectiveness of mobile banking services and its usage.

H_{05}: There is no significant difference among Income Groups and the effectiveness of mobile banking services and its usage.

H_{15}: There is a significant difference among Income Groups and the effectiveness of mobile banking services and its usage

H_{06}: There is no significant positive relationship between mobile banking services and the level of effectiveness.

H_{16}: There is a significant positive relationship between mobile banking services and the level of effectiveness.

H_{07}: There is no significant difference between mean score of respondents and improving existing mobile banking services.

H_{17}: There is a significant difference between mean score of respondents and improving existing mobile banking services

H_{08}: There is no significant difference between mean scores of respondents' perception and mobile banking services could be improved.

H_{18}: There is a significant difference between mean scores of respondents' perception and mobile banking services could be improved.

H_{09}: There is no significant impact of mobile banking services on customer satisfaction.

H_{19}: There is a significant impact of mobile banking services on customer satisfaction.

The results and findings are reported in two sections. Section 1 focuses on the testing of the hypotheses which have been discussed in the next chapter 'Data Analysis & Interpretation'. Section 2 presents the results of the research in a descriptive format including the demographic breakdowns of the participants and descriptive statistics of the measurements.

Chapter-5

DATA ANALYSIS AND INTERPRETATION

CHAPTER 5

DATA ANALYSIS AND INTERPRETATION

With a view to fulfilling the objective of study, the primary data and the information was collected from 300 respondents (Mobile Banking Users in M.P Region) through a questionnaire survey method. This research adopted simple random survey method with the help of self-developed, structured and disguised questionnaire. It consisted of 45 statements based on 5-point Likert type scale (Strongly disagree -1 to strongly agree - 5) on which the respondents were asked to indicate the degree of agreement or disagreement with the statement. Apart from it, there were few questions prepared on the dichotomous scale (Yes/No) as well.

Statistical Analysis

The data was coded in excel using MS-Office package. The coded data was then analyzed by using SPSS version 17.0. The data was analyzed using descriptive statistics. First of all questions were subjected to frequency analysis and then item total correlation was used to check whether the scale is measuring any variation or not.

Second, factor analysis which is a statistical approach used to analyse interrelationships among a large number of variables and to explain these variables in terms of common underlying dimensions was undertaken to condense the 25 items on the scale which generated **five** items into dimensions. The objective was to find a way of condensing the information contained in a number of original variables into a smaller set of variables (factors) with a minimum loss of information.

In summarizing the data, factor analysis derives underlying dimensions that, when interrupted and understood, describe the data in much smaller number of concepts than the original individual variables. Data reduction was achieved by calculating scores for each underlying dimension and substituting them for the original variables. Thereafter, the reliability and validity of the scale were applied for checking Cronbach's Co-efficient Alpha value, and correlation among them.

Assessment of Reliability

Reliability can be defined as the degree to which measurements are free from error and, therefore, gives consistent results. Internal consistency involves correlating, the responses to each question in the questionnaire with those to other questions in the questionnaire.

Reliability could be estimated mathematically or through pre-testing of the instruments. In this study, since the questionnaire items were adopted from previous studies and literatures and but tailored to the buying decision context, it was prudent to conduct a pilot test to refine the instrument. As a result, the questionnaire items were pilot tested to remove confusing words and to improve upon the clarity of the questions items to strengthen its reliability. Again, statistically, the Cronbach's alpha could also be used to assess the reliability of an instrument. A reliability values of 6.0 to 0.70 and above are considered by many researchers as acceptable. The composite reliability alpha for all items excluding the respondents' background data is 0.948 which is very good for statistical analysis.

The estimates of internal consistency, reliability for the factors and the total scale for the study were consistently high. The total scale estimates of internal consistency reliability for a linear combination ranged from 0.87 to 0.90. Factor analysis of the second phase data supported the dimensionality and expected item loading for both data sets.

Table 5.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	No. of Items
.948	.982	45

Cronbach's alpha is .948 so it may be concluded that there is a high degree of internal consistency. Thus, the scale can be considered as a reliable scale.

5.1 FACTOR ANALYSIS

The exploratory factor analysis with principal components was conducted after ascertaining above data suitability to determine the variables of effectiveness of mobile banking services and its impact on customer satisfaction. This analysis includes preliminary tests to determine the appropriateness of factor analysis: Bartlett's test of Sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) were used for this purpose. Bartlett's test of sphericity is a statistical test for the presence of correlations among variables. The Kaiser-Meyer-Olkin measure of sampling adequacy index, which ranges from 0 to 1, indicates the degree to which each variable in a set is predicted without error by the other variables. If the MSA index reaches 1, each variable is perfectly predicted by the other variables without error by the other variables without error. A value of 0.50 or more from the Kaiser-Meyer-Olkin MSA test indicates that the data is adequate for exploratory factor analysis.

The Kaiser-Meyer-Olkin measured the sampling adequacy of **(0.729)** and Bartlett's test of sphericity (0.000) indicates that the data were appropriate for the factor analysis. Given these results, the exploratory factor analysis was conducted.

The exploratory factor analysis employed a principal component analysis with varimax rotation. Factors with Eigen values greater than 1.0 and rotated factor loadings of 0.50 or greater were retained. Despite the fact that, with a sample size was 300, a factor loading of 0.30 could have been considered significant in this research. Previous researches suggested that factor loadings of 0.50 or greater are practically significant. To ensure that each factor identified by the exploratory factor analysis would have only one dimension and that each attribute would load on only one factor, items with factor loadings less than 0.50 and any item loading on more than one factor with a loading score equal to or greater than 0.40 on each factor were to be eliminated from the analysis (Chen & Hsu, 2001; Kim, 2002). In addition, because the communality of a variable represents the amount of variance in the factor solution explained by that variable variables with communalities less than 0.40 were deleted for reasons of insufficient contribution to explaining the variance. In this study author eliminated three factors from the list as they were falling below 40% or having insufficient contribution for explain variances.

The data was collected from 300 respondents. The factor analysis is being used to validate an effectiveness of mobile banking services extracted from a focus group of participants. Considering that it is being used here more for validation rather than a classification perspective, thus limitation of a small sample size was ignored. The respondents were asked to group these attributes across the effectiveness of mobile banking services. This helped to fix the attributes under each function on the basis of the perspectives of the respondents.

The evaluation grid was further used to conduct a factor analysis using Principal Components Analysis with Varimax rotation to regroup these attributes which are the part of effectiveness of mobile banking services and their effect on customer satisfaction. This was done by using the highest loading as a determinant of the factor a variable belonged to. This helped in the extraction of the factors affected by mobile banking services.

Descriptive Statistics:

In the below table 5.2, the descriptive statistics, i.e., mean and standard deviation of all the 25 variables, which contributed towards effectiveness of mobile banking services have been given. The mean file of all the items is resulting in a value of more than four, which indicates that all respondents are over all satisfied and are agreeing to the statements.

TABLE 5.2: DESCRIPTIVE STATISTICS (ITEM-WISE MOBILE BANKING SERVICES)

ITEMS	MEAN	STD. DEVIATION	N
1. Reliable transactions	4.29	0.617	300
2. Time saving	4.15	0.875	300
3. Easy to access	4.19	0.790	300
4. Convenient	4.40	0.844	300
5. Security	4.02	0.729	300
6. Bill payment processing	4.00	0.799	300
7. Error free alerts	4.00	0.851	300
8. ATM Location	3.92	0.767	300

ITEMS	MEAN	STD. DEVIATION	N
9. Grievance redressed mechanism	4.15	0.743	300
10. Integration of mobile and online services.	4.13	0.761	300
11. Safety of funds	4.25	0.786	300
12. Accuracy in maintaining records	4.25	0.700	300
13. Customer relationship strategies	4.19	0.673	300
14. Customer support	4.21	0.743	300
15. Timely information	4.06	0.810	300
16. Transparent policies	4.21	0.713	300
17. Fund transfers	4.04	0.743	300
18. Employees' knowledge	4.33	0.630	300
19. Cheaper rate for mobile charging	4.02	0.758	300
20. Wide range of services	4.13	0.866	300
21. Courtesy of services	4.40	0.707	300
22. Cheaper subscription	4.21	0.743	300
23. Change of PIN, blocking of (lost or stolen cards)	4.06	0.697	300
24. Speedy	4.08	0.710	300
25. Availability of new schemes. Products/offers/discounts	4.27	0.707	300

The Kaiser-Meyer-Olkin KMO value of factor analysis (Table 5.3 given below) is 0.729, which indicates that factor analysis is reliable to be done for the above 25 variables. And also the significance value is 0.000, which also relates the same.

TABLE 5.3: FACTOR ANALYSIS (KMO AND BARTLETT'S TEST)

Kaiser-Meyer-Olkin measure of sampling adequacy		**0.729**
Bartlett's Test of Sphericity	Approx. Chi-Square	1056.308
	Df	300
	Sig.	0.000

TABLE 5.4: RELIABILITY ITEM TOTAL STATISTICS (EFFECTIVENESS OF MOBILE BANKING SERVICES)

Items	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
1. Reliable transactions	99.65	148.702	0.559	0.947
2. Time saving	99.79	142.764	0.668	0.945
3. Easy to access	99.75	141.936	0.794	0.944
4. Convenient	99.54	141.232	0.776	0.944
5. Security	99.92	145.312	0.664	0.945
6. Bill payment processing	99.94	145.677	0.580	0.946
7. Error free alerts	99.94	144.443	0.604	0.946
8. ATM Location	100.02	145.936	0.592	0.946
9. Grievance redressal mechanism	99.79	146.722	0.568	0.947
10. Integration of mobile and online services.	99.81	146.453	0.568	0.947
11. Safety of funds	99.69	143.922	0.688	0.945
12. Accuracy in maintaining records	99.69	145.241	0.698	0.945
13. Customer relationship strategies	99.75	145.553	0.708	0.945
14. Customer support	99.73	148.627	0.460	0.948
15. Timely information	99.88	148. 112	0.443	0.948
16. Transparent policies	99.73	146.670	0.598	0.946
17. Fund transfers	99.90	146.776	0.566	0.947
18. Employees' knowledge	99.60	146.712	0.681	0.945
19. Cheaper rate for mobile charging	99.92	145.525	0.624	0.946
20. Wide range of services	99.81	142.028	0.714	0.945
21. Courtesy of services	99.54	43.785	0.780	0.944
22. Cheaper subscription	99.73	147.776	0.508	0.947
23. Change of PIN, blocking of (lost or stolen cards)	99.88	147.133	0.585	0.946
24. Speedy	99.85	146.893	0.588	0.946
25. Availability of new products/schemes/offers/discounts	99.67	142.908	0.834	0.944

As the first step in examining the validity of each measure along with descriptive statistics of different parameters of mobile banking services, the exploratory factor analysis was employed using SPSS. All the items of all the measures were factor analysed together to test the convergent and discriminate validity of the measures. The items were subjected to principal analysis (with Varimax Rotation). The factor loading represented the correlation between the items with the construct. In component analysis, only the factor having Eigen values greater than 1 was considered significant. A minimum value of 0.50 was used to indicate the loading of any factor. The results of factor analysis are presented in **Table 5.5.**

TABLE 5.5: FACTOR ANALYSIS (TOTAL VARIANCE EXPLAINED)

Component	Initial Eigen Values		
	Total	% of variance	Cumulative
1. Reliable transactions	11.407	45.628	45.628
2. Time saving	2.584	0.334	55.963
3. Easy to access	1.704	6.815	62.778
4. Convenient	1.590	6.362	69.139
5. Security	1.270	5.080	74.219
6. Bill payment processing	0.913	3.652	77.872
7. Error free alerts	0.833	3.330	81.202
8. ATM Location	0.703	2.813	84.015
9. Grievance redressal mechanism	0.676	2.704	86.719
10. Integration of mobile and online services.	0.586	2.342	89.061
11. Safety of funds	0.457	1.829	90.890
12. Accuracy in maintaining records	0.430	1.772	92.611
13. Customer relationship strategies	0.332	1.329	93.940
14. Customer support	0.297	1.187	95.127
15. Timely information	0.231	0.922	96.050
16. Transparent policies	0.226	.906	96.955
17. Fund transfers	0.161	0.643	97.599
18. Employees' knowledge	0.135	0.541	98.139
19. Cheaper rate for mobile charging	0.111	0.445	98.584
20. Wide range of services	0.105	0.419	99.003
21. Courtesy of services	0.091	0.364	99.367

Component	Initial Eigen Values		
	Total	% of variance	Cumulative
22. Cheaper subscription	0.068	0.272	99.638
23. Change of PIN, blocking of (lost or stolen cards)	0.045	0.178	99.817
24. Speedy	0.028	0.14	99.930
25. Availability of new products/offers/schemes/discounts	0.017	0.070	100.000

TABLE 5.6: ROTATION SUM OF SQUARED LOADINGS

Component	Extraction sum of squared loadings			Rotation sum of squared loadings		
	Total	% of variance	Cumulative	Total	% of variance	Cumulative
VR001	11.407	45.628	45.628	5.288	21.153	21.153
VR002	2.584	10.334	55.963	4.290	17.162	38.315
VR003	1.704	6.815	62.778	4.140	16.559	54.873
VR004	1.590	6.632	69.139	2.420	9.681	64.555
VR005	1.270	5.080	74.29	2.46	9.665	74.219
VR006						
VR007						
VR008						
VR009						
VR010						
VR011						
VR012						
VR013						
VR014						
VR015						
VR016						
VR017						
VR018						
VR019						
VR020						
VR021						
VR022						
VR023						
VR024						
VR025						

After applying the factor analysis on all the 25 variables these variables have reduced to five different factors, which explained around 74.219% of the total variance. The first factor with their loading pattern indicates that a general factor is running through out all the items explaining about 21.153% of the variance. The second factor explains about 38.315%, third factor explains 54.873%, the fourth factor explains 64.555% and the fifth factor explains 74.219%. The entire five factors explain about 74.219% of the total variance.

Kaiser (1974) recommends accepting values greater than 0.5 as acceptable (values below this should lead to either collect more data or rethink which variable to include). Furthermore, values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, and values between 0.8 and 0.9 are an excellent. For these data, the value is 0.729, which falls into range of being great. So, we should be confident that factor analysis is appropriate for this study.

SPSS has identified 5 linear components within the data set. The Eigen values associated with each factor represent the variance explained by that particular linear component and SPSS also displays the Eigen value in terms of the percentage of variance explained in Table 5.5 and Table 5.6.

All the 25 variables are reduced to five factors where the factors have been derived through Varimax method and through principal component analysis where the Eigen value is greater than 1. The loading of the variables to the factor are marked in bold letter in Table No. 5.7 and Table 5.8 of rotated component matrix.

TABLE 5.7: FACTOR ANALYSIS (ROTATED COMPONENT MATRIX)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. Reliable transactions	0.068	**0.773**	0.280	0.078	0.001
2. Time saving	0.282	**0.674**	0.173	0.224	0.173
3. Easy to access	**0.594**	0.392	0.392	0.123	0.216
4. Convenient	**0.570**	0.294	0.561	-0.023	0.211
5. Security	0.018	0.394	**0.816**	0.211	0.047
6. Bill payment processing	-0.105	0.542	**0.546**	0.317	0.085
7. Error free alerts	0.071	**0.680**	0.144	0.401	0.184

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
8. ATM Location	0.087	**0.770**	0.190	0-185	0.125
9. Grievance redressal mechanism	0.370	**0.686**	0.062	-0.189	0.287
10. Integration of mobile and online services.	**0.718**	0.307	0.116	-0.007	-0.013
11. Safety of funds	**0.715**	0.208	0.425	0.127	-0.087
12. Accuracy in maintaining records	0.434	0.086	**0.676**	0.416	-0.067
13. Customer relationship strategies	0.236	0.389	**0.497**	0.137	0.406
14. Customer support	0.098	0.212	0.064	0.233	**0.773**
15. Timely information	0.063	0.092	0.236	0.090	**0.841**
16. Transparent policies	0.196	0.234	0.200	**0.795**	0.202
17. Fund transfers	0.303	0.271	0.012	**0.743**	0.210
18. Employees' knowledge	**0.470**	0.468	0.323	0.399	-0.234
19. Cheaper rate for mobile charging	0.362	0.108	**0.730**	-0.145	0.274
20. Wide range of services	0.239	0.262	**0.675**	0.015	0.457
21. Courtesy of services	0.426	0.178	**0.498**	0.368	0.397
22. Cheaper subscription	**0.762**	-0.058	0.031	0.262	0.197
23. Change of PIN, blocking of (lost or stolen cards)	**0.797**	-0.061	0.105	0.319	0.203
24. Speedy	**0.875**	0.114	0.095	0.055	0.058
25. Availability of new products/offers/schemes/discounts	**0.617**	0.444	0.424	0.170	0.096
Extraction method: principal Component Analysis. ***Rotation method: Varimax with Kaiser Normalisation***					

TABLE 5.8: FACTOR ANALYSIS (LOADINGS WITH VARIABLES)

Factors	Variance explained	Variables	Loadings	Eigen Values
Factor 1 (Accessibility)	**21.153**	Easy to access	**0.594**	**11.407**
		Convenient	**0.570**	
		Integration of mobile and online services	**0.718**	
		Safety of funds	**0.715**	
		Cheaper subscription	**0.762**	
		Change of PIN, blocking of (lost or stolen cards)	**0.797**	
		Speedy	**0.875**	
		Habit of savings	**0.617**	
Factor 2 (Facilitation)	**17.162**	Reliable transactions	**0.773**	**2.584**
		Time saving	**0.674**	
		Error free alerts	**0.680**	
		ATM Location	**0.770**	
		Grievance redressed mechanism	**0.686**	
Factor 3 (Reliable & secure services)	**16.599**	Security	**0.816**	**1.704**
		Bill payment processing	**0.546**	
		Accuracy in maintaining records	**0.676**	
		Cheaper rate for mobile charging	**0.730**	
		Wide range of services	**0.675**	
Factor 4 (Transparency)	**9.681**	Transparent policies	**0.795**	**1.590**
		Fund transfers	**0.743**	
Factor 5 (Customer relation)	**9.665**	Customer support	**0.773**	**1.270**
		Timely information	**0.841**	

Regression Analysis

The concepts and principles developed in dealing with simple linear regression (i.e., one explanatory variable) may be extended to deal with several explanatory variables.

Multiple Regression Equation:

$$Y=C+\beta x_1+ \beta x_2+ \beta x_3+ \beta x_4+ \beta x_5+\text{-------- } +\beta x_n$$

Where Y is prediction relationship of types of variables towards mobile banking services

C is constant value

β is un-standardized coefficient

x is dimension of independent variable.

Regression models are used to predict a variable from one or more than one variables. The regression analysis is used in the study to predict the extent of dependence of various factors, as its explanatory variable. This was tested by using the first result of the regression analysis, i.e., analysis of variance (ANOVA; F-Test). Further, R square value of the regression analysis has been made to show the extent to which the explanatory variables explain the dependent factor.

The second result of the regression analysis, i.e., t-test along with significant value (P-value), indicates the most significant explanatory variable that influences the explained/dependent factor. Along with the t-test, the multi-colliniearity test is also used to measure the collinearity among the explanatory variables.

TABLE 5.9: MODEL SUMMARY OF MOBILE BANKING SERVICES (ANOVA)

Items	Sum of Squares	Df	Mean Square	F	Sig.
Regression	210.562	4	52.640	1349.743	0.000
Residual	10.385	266	0.0390		
Total	220.946	300			
R Square	0.953	Adjusted R Square	0.952	Std. Error of the Estimate	0.253

The ANOVA (F-Test) indicates that the scale/factor, i.e., 'Mobile Banking Services' was quite significant in M.P region. All the explanatory variables, i.e., five factors for studying mobile services are quite significant. The R square value of the above model is 0.953, which means the dependent variable (Mobile Banking Services) is influenced by all this five explanatory variables by 95.3%, which is a good indicator for establishing a well set effectiveness of services. Further it is seen that for the table that the significant value (p-value) of F-test are 0.000, which means that all five explanatory variables are highly significant with respect to the explained factor i.e., that is mobile banking services.

TABLE 5.10: MOBILE BANKING SERVICES (MULTIPLE REGRESSION COEFFICIENT ANALYSIS) COEFFICIENTS[A]

Parameters	Unstandarized coefficients		Standarized coefficients	t	Sig.	Tolerance Statistics	
	B	Std. error	Beta			Tolerance	VIF (Variance Inflation Factor)
Constant	0.075	0.060		1.250	0.213		
Factor 1	0.273	0.020	0.313	13.806	0.000*	0.561	1.782
Factor 2	0.241	0.022	0.272	11.039	0.000*	0.474	2.111
Factor 3	0.268	0.025	0.274	10.817	0.000*	0.449	2.229
Factor 4	0.240	0.019	0.305	12.447	0.000*	0.479	2.089
Factor 5	0.243	0.021	0.315	11.138	0.000*	0.481	2.185

- ***Significant at 1% level***

The above table determines satisfactory result as the significance level of the model is not over or smaller than 0.05. Thus, model used in this research is good. The multiple regression coefficient analysis has been represented in Table 5.10.

It is concluded that if tolerance is less than 0.20 or 0.10/a Variance Inflation Factor (VIF) is 5 or 10 above it indicates a multi-co linearity problem. But in this case, as shown in the table--, the value of tolerance of all items is more than 0.20 and the value of VIF of all items are less than 5. This suggests that no multi- co linearity exists among the explanatory variables, which explain the explained factor, i.e., Mobile Banking services.

Based on the multiple regression output tables of 'dimensions of mobile services' and its constituent variables, the following equation can drive:

M (Y) =0.075+0.273 (F1) +0.274 (F2) +0.268 (F3) +0.240 (F4) +0.243 (F5)

This can be interpreted that the increase of 1 unit of delivery of Factor 1 (accessibility), may incur the raise of 0.273 units in mobile banking services (M) (Y). However, for the independent variable of Factor 2 (Facilitation), every 1 unit of increase will incur the raise of 0.241 units' dependent variable, (M). On the other hand, 1 unit increase in Factor 3 (Reliable & Secure services) may incur the raise of 0.268 units of M. Similarly, 1 unit increase in Factor 4 (Transparency) may cause 0.240 units of M. Finally, Factor 5 (Customer relations) also has a constant relation with M. It is every 1 unit increase in F5 (CR) incurs the raise of 0.243 units in M.

The highest Beta indicates that independent variable is the most significant contributing variable towards the dependent variable i.e. Mobile Banking Services. From the above table, the coefficient of independent variable (F1) i.e. Easy Accessibility is the highest (0.273) which means that independent variable of Factor 1, accessibility is the most and has stronger effect towards the mobile banking services on customer satisfaction to other independent variables.

Further, it is seen form the table that the significant value (p-value) of t-test for all items are 0.000, which means that all the five reduced factor through factor analysis are highly significant with respect to the explained factor, i.e., 'effectiveness of mobile banking services'.

A Rotation converged in 5 iterations.

- Interpretation of factors is facilitated by identifying the statements that have large loading in the same factor. The factor can be interpreted in terms of the statement that loads high on it. The factors such as accessibility, Facilitation, Reliable & Secure Services, transparency and customer relations are affected by mobile banking services comprise of 25 individual statements. Out of 25 factors, 5 individual factors are the result of mobile banking services.

  These Factors are:

  - Accessibility
  - Facilitation
  - Reliable & Secure Services

- Transparency
- Customer Relations

5.2 ONE-WAY ANOVA TEST

When we want to compare means of more than two groups of levels or an independent variable, one –way ANOVA can be used. ANOVA is used for finding significant relation between various variables. The procedure of ANOVA involves the derivation of two different estimates of population variance from the data. Then statistic is calculated from the ratio of these two estimates. One of the estimates (between group variance) is the measure of the effect of independent variable combined with error variance. The other estimate (within group variance) is of error variance itself. The F-ratio is between groups and within groups' variance.

It was examined whether there was any statistically significant difference in the perceptions of the three sets of respondents. The one-way ANOVA was applied to test that no significant difference existed among the respondents about the variables considered for obtaining the effectiveness of mobile banking services.

$\mathbf{H_{01}}$: There is no significant difference between gender category and the effectiveness of mobile banking services and its usage.

$\mathbf{H_{11}}$: There is a significant difference between gender category and the effectiveness of mobile banking services and its usage.

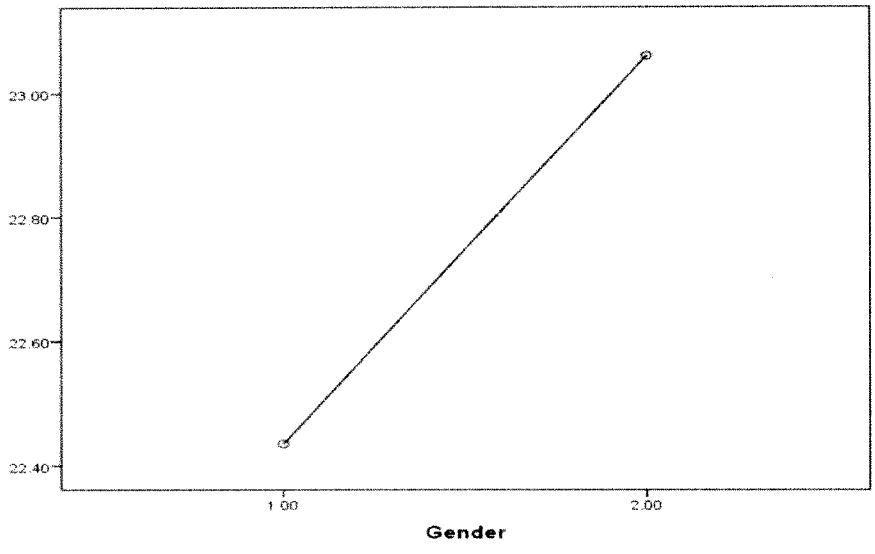
TABLE: 5.11 DESCRIPTIVE STATISTICS OF GENDER CATEGORY

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Male	218	22.4352	6.92991	.47152	21.5058	23.3646	11.00	44.00
Female	82	23.0602	5.96402	.65464	21.7580	24.3625	11.00	34.00
Total	300	22.6087	6.67189	.38585	21.8494	23.3680	11.00	44.00

TABLE 5.12: ANOVA ON GENDER

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	23.426	1	23.426	.525	.528
Within Groups	13241.791	299	44.286		
Total	165.17	300			

FIGURE 5.1: MEAN PLOT ON GENDER



Interpretation: The Table 5.11 given above reveals the analysis of mean of different factors between gender categories of respondents reveals that mean ratings of female (23.0602) towards the effectiveness of mobile banking services and its usage is higher than male (22.4352). There is a slight difference in the mean of these two categories. It means that male and female both are equally access the mobile banking services.

From the Table 5.12, it is clear that calculated value of F is lesser (.525) than the tabulated value of F = 2.37, at ($p<0.05$) level of significance. Hence, the hypothesis is not significant at .528 which is much greater than 5% level of significance. Regarding the gender category, they are the important variables but mobile banking services are not influenced by gender category. Gender contributes in giving preference to the effectiveness of mobile banking services and its usage.

H_{02}: There is no significant difference between marital status category and the effectiveness of mobile banking services and its usage.

H_{12}: There is a significant difference between marital status category and the effectiveness of mobile banking services and its usage.

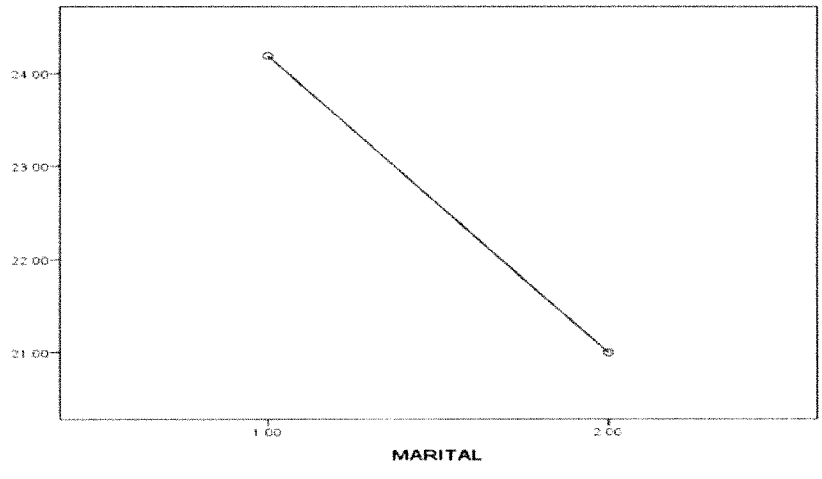
TABLE 5.13: DESCRIPTIVE STATISTICS OF MARITAL STATUS

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Bachelor	151	24.1921	6.90383	.56183	23.0819	25.3022	11.00	44.00
Married	149	20.9932	6.03335	.49594	20.0132	21.9733	11.00	34.00
Total	300	22.6087	6.67189	.38585	21.8494	23.3680	11.00	44.00

TABLE 5.14: ANOVA ON MARITAL STATUS

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	764.794	1	764.794	18.293	.000
Within Groups	12500.424	299	41.807		
Total	13265.217	300			

FIGURE 5.2: MEAN PLOT ON MARITAL STATUS



Interpretation: In Table 5.13 given above, analysis of mean of different factors between marital status categories of respondents reveals that mean ratings of Bachelor (24.1921) towards the effectiveness of mobile banking services and its usage is higher

than Married (20.9932) has been revealed. There is a difference in the mean of these two categories. It means those bachelors are an active in accessing the mobile banking services effectively and efficiently. As youth is more conscious and ready to avail this services which may be have an impact on their employment or other factors.

From the Table 5.14, it is clear that calculated value of F is greater (18.293) than the tabulated value of F = 2.37, at ($p<0.05$) level of significance. Hence, the hypothesis is significant at .000 which is less than 5% level of significance. Regarding the marital category, they are the important variables and effectiveness of mobile banking services are influenced by marital status category. Marital Status contributes in giving preference to the effectiveness of mobile banking services and its usage.

H_{03}: There is no significant difference among age category and the effectiveness of mobile banking services and its usage.

H_{13}: There is a significant difference among age category and the effectiveness of mobile banking services and its usage.

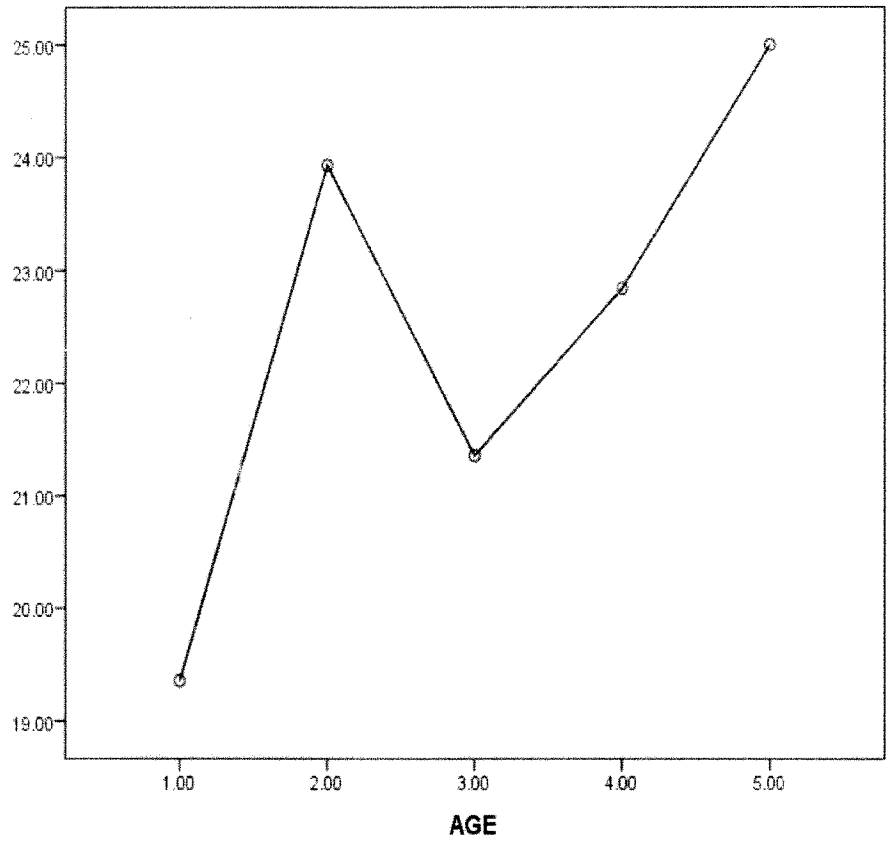
TABLE 5.15: DESCRIPTIVE STATISTICS OF AGE CATEGORY

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<18	14	19.3571	4.74920	1.26928	16.6150	22.0993	11.00	25.00
18-24	101	23.9307	6.80773	.67739	22.5868	25.2746	11.00	44.00
25-34	100	21.3600	7.05179	.70518	19.9608	22.7592	11.00	41.00
35-54	76	22.8421	6.03778	.69258	21.4624	24.2218	11.00	34.00
55+	9	25.0000	4.62910	1.63663	21.1300	28.8700	21.00	33.00
Total	300	22.6087	6.67189	.38585	21.8494	23.3680	11.00	44.00

TABLE 5.16: ANOVA ON AGE CATEGORY

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	530.343	4	132.586	3.081	.017
Within Groups	12734.874	296	43.023		
Total	13265.217	300			

FIGURE 5.3: MEAN PLOT ON AGE CATEGORY



Interpretation: In Table 5.15 given above, analysis of mean of different factors among age category of respondents reveals that mean ratings of <18 (19.3571), between age of 18-24 the mean is (23.9307), between the age of 25-34 the mean is (21.3600), between the age of 35-54 the mean is (22-8421) but it is surprised to found that those respondents who are above than 55, they are more prone to use the mobile baking services as they feel more comfortable and they also found the transactions

safe and the security of funds. There is a difference in the mean of among the age groups. Then the second highest mean rating is "between" 18-24 the age group of youth those who frequently access these services.

From the Table 5.16, it is clear that calculated value of F is greater (3.0281) than the tabulated value of F = 2.37, at ($p<0.05$) level of significance. Hence, the hypothesis is significant at .017 which is less than 5% level of significance. Regarding the age category, it is said that effectiveness of mobile banking services are influenced by age category. Age contributes in giving preference to the effectiveness of mobile banking services and its usage.

H_{04}: There is no significant difference among occupation and the effectiveness of mobile banking services and its usage.

H_{14}: There is a significant difference among occupation and the effectiveness of mobile banking services and its usage.

To test the above hypothesis the four occupation groups considered in the present study were salaried, business class, professionals and others. The mean scores of the various occupation groups were found out along with standard deviation. Based on this, the F value was computed. The results are summarized in Table 5.19:

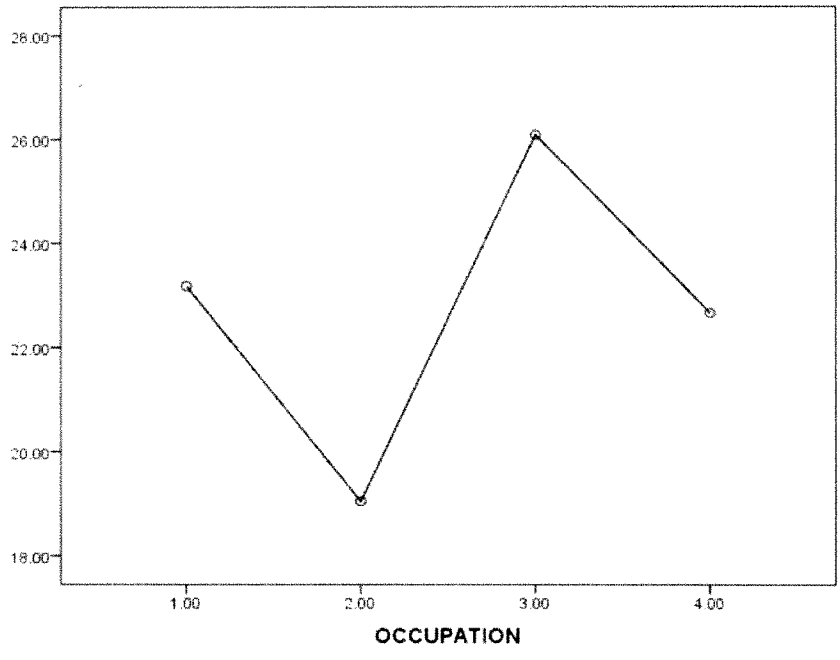
TABLE 5.17: DESCRIPTIVE STATISTICS OF PROFESSION (OCCUPATION) CATEGORY

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Salaried	179	23.1732	7.10263	.53088	22.1256	24.2208	11.00	44.00
Business	41	19.0488	4.53845	.70879	17.6163	20.4813	11.00	28.00
Professionals	12	26.0833	5.69622	1.64436	22.4641	29.7025	11.00	34.00
Others	68	22.6567	6.00896	.73411	21.1910	24.1224	11.00	33.00
Total	300	22.6087	6.67189	.38585	21.8494	23.3680	11.00	44.00

TABLE 5.18: ANOVA ON PROFESSION (OCCUPATION) CATEGORY

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	721.663	3	240.554	5.695	.001
Within Groups	12543.555	297	42.234		
Total	13265.217	300			

FIGURE 5.4: MEAN PLOT ON OCCUPATION OF RESPONDENTS



Since P Value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance with respect to effectiveness of mobile banking services and its usage. In Table 5.17 given above, analysis of mean of different categories among the occupation of respondents reveals that mean ratings of salaried respondents is 23.1732, business class (19.048), Professional (26.0833) and others (22.6567) revealed that perception of professionals are much higher than other categories. It is evident from the analysis that professional class people are more aware of these services and they are more conscious about mobile banking services and they feel that this type of services is reliable and it is so easy for commercial transactions and also at the same time convenient in this competitive world. Mean rating of 'salaried has been scored second highest among all the categories.

From the Table 5.18, it is clear that calculated value (5.695) of F is greater than the tabulated value of F = 2.37, at ($p<0.05$) level of significance. Through the analysis, it may be concluded that all the respondents' categories are responsible and their attitude towards effectiveness of mobile banking services is significant. Occupation category contributes in giving preference mobile banking services.

$\mathbf{H_{05}}$: There is no significant difference among Income Groups and the effectiveness of mobile banking services and its usage.

$\mathbf{H_{15}}$: There is a significant difference among Income Groups and the effectiveness of mobile banking services and its usage.

To test the above hypothesis the seven group of income level considered in the present study were up to 10000, 10000-15000, 15000-20000, 20000-25000, 25000-30000, 30000-35000 and 35000 and above. The mean scores of the various income groups were found out along with standard deviation. Based on this, the F value was computed. The results are summarized in Table 5.19:

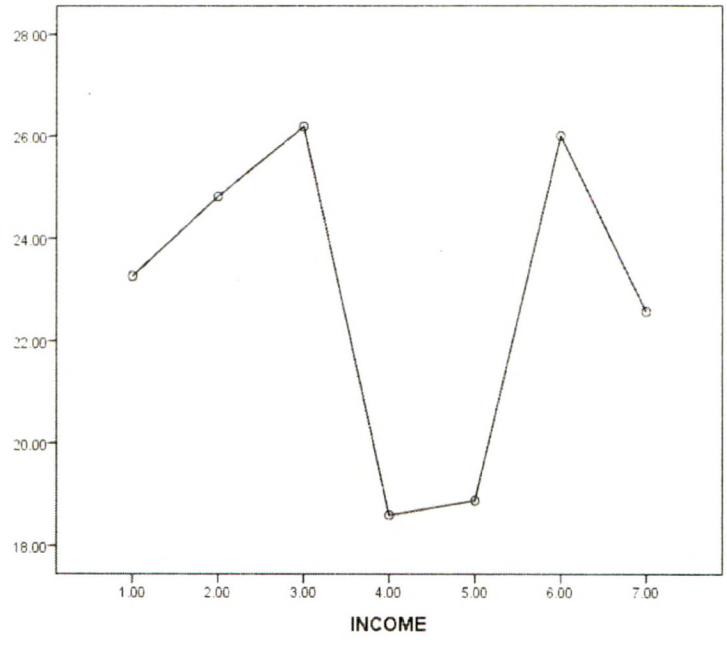
TABLE 5.19: DESCRIPTIVE STATISTICS OF INCOME CATEGORY

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Upto 10000	84	23.2651	7.19431	.78968	21.6941	24.8360	11.00	44.00
10000-15000	44	24.8182	5.99718	.90411	22.9949	26.6415	11.00	37.00
15000-20000	22	26.1818	7.44911	1.58815	22.8791	29.4846	11.00	41.00
20000-25000	37	18.5946	5.55508	.91325	16.7424	20.4467	11.00	28.00
25000-30000	34	18.8824	4.64996	.79746	17.2599	20.5048	11.00	28.00
30000-35000	14	26.0000	5.42076	1.44876	22.8701	29.1299	11.00	34.00
35000 & above	65	22.5692	6.04920	.75031	21.0703	24.0681	11.00	33.00
Total	300	22.6087	6.67189	.38585	21.8494	23.3680	11.00	44.00

TABLE 5.20: ANOVA ON INCOME CATEGORY

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1760.844	6	293.474	7.499	.000
Within Groups	11504.374	294	39.130		
Total	13265.217	300			

FIGURE 5.5: MEAN PLOT ON INCOME GROUP OF RESPONDENTS



Since P Value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance with respect to effectiveness of mobile banking services and its usage. In Table 5.19 given above, analysis of mean of different categories among the income group of respondents reveals that mean ratings of up to 10000 is 23.2651, 10000-15000 mean is 24.8182, 15000-20000is 26.1818, 20000-25000 is 18.5946, 25000-30000 is18.8824, 30000-35000 is 26.000 and those who have more than 35000and above the income their mean rating is 22.5692. It is evident from the analysis that the mean rating of the respondents those who have their income between 15000-20000it means these people are more conscious and frequently uses the mobile banking services.

From the Table 5.20, it is clear that calculated value of F (7.499) is greater than the tabulated value of F = 2.37, at ($p<0.05$) level of significance. Through the analysis, it may be concluded that all the respondents 'income categories are responsible and their attitude towards effectiveness of mobile banking services is significant. Income group category contributes in giving preference mobile banking services.

5.3 CORRELATION & REGRESSION ANALYSIS (MOBILE BANKING SERVICES & CUSTOMER SATISFACTION)

To measure the impact of mobile banking services on customer satisfaction correlation and regression were applied on the following hypotheses:

H_{06}: There is no significant impact of mobile banking services on customer satisfaction.

H_{16}: There is a significant impact of mobile banking services on customer satisfaction.

TABLE 5.21: DESCRIPTIVE STATISTICS ON MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

	Mean	Std. Deviation	N
Customer Satisfaction	215.5400	26.45919	300
Mobile Banking Services	40.9933	7.75934	300

TABLE 5.22: CORRELATIONS BETWEEN MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

		Customer Satisfaction	Mobile Banking Services
Pearson Correlation	Customer Satisfaction	1.000	.916
	Mobile Banking Services	.916	1.000
Sig. (1-tailed)	Customer Satisfaction	.	.000
	Mobile Banking Services	.000	.
N	Customer Satisfaction	300	300
	Mobile Banking Services	300	300

The value correlation coefficient between Mobile Banking Services and Customer Satisfaction is 0.916, and it is significant at 5% level of significance thus, it may be concluded that Mobile Banking Services have significant role in sustaining the Customer Satisfaction. Furthermore, since the value of correlation coefficient r suggests a strong positive correlation, we can use a regression analysis to obtain a relationship between the variables.

TABLE 5.23: MODEL SUMMARY[A] ON MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.916[a]	.839	.839	10.61872
a. Predictors: (Constant), Mobile Banking Services				
b. Dependent Variable: Customer Satisfaction				

TABLE 5.24: MODEL SUMMARY[B] ON MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.839	1558.435	1	298	.000
b. Dependent Variable: Customer Satisfaction					

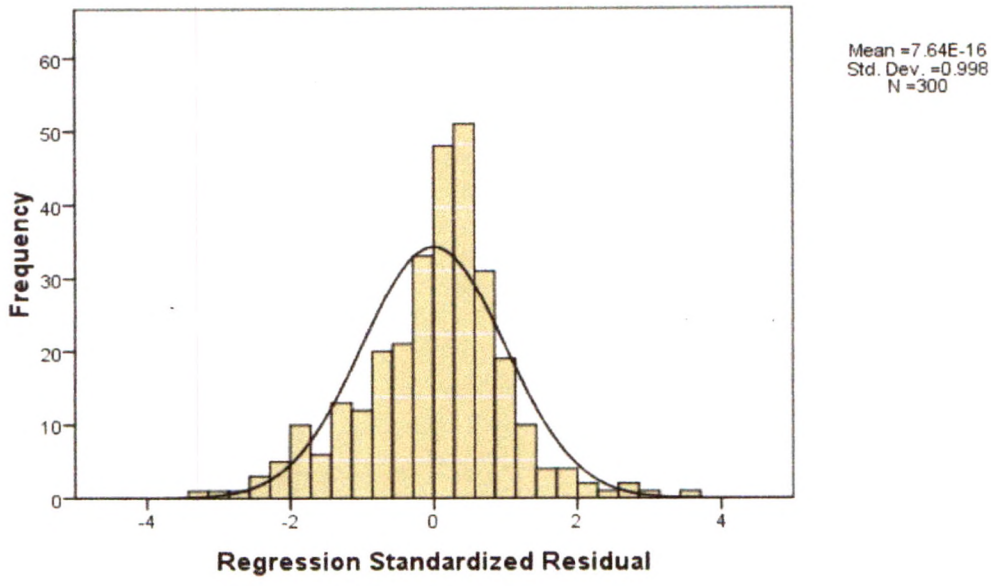
TABLE 5.25: ANOVA[B] ON MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175724.857	1	175724.857	1558.435	.000[a]
	Residual	33601.663	298	112.757		
	Total	209326.520	299			
a. Predictors: (Constant), Mobile Banking Services						

TABLE 5.26: COEFFICIENTS[A] ON MOBILE BANKING SERVICES & CUSTOMER SATISFACTION

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	87.463	3.302		26.490	.000
	Mobile Banking Services	3.124	.079	.916	39.477	.000
a. Dependent Variable: Customer Satisfaction						

FIGURE 5.6: HISTOGRAM: DEPENDENT VARIABLE: CUSTOMER SATISFACTION



Regression Analysis

Customer Satisfaction is taken as a dependent variable and Mobile Banking Services is taken as independent variable. Model summary shows the values of R^2 , adjusted R^2 and R^2 change, which are all same in this case. Here R^2 is 0.839 with standard error of estimate equal to 10.618. We can interpret this as 83.9% of the variation in customer satisfaction is explained by mobile banking services. This value of coefficient of determination (R^2) is significant and therefore the association can be considered as significant. ANOVA table gives results of Analysis of variance. Since the p value is less than 0.01 and 0.05 it is significant at both the levels of significance and it lead to reject the hypothesis of all model coefficients being zero or we can say that variation explained by the model is not due to chance. And we should conclude that all the model coefficients differ significantly from zero and Compensation can be used to judge the customer satisfaction.

The regression equation, which can be formed using coefficients table, is

Customer Satisfaction = 87.463 + 3.124*Mobile Banking Services

Since p-value is less than 0.05 the hypothesis that the slope of the regression line is zero is rejected. The model is considered to be statistically acceptable.

A Residual is the difference between observed and model predicted value of the dependent variable. A histogram is used to check the assumption of normality error

term or residuals. Since the shape of the histogram for regression standardized residuals is approximately normal. Thus the assumption of regression analysis about the normality of residuals is fulfilled.

H_{07}: There is no significant positive relationship between mobile banking services and the level of effectiveness.

H_{17}: There is a significant positive relationship between mobile banking services and the level of effectiveness.

Status: Null hypothesis rejected

TABLE 5.27: DESCRIPTIVE STATISTICS ON MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

	Mean	Std. Deviation	N
Level of Effectiveness	215.5400	26.45919	300
Mobile Banking Services	24.7633	4.12602	300

TABLE 5.28 CORRELATIONS BETWEEN MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

		Level of Effectiveness	Mobile Banking Services
Pearson Correlation	Level of Effectiveness	1.000	.745
	Mobile Banking Services	.745	1.000
Sig. (1-tailed)	Level of Effectiveness	.	.000
	Mobile Banking Services	.000	.
N	Level of Effectiveness	300	300
	Mobile Banking Services	300	300

Above table 5.28 shows the correlations and it is evident from this table that Pearson's correlation coefficient between Mobile Banking Services and Level of Effectiveness is 0.745 which is significant since the significant value (p- value) 0.000 is less than 0.05. Therefore, we may conclude that there is significant association between Mobile Banking Services and Level of Effectiveness. Furthermore, since the value of correlation coefficient r suggests a strong positive correlation, we can use a regression analysis to Model the relationship between the variables.

Regression Analysis

TABLE 5.29 MODEL SUMMARY[A ON] MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

Model				
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745[a]	.555	.554	17.67694
a. Predictors: (Constant), Mobile Banking Services				
b. Dependent Variable: Level of Effectiveness				

TABLE 5.30 MODEL SUMMARY[B ON] MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.555	371.900	1	298	.000
b. Dependent Variable: Level of Effectiveness					

TABLE 5.31 ANOVA[B ON] MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	116209.180	1	116209.180	371.900	.000[a]
	Residual	93117.340	298	312.474		
	Total	209326.520	299			

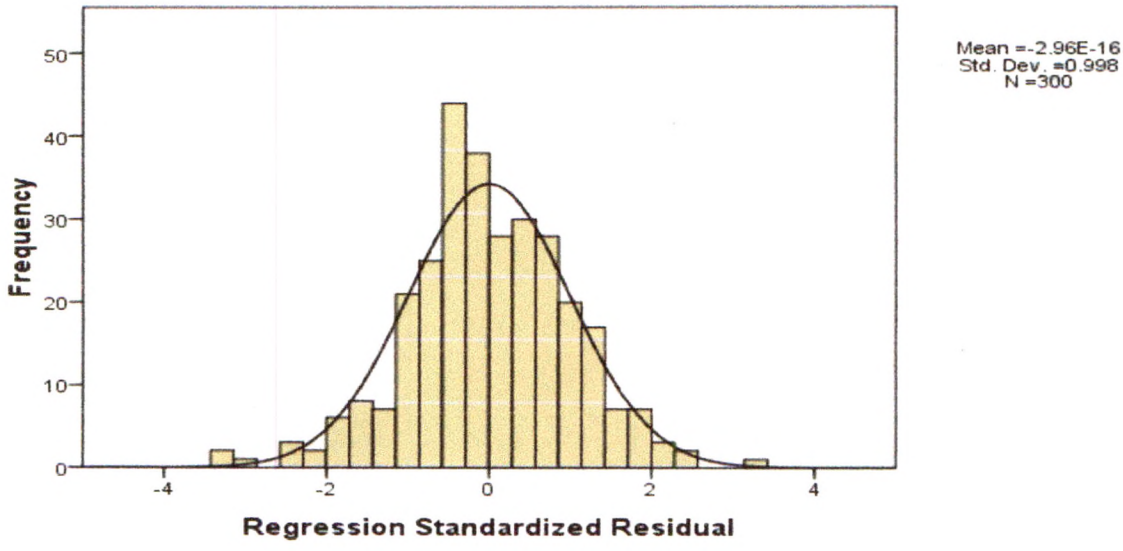
a. Predictors: (Constant), Mobile Banking Services b. Dependent Variable: Level of Effectiveness

TABLE 5.32 COEFFICIENTS[A ON] MOBILE BANKING SERVICES & LEVEL OF EFFECTIVENESS

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	97.219	6.220		15.631	.000
	Mobile Banking Services	4.778	.248	.745	19.285	.000

a. Dependent Variable: Level of Effectiveness

FIGURE 5.7: HISTOGRAM: DEPENDENT VARIABLE: LEVEL OF EFFCETIVENESS



Over all model summary shows the value of multiple correlation coefficient R=0.745, it is the linear correlation coefficient between observed and model predicted values of the dependent variable, Its large value indicates a strong relationship. $R^{2,}$ is the coefficient of determination squared the value of the multiple correlation coefficients. Adjusted R^2=0.554, R^2 change is also 0.555 and these values are significant which shows that overall strength of association is noteworthy. The coefficient of determination R^2 is 0.554; therefore, 55.4% of the variation in Level of Effectiveness is explained by Mobile Banking Services.

ANOVA is used to exhibit model's ability to explain any variation in the dependent variable. ANOVA table exhibits that the hypothesis that all model coefficients are 0 is rejected at 1% as well as 5% level of significance which means that the model coefficients differ significantly from zero. In other words we can say that there exists enough evidence to conclude that slope of population regression line is not zero and hence, Mobile Banking Services are useful as predictor of Level of Effectiveness.

From the table of coefficients, the regression equation can be obtained as

Level of Effectiveness= 97.219 + 4.778* Mobile Banking Services

The normal probability plot is obtained to test the assumption about the normality of residuals and it appears that the residuals are approximately normally distributed. Thus the assumptions for regression analysis appear to be met.

5.4 PERCEPTION OF RESPONDENTS TOWARDS IMPROVING EXISTING MOBILE BANKING SERVICES

H_{08}: There is no significant difference between mean score of respondents and improving existing mobile banking services.

H_{18}: There is a significant difference between mean score of respondents and improving existing mobile banking services.

To test above hypothesis, "there is no significant difference between mean score of respondents towards improving existing mobile banking services. Mean scores were computed for all the items of improving existing mobile banking services. Chi-square value was also computed. The results are summarized in Table.5.33:

TABLE 5.33: DESCRIPTIVE STATISTICS ON IMPROVING EXISTING MOBILE BANKING SERVICES

	N	Mean	Std. Deviation	df	Chi-Square	Sig.
It would have been more effective to allow non-profit organizations also.	300	2.0767	.83253	4	204.633[a]	0.000
All transactions must be done only in India's national currency, the rupee.	300	2.2200	.91344	4	188.433[a]	0.000
Grievances redressed mechanism should be improved	300	2.0967	.85426	4	186.067[a]	0.000
Applying for new products that are not available through Mobile Banking.	300	2.2600	.87652	4	195.800[a]	0.000
An attempt has been made to develop mobile banking applications for as many mobile models as possible	300	2.2567	.93829	4	150.900[a]	0.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 60.0.

Table 5.33 reveals that since P value is less than 0.05 the null hypothesis is rejected at 5 percent level of significance. Hence it is concluded that there is significant relationship between mean scores towards improving existing mobile banking services. Based on mean score 'it would have been more effective to allow non-profit organizations also' (2.0767), 'All transactions must be done only in India's national

currency, the rupee' (2.22), 'Grievances redressal mechanism should be improved' (2.09), 'Applying for new products that are not available through Mobile Banking' (2.26) and 'An attempt has been made to develop mobile banking applications for as many mobile models as possible' (2.25) are the important statements under the factor "improving existing mobile banking services".

The analysis reveals that there is significant difference between the mean scores towards the perception on improving existing mobile banking services. This might be due to the fact that mobile banking services is an important factor of customer satisfaction which is influenced by these five factors mentioned above in the table 5.33.

5.5 RESPONDENTS' PERCEPTION TOWARDS MOBILE BANKING SERVICES COULD BE IMPROVED

H_{09}: There is no significant difference between mean scores of respondents' perception and mobile banking services could be improved.

H_{19}: There is a significant difference between mean scores of respondents' perception and mobile banking services could be improved.

To test above hypothesis, "there is no significant difference between mean scores of respondents' perception towards mobile banking services could be improved. Mean scores were computed for all the items of mobile banking services could be improved. Chi-square value was also computed. The results are summarized in Table.5.34:

TABLE 5.34: DESCRIPTIVE STATISTICS ON MOBILE BANKING SERVICES COULD BE IMPROVED

	N	Mean	Std. Deviation	df	Chi-Square	Sig.
Wide range of services	300	1.0633	.24397	1	228.813[a]	0.000
Improved security	300	1.0733	.26112	1	218.453[a]	0.000
Better education	300	1.0867	.28182	1	206.013[a]	0.000
Better integration of mobile and online services	300	1.0967	.29600	1	195.213[a]	0.000
Improved CRM using mobile data	300	1.1600	.36722	1	138.720[a]	0.000
More marketing support	300	1.2400	.42780	1	81.209[a]	0.000
Cheaper subscription	300	1.1000	.30050	1	192.000[a]	0.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 150.0.

Table 5.34 reveals that since P value is less than 0.05 the null hypothesis is rejected at 5 percent level of significance. Hence it is concluded that there is significant relationship between mean scores towards how mobile banking services could be improved. Based on mean score 'more marketing support' (1.24), 'improving CRM' (1.16), and 'cheaper subscription (1.10) are the most important statements under the factor "how mobile banking services could be improved".

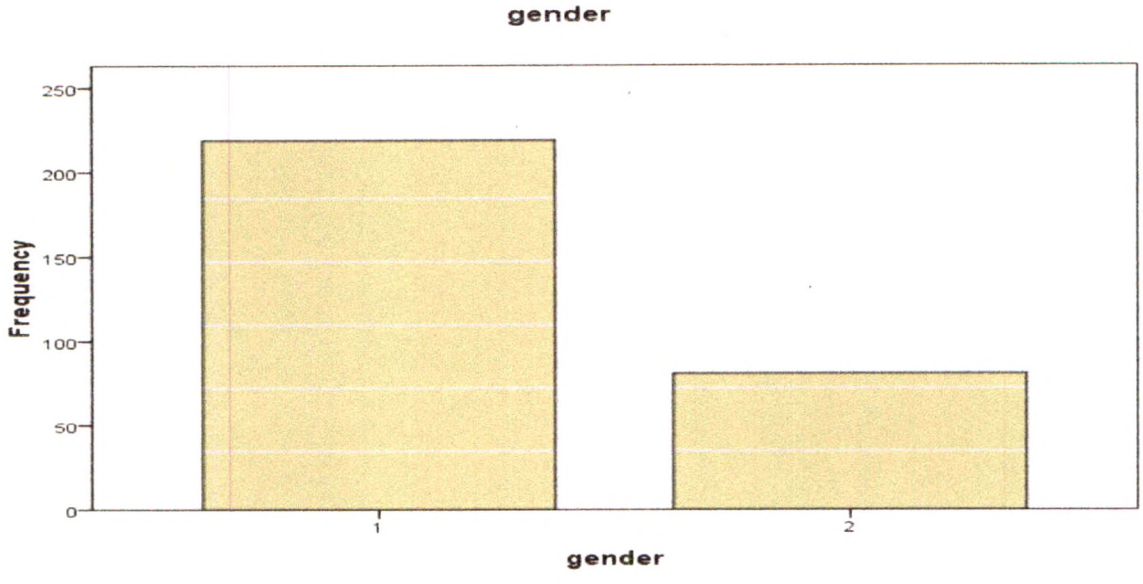
The analysis reveals that there is significant difference between the mean scores towards the perception on how mobile banking services could be improved. This might be due to the fact that mobile banking services is an important factor of customer satisfaction which is influenced by these important factors mentioned above in the table 5.34.

5.6 DESCRIPTIVE ANALYSIS OF DEMOGRAPHIC CHARACTERISTICS

TABLE 5.35: GENDER OF THE RESPONDENTS

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	218	73.0	73.0	73.0
	Female	82	27.0	27.0	100.0
	Total	300	100.0	100.0	

FIGURE 5.8: BAR CHART ON GENDER

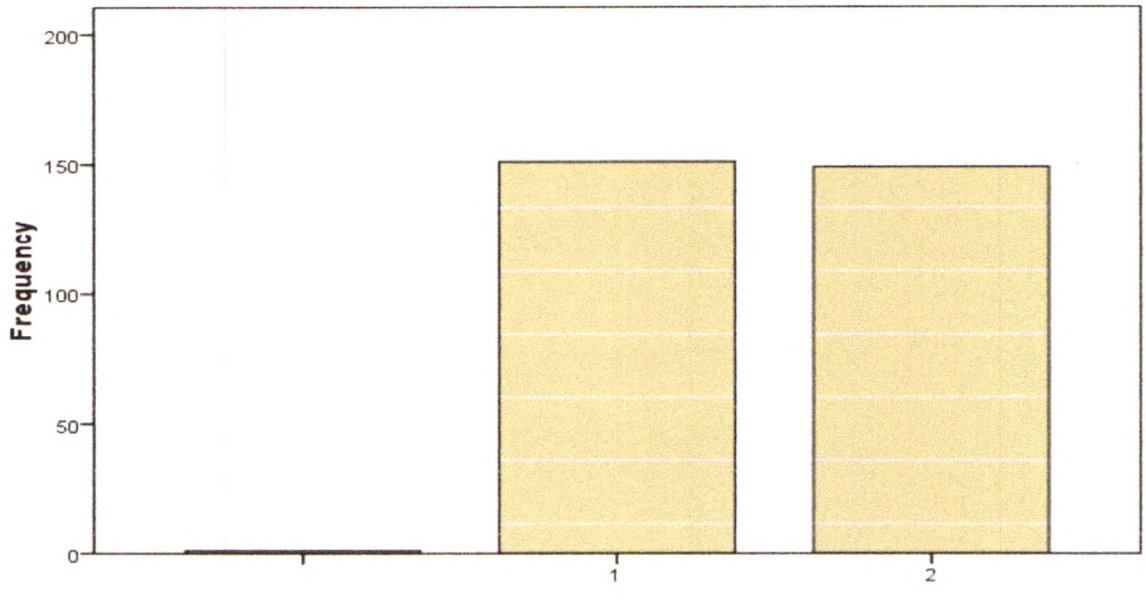


It has been revealed from the analysis of demographic profile of the respondents that out of 300, 73% are males and remaining 27% are females. These are the regular customers who access the mobile banking services. It is also concluded that males are frequently in touch with the mobile banking services compare to females. Generally females are more conscious towards the security, safe transactions etc. Most of the time they avoid to use the m-banking services.

TABLE 5.36: MARITAL STATUS OF RESPONDENTS

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid					
	Bachelor	151	50.5	50.5	50.5
	Married	149	49.5	49.5	100.0
	Total	300	100.0	100.0	

FIGURE 5.9: BAR CHART ON MARITAL STATUS OF RESPONDENTS

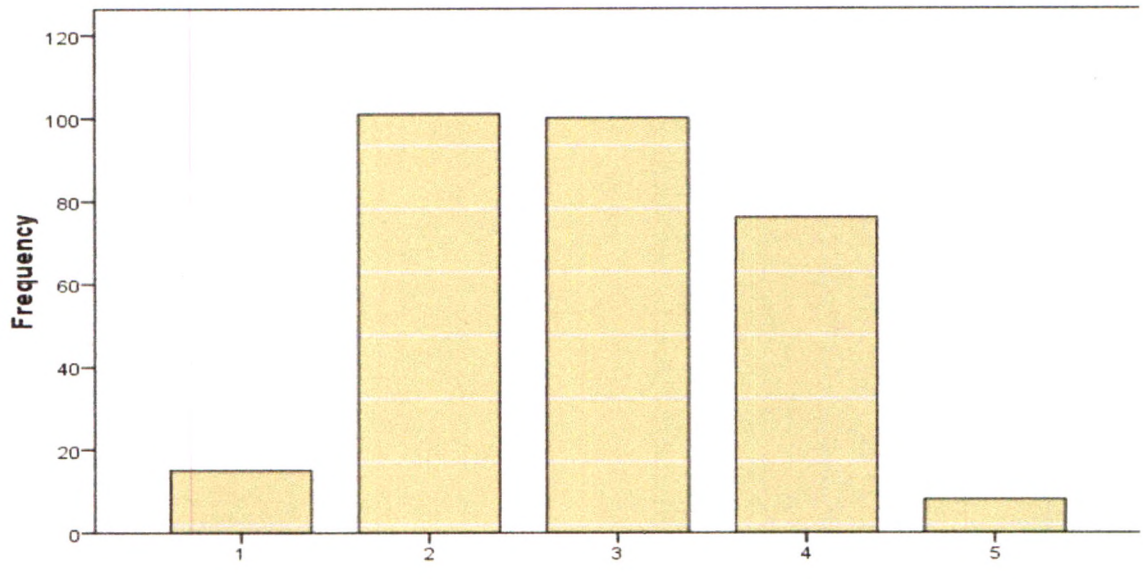


From the analysis, it is evident that 50.5% are bachelor and 49.5% are married, they frequently use the mobile banking services. Both the category are using mobile banking services equally same but their perspectives are different. Married people are using these services for their business and official purpose but in the case of the unmarried they are devoting at least 10 per cent time in passing out. Their motives are not the same. It is concluded that they are more prone to use the mobile banking services for fulfilling their purposes.

TABLE 5.37: AGE GROUP OF RESPONDENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<18	14	5.0	5.0	5.0
	18-24	101	33.7	33.7	38.7
	25-34	100	33.3	33.3	72.0
	35-54	76	25.3	25.3	97.3
	55+	9	2.7	2.7	100.0
	Total	300	100.0	100.0	

FIGURE 5.10: BAR CHART ON AGE GROUP OF RESPONDENTS



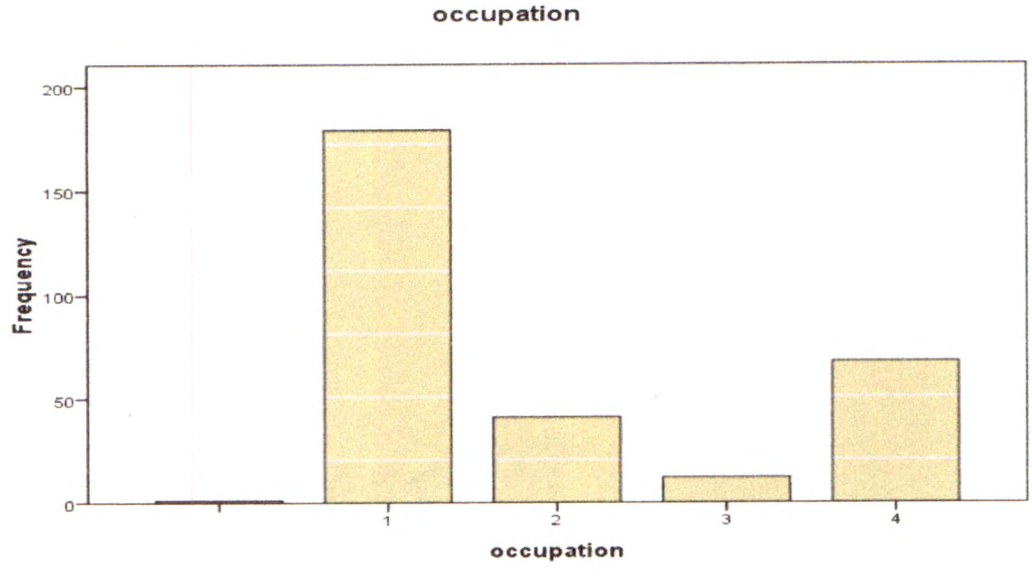
From the above analysis of age group of respondents it has been shown that those who are below 18 years their count is 14, those who are between 18-24, their percent is 33.7,those who are between 25-34 years their percent is 33.3%, between 35-54 years, their percent is 25.3% and remaining 2.7% are more than 55 years. Mobile banking services here are being mostly used by the youth for their entertainment.

TABLE 5.38: OCCUPATION OF RESPONDENTS

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Salaried	179	59.6	59.6	59.8
	Business	41	13.6	13.6	73.4
	Professionals	12	4.0	4.0	77.4
	Others	68	22.6	22.6	100.0
	Total	300	100.0	100.0	

FIGURE 5.11: BAR CHART ON OCCUPATION OF RESPONDENTS



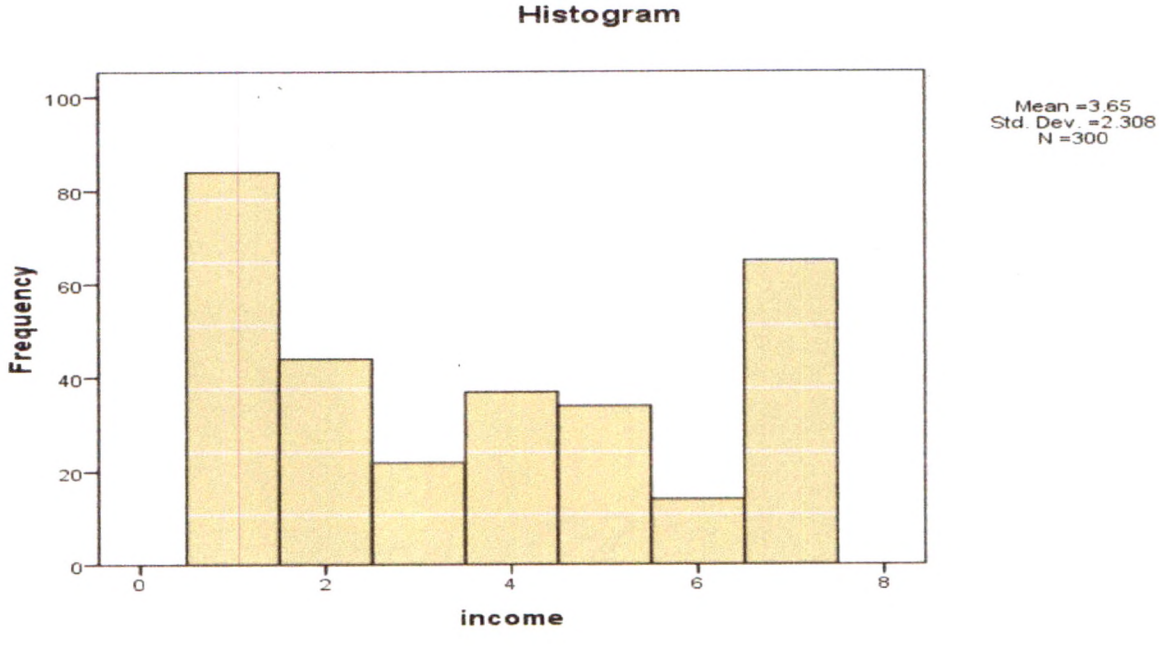
It has been evident from the analysis that out of 300 respondents, 59.6% are salaried, 13.6% are from business class, 4% are professionals and remaining 22.6% belong to other classes. The findings have shown that even the salaried people are using these services frequently because of their cheaper subscription. The percentage of the salaried people in contributing this research as a part of respondents are more compare to the business class.

TABLE 5.39: INCOME OF RESPONDENTS

Income

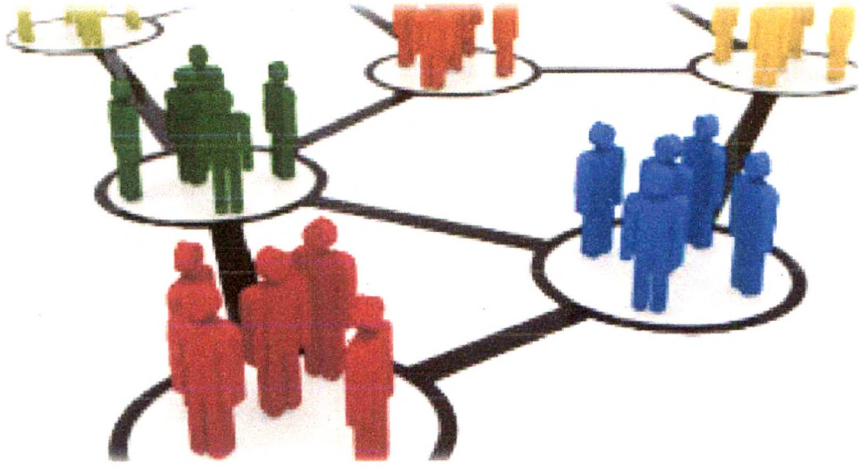
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upto 10000	84	28.0	28.0	28.0
	10000-15000	44	14.7	14.7	42.7
	15000-20000	22	7.3	7.3	50.0
	20000-25000	37	12.3	12.3	62.3
	25000-30000	34	11.3	11.3	73.7
	30000-35000	14	4.7	4.7	78.3
	35000 & above	65	21.7	21.7	100.0
	Total	100.0	100.0	100.0	

FIGURE 5.12: BAR CHART ON INCOME OF RESPONDENTS



From the analysis it has been revealed that 28% respondents have their monthly salary below 10,000, 14.7%have between 10,000-15,000, 7.3% have 15,000-20,000, 12.3% have 20,000-25,000, 11.3% have 25,000-30,000,4.7% have 30,000-35,000 and 21.7% have more than 35,000 monthly salary. It is concluded that even those who are below 10,000 or more than 35,000, they access mobile banking services as they feel more secure and also prone to save the time. The salary may be high or low but these customers frequently use the mobile banking services in their basic needs or occasional needs.

The study is thus conclude, that all the respondents are cooperating in disclosing their information and stated the relevant facts so that proper findings can come out and also beneficial for future researches. These findings are helpful in improving the mobile banking services so that they are able to stay in competitive and growing economy.



Chapter-6

FINDING & DISCUSSION

CHAPTER 6

FINDINGS & DISCUSSION

This chapter sums up all the findings of the study. Data was collected from customers who use mobile banking services offered by the banks. The data collected was analyzed and interpreted in accordance to fulfill the aim of the study which is to examine the effectiveness of the mobile banking services in public and private banks from the customers' perspectives. The analysis was based on various dimensions of service quality and the problems faced by the customers. The respondents using m-banking services have been taken from the selected banks. In order to identify whether the total respondents using m-banking services belong to private or public banks, convenient random sampling method was used.

Demographic breakdown of the sample presents the frequencies and percentages of the respondents which are divided according to gender, age, education, occupation and personal monthly income. The majority of the respondents were male (73%). As for the age distribution, most of the respondents fall between the age group of 18 to 24 years (33.7%). With respect to marital status both married and unmarried are equally contributing and as occupation category is concerned, 59.6 percent of the respondents are salaried and second rank goes to the others who had monthly income which ranges from 10000 to 35000 and above.

To understand the m-banking services provided by the banks, five key service quality dimensions were taken for analysis. These were reliability in transactions, transparency, fast and speedy services, accessibility and strategies related to Customer Relationship Management. Under each of key service quality dimension five point likert scale has been used to evaluate the performance of mobile banking channels with respect to the service quality dimensions. The respondents were asked the effectiveness of the mobile banking services which they are using from private and public sector banks. This implies that banking customers are more familiar with the ATM technology as compared to online banking, mobile banking, credit card and Tele banking.

The results of the study suggest that mobile banking has a bright future. The government has taken steps to build up policy for the local banks to adopt the technology in the near future. Keeping in mind that "Mobile Banking" is a relatively

new concept, it is emphasized that customers do not understand the technology. Therefore, it is crucial at this stage to create awareness about the usage of mobile device and latest technology and familiarize people with its benefits. A key finding of the research is that mobile banking is a critical service in banking industry. Therefore, it can be concluded that it is vital for the banking.

With the help results obtained from the previous chapter 'Data Analysis & Interpretation' this chapter carry out a grand summary of results, which laid the basis for conducting this study. Various tools were applied on the data and significant result was obtained to meet the objectives of the research. Results of the analysis are supported by the appropriate literatures to explain the summarized findings. Thus, this chapter is an attempt to discuss the findings of the study in the light of the available literatures.

The following discussions on nine hypotheses were carried out and the basis of formulation was the determined objectives. In the beginning this study has determined the objectives to identify the attributes of effectiveness of mobile banking services in the Madhya Pradesh. The statistical tools One Way ANOVA, Chi-Square, correlation and regression were applied to test these hypotheses. The findings concluded that there is a positive linear relationship between effectiveness of mobile banking services and the customer satisfaction.

6.1 POTENTIAL EXPLORED FACTORS OF EFFECTIVENESS OF MOBILE BANKING SERVICES.

Mobile banking is an emerging concept and its market potential is expected to be high. However, the diffusion rate is low. To extend the literature on mobile banking and explore the constraints and boundary conditions of this predicament, this study investigated empirically the effectiveness of services of mobile banking. This study has helped in developing a fair understanding about the factors that influence mobile banking services from the perspectives of customers' satisfaction. This study provides valuable insights regarding the future prospects of mobile banking. It was found that usefulness exerted more influence on customers. Bank customers need to be made aware of the advantages of mobile phone banking over other channels, be it physical banking at a branch or ATM. The respondents were not bothered by the complexity of the technology, the mobile compatibility and mobile phone experience.

The study explored five factors of Effectiveness of Mobile Banking Services (Accessibility, facilitation, reliable & secure service, transparency and Customer relations) and determined to measure the linear relationship with customer satisfaction.

The following factors are discussed as per their factor load:

6.1.1 ACCESSIBILITY

This factor is consisted of eight items **(from the table 5.8)** and these are the following predictors followed by easy to access with loading value speedy **(0.875)**, change of Pin, blocking of cards **(0.797),** cheaper subscription **(0.762),** integration of mobile and online services **(0.718),** safety of funds **(0.715)**, habit of saving **(0.617),** Easy to access **(0.594),** convenient **(0.570)**. It helps the customers to understand the technology and easy to access and properly utilize these services for their better convenient. **(21.153% of variance)** has been explained by this factor in effectiveness of the mobile banking services. This factor has come up with a strong indicator to consider that the processes of using mobile banking are very easy and everybody can use it. Most of the people like to use application based mobile banking than the SMS based mobile banking due to various reasons. People do not need any extra skill to use the applications. People just need to install the application in their mobile and they need to enter the PIN to get started with the application.

6.1.2. FACILITATION

This factor is comprised of five items and explained in terms of Reliable transactions with loading value of **(0.773),** ATM location **(0.770),** grievance redressal mechanism **(.686),** Error free alerts **(0.680)** and time saving **(0.674).** This factor explains the total variance **(38.315%)** in safety and security in funds. Facilitation is found to be another important factor for describing about reliable transaction which is a major element in mobile banking. The total number of customers in mobile banking is increasing day by day and to facilitate customer grievance mechanism, error free alerts are given. Every customer wants to save the time and cost. Through mobile banking, one can easily do his/her work rapidly. Every customer can make the payments online, instantaneous and 24*7 basis. Sender and beneficiary are communicated through SMS about successful remittance.

6.1.3 RELIABLE & SECURE SERVICES

Six items are constituted into fast and speedy services with the loading values of Security **(0.816),** Cheaper rate for mobile charging **(0.730)**, Accuracy in maintaining records **(0.676)**, Wide range of services **(0.675)**,Bill payment processing **(0.546)** .This factor explains the variance of **(54.873%).** This factor is considered as the third important factor from the customers' perspectives. The security in financial transactions is executed from a remote location and the transmission of the financial information is done over the air. This is the most complicated challenge which is addressed jointly by the application developers, wireless service providers and the IT department of banks. All of the Indian banks have their own IT department and they are responsible for managing all the IT related activities. There are some stages of mobile security used by the banks. The first thing which is checked by the banks is the physical part of the handheld device. All the banks require authentication of the device with service provider before any transaction is initiated. It helps the financial and banking service providers to fight against cyber fraud. Some extra facilities are offered by the Indian banks in mobile banking. The users of mobile banking can recharge their mobiles through this. They can also pay electricity bills and credit card bills. The customers are highly satisfied with the security measures taken by the banks in mobile banking solutions.

6.1.4 TRANSPARENCY

Two items are constituted into transparency in dealing with customer with the loading values of transparent policies **(0.795)** and Fund transfer **(0.743)** this factor explains the variance of **(64.555%).**factors in this study transparency has been considered a moderating factor in system and information quality's relationship to customer satisfaction. We confirmed Fishbein and Ajzen's (1975)[1] theory of reasoned action, which suggests that cognitive variables (e.g. perceived value and system quality/information quality) are moderated by affective ones (e.g. transparency) to result in cognitive outcomes (e.g. customer satisfaction). Immediate payment service (IMPS) is an instant interbank electronic fund transfer service through mobile phones. Mobile money identifier (MMID) is a 7 digit number issued by bank against an account linked to a mobile number. Remitter & beneficiary should have this MMID &

[1] Fishbein, M. and Ajzen, I.,(1975). "Beliefs, attitude, intention and behavior: an introduction to theory and research". Reading, MA: Addison-Wesley, 1975.

mobile number of the recipient in the mobile banking application. Our findings indicate that transparency can play a crucial intervening role in the relationship between perceived value (system and information quality) and customer satisfaction. To truly understand customer repurchase behaviors', multidimensional models, which consider both cognitive and affective variables, are needed. Thus, the concepts of system quality, information quality and customer satisfaction do not substitute for, but rather complement, each other.

6.1.5 CUSTOMER RELATION

This factor is consisted of two factors mainly with the highest loading values of timely information **(0.841)** and customer support **(0.773)** with the explained variance **(74.219).** Customer Relations is the need of this competitive environment. The traditional conceptualization of customer satisfactions by building trust is successfully applied in the new mobile banking context. In particular, this study shows results that are consistent with existing studies that regard CRM as a moderator. We empirically found that a new system has a significant moderating effect on mobile banking services, as shown in this study. All the information is given to customer timely. Second, the results indicate that customer satisfaction is influenced by a system's quality value and information quality; customer trust plays a crucial moderating role in the relationship between system and information quality, and customer satisfaction.

6.2 FACTORS BASED HYPOTHESIS TESTING RESULT'S DISCUSSION

Most of the customers using mobile banking found it quite efficient. They are able to access to a huge number of mobile banking services. They can check their account information through mini statement and account transaction history. Term deposit is one of the major financial activities done by the Indian people today and it is quite difficult to keep track of the deposits because customers had to visit the branches of bank every month to check the status of their term deposits. With the help of mobile banking, people can check the status of their fixed deposits. Credit Card is a common thing which every Indian has. People can access to the credit card statements and loan statements through mobile banking. Other account information such as insurance policy management, status of check and stop check payment etc can be done through the mobile banking. People can also order for new check books through the mobile banking. There are some banks in India which offers facilities like blocking of cards if lost or stolen in mobile banking. Today, a huge number of people are opting for

mobile banking solutions due to the low cost of using it. Most of the mobile banking users rely on the application based mobile banking system which is entirely dependent on GPRS system.

The current research tried to investigate the influential factors associated with the effectiveness of mobile banking services and to make the effectiveness by facilitation, transparency, customer relation, reliable & secure services and accessibility. Five factors were identified and further their applicability/functionality was tested in the private and public sectors.

Findings revealed a result in the expected direction for the first gender based hypothesis has proven that:

- ***There is no significant difference between gender category and the effectiveness of mobile banking services and its usage.*** The study has found **(F=0.525 from table 5.12)** that male and female perceive the mobile banking services in an equal manner. Irrespective of gender mobile banking services are used frequently and now every person enjoy doing transactions, by downloading different applications on mobile.

- For the hypothesis, ***there is no significant difference between marital status category and the effectiveness of mobile banking services and its usage.***

  The study has found **(F=18.293 from table 5.14)** that differences between married and unmarried respondents for the effectiveness of mobile banking services and its usage. The result revealed that there is a significant difference between married and unmarried. Bachelor is more using the mobile banking services compared to the married. Youth wants to keep themselves update the mobile applications and more aware and curious to know the different applications.

  As married people most of them are working professionals have no time and also they are not able to bear the expenditure on mobile as they have to manage the family. Hence, in order to increase the frequency of using the mobile services by the married, Banks should focus on various discounted schemes so that the burden should be reduced. The minimal service charges should be imposed by the banks in order to maintain the balance between the frequency of using mobile service by both married and unmarried people.

- The next hypothesis ***there is no significant difference among age category and the effectiveness of mobile banking services and its usage*** revealed that among various

age groups there is a difference. The study has found **(F=3.081 from table 5.16)** that those customers who are between 18-24 years their frequency is high in comparison to other groups. Customers are highly satisfied with mobile banking system due to several reasons. The first reason is efficiency and the ease of use. Customers can avail various types of facilities through the mobile banking system. They can check the account history and mini statements, monitor the term deposits, access to the loan statements and card statements, mutual fund statements, insurance policy management, ordering for new check books, checking recent transactions, obtaining due date for payments, blocking of lost cards etc. Customers are also highly satisfied because of the ease of transfer of payments. The customers used to stand a long queue in banks to deposit money to the accounts. Now, they can transfer money from their account to other accounts whenever they want. Apart from that, customers can recharge their mobile phone and they can pay the electricity and mobile bills through this. The security in mobile banking is quite enhanced and the banks have taken a number of security measures to provide secure mobile banking services to their customers. The One-time Password or OTP has been developed by the banks and it is quite effective to provide secure mobile banking transactions. OTP is generated by the banks while the user is initiating any mobile banking transaction and it is developed for one time use only. It expires after one use.

Those who are below 18 years have no access to such services; they are only using these services for checking the transactions or withdrawing the money or transfer the funds in a limited manner as they are the students or doing some part time job or involving their family business. In this case this type of respondents is not in position to explain the effectiveness of mobile banking services. On the other hand those who are above 55 they avail the services in pension, loan statements, real estate investment, EMIs, policies etc. Out of these respondents who are between 25-34 and 35-54, they have their own mode of using the mobile services and in terms of the effectiveness they have agreed and satisfied with the mobile banking services but slightly differ from the mean of those respondents who are between 18-24. The findings suggest to the Banks to encourage the customers through various educational programmers' and also online training so that they can feel comfortable in using the latest technology. The main reason has been identified on the perspectives of the customers that is security and safety in funds so, they should be educated enough and also assured by the banks regarding to provide the security and safety in funds. In that

case all the age group people will definitely avail the mobile banking services without any fear and loss.

- ***There is no significant difference among occupation and the effectiveness of mobile banking services and its usage,*** this hypothesis has revealed that profession is one of the determinants of using the mobile banking services. **(F=5.695 from table 5.18),** business person frequently uses the mobile banking services compared to people having other professions. In commercial transactions, it is a need of the business. The functions are easy to access and there is security in transactions along with getting the feedback regarding their each and every transaction.

  It is evident from the above analysis that in this study the salaried respondents' mean is high because they are associated with the reputed companies' and they are frequently in touch with the mobile banking service. Business people run local business and thus for them there is no such requirement to use these services. Professionals and others have also moderate mean as they frequently need to avail these services but in terms of the effectiveness. After analyzing these findings, banks should focus on the charges charged for commercial transactions so that the business people can use these services in a wide number. The e-documentation should be facilitated among the customers so that they can save their time in filling the forms and applications. This type of strategy should be spread among all the private as well as public banks.

- ***There is no significant difference among Income Groups and the effectiveness of mobile banking services and its usage***, this hypothesis has found **(F=7.499 from table 5.20)** that customers are very conscious about the cost. High adoption rate of mobile banking among Indians is due to the cost effectiveness of using the services. All the banks provide mobile banking services for free to their customers and the cost of GPRS enabled mobile phones are quite low. People do not need to pay huge amount of money to use the GPRS service in their mobile. All these things make the cost of using mobile banking service low. Apart from these features, customers are highly satisfied with the regulatory initiatives taken by the RBI and other banks. The personalization feature in mobile banking also attracts a huge number of customers.

  From the above findings, it can be revealed that the customers who have income between 30000 -35000, use the mobile banking services more often than compared to other income groups. So if banks will start providing services at low price then all the

income group people will get motivated and they might get pushed up to avail these services irrespective of age, gender, profession and education.

- ***There is no significant impact of mobile banking services on customer satisfaction, this hypothesis*** has found **(from the table 5.22)** that the value of correlation coefficient between Mobile Banking Services and Customer Satisfaction is 0.916, and it is significant at 5% level of significance thus, it may be concluded that Mobile Banking Services have significant role in sustaining the Customer Satisfaction. With the help of correlation and regression we found that correlation is very high and have a strong association between these two variables. The study supports the hypothesis that strategic factor has the most significant and strong impact on customer satisfaction. Relative advantage of technology and the degree of service expansion significantly contribute to the factors for the variance.

  The practical implication of mobile banking depicts that there is a positive relationship between organizational factor and customer satisfaction. The findings also indicate that mobile banking adoption requires technologically efficient as well as cheap, reliable and secure technology development. In order to ensure that customers adopt the technology it must be efficient and quick as well as easy to understand and use.

- ***Hypothesis that there is no significant positive relationship between mobile banking services and the level of effectiveness***, it has been inferred **(from the table 5.28)** that the banks are rendering their services effectively to the customers. Coefficient between Mobile Banking Services and Level of Effectiveness is 0.745 which is significant since the significant value (p- value) 0.000 is less than 0.05. Therefore, we may conclude that there is significant association between Mobile Banking Services and Level of Effectiveness. Results show a strong positive relationship between mobile banking services and the level of effectiveness. Furthermore, the effectiveness of mobile banking services is the most contributing factor in bringing change in the dependent variable. The study supports the research finding that service quality and customer satisfaction are very important concepts, which must be understood by companies who would like to grow while keeping competitive edge. In the modern competitive environments, delivering high service quality is the key for a sustainable competitive advantage. Customer satisfaction has a positive effect on an organization's profitability. Satisfied customers of any business go for repeat purchasing, show brand loyalty, and give positive word of mouth. Many models have

been developed to measure service quality delivered by firms in numerous businesses. It is important to review service quality models because of its relation with customer satisfaction. Thus, service quality has become a major area of interest of practitioners, managers and researchers because of its impact on customer satisfaction, customer loyalty, and of course, company profitability.

The banks providing mobile banking services to their customers, wishes to increase the customer share by removing all the above-discussed hurdles. The factors appear to be defined as a mix of items that reflect the problem from supplier side and functionality of a mobile phone as delivery medium for banking services from the customer side. As Internet banking is in its growing stage, mobile banking has emerged as the next advance way of doing banking. Since the pace of technology advancement is matching with the adoption rate, and this widened gap is filled up with suitable measures. This positive effect of accelerating pace of development is manifested in services that are launched at an early stage of development process due to competitiveness and cost pressures. As a consequence, competence of service quality, has reached an adequate level; consumers feel that service-providers are responding to their needs.

- ***The hypothesis there is no significant difference between mean score of respondents and improving existing mobile banking services has proved*** that mobile banking services have improved existing features. This hypothesis comprise of four statements **(from the table 5.33)**. It would have been more effective to allow non-profit organizations to avail these services because it is cost effective and easy to access even for educated or uneducated. It has helped in generating the funds for the social and noble cause. Next statement is concerned with 'Transactions' which must be done only in Indian currency so that it can be easily understood and carried with ease. Third statement is related with 'Grievances redressed mechanism which should be improved' and for that customer care services should be provided to help the customers at any point of time. And this will enhance customer trust on using mobile banking services. Another main feature seems to be is the functionality of a mobile phone as a delivery medium for banking services. These days Mobile phones are designed in such a way so that customer can avail this type of services. For instance, key board is relatively large enough to type, which makes it more prone for eliminating the errors in typing the figures. Results indicate that consumers get

satisfied by the simple functions while accessing the mobile banking services which lead them to the satisfaction level as proper guidance is to be provided to them. The fact is that the factor risk and security are the most considerable significant factors for banking service adoption, and particularly in relation to 'new' electronic environment. The result of perceived risk on the adoption of mobile banking services appears to indicate that consumers are serious about the risk of conducting banking via a wireless channel, measured in terms of overall security and trustworthiness of the services offered. On the basis of the findings, it is suggested that service providers are aware of the problems of their customer base using mobile services. This kind of data has its value when designing new services and products for implementing better market communications. In addition, information gained from experience with Internet banking and other modes of electronic banking are straightforward for implementing mobile banking services. If financial institutions allocate the resources appropriately then the expense on increased competition and other expenses can be lowered. The last statements were 'Applying for new products that are not available through Mobile Banking' and 'An attempt has been made to develop mobile banking applications for as many mobile models as possible'. Now the companies are emerging with new and simple functions and entering into the market with low margin.

- ***This hypothesis has proven that there is no significant difference between mean scores of respondents' perception and mobile banking services which could be improved*** with the help of chi-square **(from the table 5.34)** we found that respondents agreed that continuously companies are improving the services as per the expectations of the customers. The present study has been used to find out customer's perception towards mobile banking service quality. The article concludes that increase in service quality of the mobile banking can satisfy and develop customer satisfaction that will ultimately help in retaining customers. This study is also in accordance with the result of previous research. Ravichandran et al. (2010)[2] examined influence of service quality on customer satisfaction in banking industry. In addition, it is observed from the findings that there is a relation between customer satisfaction in online banking service with tangibility, reliability, responsiveness and empathy. Various researchers

[2] Ravichandran, K., Prabhakaran, S. and Kumar, A. S. (2010). "Application of SERVQUAL Model on Measuring Service Quality: A Bayesian Approach. Enterprise Risk Management", 1 (1), pp. 145-169.

have proposed that responsiveness, assurance, security, easy to use are the factors affecting the customer satisfaction in E- banking. And thus mobile banking services and customer satisfaction is studied in this research too. Their results showcased that there is average level of customer satisfaction. In addition, they proposed that customers prefer using ATM than going to the bank for any transactions. Lee et al. (2011)[3] showed that the following factors (personal, innovativeness, task-fit, connectivity, absorptive capacity and monetary value) affect customer intention to use mobile banking services. The results of Gu et al. (2009)[4] indicated the key determinants of behavioral intention in mobile banking as perceived usefulness, trust and perceived ease-of-use. Laforet and Li (2009)[5] identified the main barriers to mobile banking as well as the lack of awareness and understanding of the benefits.
It is suggested that banker advertising should focus on the novel aspect for mobile banking. Bankers should also consider raising consumer awareness and acceptance of new technology-based banking services more, through advertising and promotion rather than word-of-mouth communication. Willingness of customers to use electronic banking services has increased when access to modern banking is made more easy and secure.

Further, the study continued to explain in details about the long-term vision for banking system which is to transform itself from branch banking to IT enabled banking level which may sound far-fetched at present. If banking is to be raised at domestic and international level then competitiveness, availability of financial services on time, cost reduction to financial service, giving customer satisfaction, extending services to unbanked centers and low income groups should be merged with the combination of new advanced technologies. For that reason, banking sector of India find M-Banking service as a new era in electronic banking. But, the success of M-Banking not only depends on its special service channels, but also depends on the content of financial services offered. Now-a-days, development of the economy

[3] Lee, M.-C. (2011). "Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit" Electronic Commerce Research, 8(3), 130-41.

[4] Gu J.C, S. C. Lee, and Y. H. Suh,(2009), "Determinants of behavioral intention to mobile banking, Expert Systems with Applications, vol. 36, no. 9, pp. 11605-11616.

[5] Laforet, S., & Li, X. (2009). "Consumers' attitudes towards online and mobile banking in China". International Journal of Bank Marketing, 362-380.

and people's living conditions and other economic activities need the banks to provide a full range of financial services through M-Banking.

The above research work reports the fast growth of M-Banking technology enabled financial information service in the banking sector of India in terms of their volume and value of M-Banking transaction. Moreover, greater level of technical infrastructure of the banks, intention to check fraud related issues, reduce cost of banking services, customer education, reduce crowd at the bank branches, reduce number of employees in the branch level, develop customer's trust etc. are the major adopting factors of M-Banking by the bankers. Most of the adopting factors of M-Banking do not differ between public and private sector banks in India. Most of the customers have medium level acceptance of M-Banking among the various groups of sex, age, education, occupation, family income, years of usage of mobile phone and frequency of visit to the bank branch. In India, The highest percent of the private bank customers have high level acceptance of M-Banking than the public sector bank customers.

The cell phone usage has exploded in the last decade. Cell phones offer great opportunities for services such as banking to reach critical mass, as compared to other options such as the Internet or landline phone. Recognizing this, the major retail banks offer mobile banking services. Mobile banking is an emerging concept and its market potential is expected to be high.

Nevertheless, the market for mobile banking should not be underestimated. There is good potential for mobile banking services since mobile banking adoption is not far behind the use of mobile in India where there are 55.48 crore mobile users (as per India Mobile Landscape (IML) 2013 study). This study has helped in developing a fair understanding about the factors that influence mobile banking adoption from the perspectives of both users and non-users. This study provides valuable insights regarding the future prospects of mobile banking. It was found that usefulness exerted more influence in discriminating between a mobile banking user and non-user. Risk perception was found to be the major impediment to mobile phone banking adoption. Bank customers need to be made aware of the advantages of mobile phone banking over other channels, be it physical banking at a branch or ATM. The respondents were not bothered by the complexity of the technology, the mobile compatibility and mobile phone experience. Banks should put in more efforts to increase Mobile

banking adoption by educating the customers about its benefits. This should be done bearing in mind the fact that information and guidance could significantly increase the perceived value added provided by mobile banking and decrease the perceived risks associated with innovation. Proper training of customers, promotional activities, demos, opportunity to trail, and test mobile phone banking would go a long way in making the customers to gravitate towards mobile phone banking. The size of the sample taken is not sufficiently large so as to generalize the results of this study. Also, the study was limited to the respondents using mobile banking services in a specified location; therefore, a larger sample covering a wider geographical area need to be conducted to inculcate generalization in the results. Despite the limitations, the study provides fresh valuable insights towards mobile banking services.

Chapter-7

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

CHAPTER 7

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Technology in the banks is presently catching up with a high level of development around the world. The gaps between the Indian banks and their counterparts in the technologically advanced countries are gradually narrowing down (Kalavathy, 2005)[1]. The world has witnessed an information and technological revolution of late. This revolution has touched every aspect of public life including banking sector. Since past two decades, due to highly competitive, saturated and dynamic business environment, retail banks in many countries have adopted customer-driven philosophies to address the rapid and changing needs of their customers (Walker et al., 2008).[2]

Technological advances have changed the world radically, altering the manner in which individuals conduct their personal and business affairs. Over the past two decades in particular, the banking industry has invested substantial resources in bringing ICT to customers. The banking industry is undergoing through the significant technological changes; it has several impacts on customer satisfaction and loyalty. "It has revolutionized every industry including banking in the world by rendering faster and cost effective delivery of products and services to the customers. Technology is the surest and most appropriate way of bringing inclusion in respect of any product and/or service. The banking industry is a large and highly diverse service industry than other services. This banking sector covers all types of customers and their financial needs including deposit, lending and other banking services. It also makes a significant contribution in the economic development of the nation. Recent world wide technological revolution influenced the banking industry than other service sector in India. Since 1980, Indian banking sector undergoing through technological advancement phase and most of the banks have countered their business as e-business.

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[1] Kalavathy, (2005) "Mobile Banking: The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector," Research project, University of Hamburg, Germany.

[2] Walker et al., (2008) "Customer Satisfaction and Competencies: An Econometric study of An Italian Bank," Master thesis, Dipartmento di Economia Aziendale and Dipartmento di Scienze Economiche H.P. Minsky, Universita degli Studi di Bergamo, Italy.

Measuring customer satisfaction has a great potential to provide the managers of retail banks with information about their actual performance of the bank and the expectations of their customers. For a service provider customer satisfaction is an important issue. There may not be an ultimate goal in itself rather; it is a means for yielding greater profits; even satisfied customer is also as another type of profit. Therefore, assessment of customer satisfaction and factors influencing satisfaction should be examined the effectiveness of mobile services in the banking sector.

The present research attempts to measure the overall effectiveness of mobile banking services with regards to customer satisfaction. Mobile-based banking is the next frontier for banking in India. The rapidly growing users and wide variety of mobile phone network service providers have made this channel an important platform for extending banking services to customers. Moreover, banks are using these mobile phones companies as an alternative channel of delivery of banking services.

This research finds out that to retain existing customers and to attract new customers, banks are trying to make customers satisfied with their high quality banking services. As it has already been discussed by many researchers and the same has been identified in this research that service quality is one of the critical success factors that influence the competitiveness of an organization. Moreover, Mobile banking service quality is a significant factor to enhance a bank's reputation, improve its customer retention, attract new customers and increase its financial performance and profitability. Hence, effectiveness of mobile banking services is a key factor to satisfy customers and it is also a very important dimension for comparing mobile banking services provided by the banks.

In order to study the effectiveness of mobile banking services and its impact on customer satisfaction for the public and the private banks, a questionnaire survey was conducted on the sample of mobile banking customers. The study has suggested that reliable & secure services, accessibility, facilitation, customer relations and transparency are predictors for the effectiveness of mobile banking services. This research also confirms an association between mobile banking services and the customer satisfaction with regard to the cost effectiveness, security, reliability, speedy and trust in transactions. According to Chakrawarty (2010)[3] technology must be

[3] Chakrabarty, (2010) "Predicting young consumers' take up of mobile banking services," International Journal of Bank Marketing, vol. 28, no. 5, pp. 410-432,

implemented in the banking industry with the customer in focus and enable customer facilitation in terms of cost, time, easiness and convenience. It should be dovetailed to customer needs and expectations towards banking and financial services and it should be more customer-friendly rather than employee friendly.

The mobile banking applications are available in preferred languages. People can choose their preferred language and mentioned during installation of application. They can change the time and date format when required. The amount format can also be changed as per the preferences. Customers can add as many beneficiaries in the list as they want. It saves huge amount of time which is incurred to add the beneficiary again and again. Customers can set the time of transaction in the mobile banking applications provided by various banks in India.

The number of customers using mobile banking in India is increasing day by day and new customers who are opening their accounts in the public sector banks as well as private sector banks also opt for mobile banking system while applying for their new accounts. Banks are given one time approval to commence the mobile banking based on the criteria set by RBI. 52 banks have been approved by Reserve Bank of India to commence mobile banking system.

There have been a number of advantages of mobile banking and these advantages led to the increase in the number of mobile banking customers today. Almost all the private and public sector banks provide mobile banking facility to their customers for free of cost. Customers are highly satisfied with mobile banking system due to several reasons. The first reason is efficiency and the ease of use. Customers can also avail various types of facilities through the mobile banking system. They can check the account history and mini statements monitor the term deposits, access to the loan statements and card statements, mutual fund.

The research also finds some important points which have been highlighted. It includes:

- Banks should create awareness about the mobile banking services through Advertisements, Pamphlets,
- Demo Fares, Campaigning etc. so that the customer feel informed and it may create interest among them.

This research also finds that the footfalls at ATM centers is likely to be very high, the campaigns may be carried out at these locations to attract more customers towards these services. The same has been identified by S.Samudra and Phadtare (2012)[4].

- Trust is also an important point of concern. Trust between the customers and the service provider is very important, without security and privacy users will not use mobile for financial transactions.
- Perceived ease of use and perceived usefulness are found to be important factors to influence the consumer intention to adopt mobile banking. Hence, the main attention of management should be focused on the development of usefulness of system, trust building and cost reduction.
- Perceived cost is also an important factor; therefore, this study suggests that the creative promotional and pricing strategies, including cost reduction should be implemented to attract more price-conscious customers.
- It is also found that customers will adopt mobile banking if they find it easy to use and understand.

The results of this research also suggest that the customers of banks feel that the mobile banking services provided by their banks are more reliable. Thus, both public and private banks mobile services are reliable as they provide accurate record of transaction, also provides confirmation of transaction with SMS or e-mail. For public and private banks mobile banking services has positive effect on customers' satisfaction. The services are effectively contributing towards mobile banking.

7.1 BENEFITS OF MOBILE BANKING TO CUSTOMERS AND TO BANKERS

To customers:

- Customers need not stand in the bank counters/front offices for various enquiries about his account.
- Customer can save his valuable time in banking transactions and save in travel cost reaching the bank branch etc.
- It is a mobile banking to have information of all the 365 days at anytime anywhere about his account.
- Customer can pay his utility bills in time and save paying penalties, since alerts are received from the bank.

[4] Samudra, M. S., &Phadtare, M. (2012). "Factors Influencing the Adoption of Mobile Banking with Special Reference to Pune City". ASCI Journal of Management, 51-65.

- Cheque book requests can be made sitting in his work place.

To Bankers:

- M-banking helps banks in saving cores of rupees by way of reduced transaction costs.
- Govt. incurs a cost of Rs. 12- 13 for every Rs.100 Mobile banking helps it reduce the cost to a mere Rs.2.
- Banks can utilize the time saved for expansion of business, marketing and sales activities by channel migration of customers to mobile banking.
- Banks can take advantage of profits by way of commission for cellular companies by selling prepaid talk time through ATMs.
- Banks providing mobile banking service can have competitive advantage on those banks, which are not providing this service.
- In the end mobile banking not only helps a bank to reduce costs but also helps it to retain its valuable customers. And as far as customers are concerned, this facility enables the customer to bank anywhere, at anytime and in any condition, definitely a boon if a customer is stuck in the middle of nowhere and requires banking services as soon as possible Thus mobile banking helps both, the customer as well as the bank, to lighten the burden of today's world and to save time, money and energy which is greatly required and appreciated.

7.2 CHALLENGES FOR A MOBILE BANKING SOLUTION

Key challenges in developing a sophisticated mobile banking application are:

- **Interoperability**

There is a lack of common technology standards for mobile banking. Many protocols are being used for mobile banking – HTML, WAP, SOAP, XML to name a few. It would be a wise idea for the vendor to develop a mobile banking application that can connect multiple banks. It would require either the application to support multiple protocols or use of a common and widely acceptable set of protocols for data exchange. There are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking solution on any type of device. Some of these devices support J2ME and others support WAP browser or only SMS.

Overcoming interoperability issues however have been localized, with countries like India using portals like R-World to enable the limitations of low end java based

phones, while focus on areas such as South Africa have defaulted to the USSD as a basis of communication achievable with any phone.

The desire for interoperability is largely dependent on the banks themselves, where java enabled applications are of better security, easier to use and offer development of more complex transactions similar to that of internet banking while SMS can provide the basics but becomes a hassle to operate with more difficult transactions.

- **Security**

Security of financial transaction, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the bank's IT department. The following aspects need to be addressed to offer a secure infrastructure for financial transaction over wireless network:

- Physical security of the hand-held device. If the bank is offering smart-card based security, the physical security of the device is more important.
- Security of the thick-client application running on the device. In case the device is stolen, the hacker should require ID/Password to access the application.
- Authentication of the device with service provider before initiating a transaction. This would ensure that unauthorized devices are not connected to perform financial transactions.
- User ID / Password authentication of bank's customer.
- Encryption of the data being transmitted over the air.
- Encryption of the data that will be stored in device for later / off-line analysis by the customer.

- **Scalability & Reliability**

Another challenge for the banks is to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With mobile banking, the customer may be sitting in any part of the world (a true anytime, anywhere banking) and hence banks need to ensure that the systems are up and running in a true 24 x 7 fashion. As customers will find mobile banking more and more useful, their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence.

- **Application distribution**

Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to a web site for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades and updates and download necessary patches. However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components.

- **Personalization**

It would be expected from the mobile application to support personalization such as:

- Preferred Language
- Date / Time format
- Amount format
- Default transactions
- Standard Beneficiary list
- Alerts

These are a few of the most probable challenges that a banking organization or company will face while newly introducing the mobile banking system into its business processes. However, a bank should see past all the difficulties and drawbacks in the mobile banking system as every aspect of today's world has some negative quality incorporated in it as every coin as two sides and so on. The main point that such a bank should focus on is the benefit such a system has in the future and how such a system will help the bank to further increase its customer base and increase its business in the future to come of the bank.

For the time being these challenges, and many more which may arise and pose a threat to the adoption of mobile banking and its success, is not to be considered as a real drawback because for every problem or hindrance which may occur in mobile banking, there is a solution and such solutions are being devised, formulated and solved by professionals and experts who do what they do best and that is consult and find the most logical solution for that problem.

For Example, an information security company NSS MSC Sdn Bhd has devised a suitable solution for mobile banking fraud. The main headache, which was caused by this fraud, for the banks were that the instructions regarding what has to be done by

them which was told by the account holder, via mobile banking services, would fall into the wrong hands and lead to illegal transactions or, even worse, identity theft.

For this reason, NSS MSC had devised a way to encrypt the message sent by the account holder to the bank. Only the account holders' bank could read the encrypted message and the bank could carry on its duties as instructed by the account holder without the worry or hassle of fraud or information falling into the wrong hands. Therefore, in future all problems and dead ends of mobile banking will be taken care of which will pave the way for the ascension of mobile banking services throughout all parts of the world.

7.3 SUGGESTIONS & RECOMMENDATIONS OF THE STUDY

Cut throat competition and highly stressed profits have introduced the new marketing practices in the Indian Banking Sector and has also brought the customer satisfaction to the centre of the focus. It has become very important for the banks to retain their existing customer base as well as to enlarge the same. As the number of banks is increasing, customer expectation of service quality is growing. Product differentiation is impossible in a competitive environment like the banking industry. Banks are delivering the same products. Thus, bank management tends to differentiate their firm from competitors through service quality only. Service quality is an imperative element impacting customers' satisfaction level in the banking industry.

A study also confirms that a satisfied customer is six times more likely to repurchase a product and share his experience with five or six other people (Gronroos, 2000).[5] Similarly unsatisfied customers can also banish the business. This research also suggests a strong and positive relationship between mobile banking services and customer satisfaction in public and private sector banks. But this research did not find the strength of the relationship between two. So the future research can also find out this in Indian context.

This study also concluded that mobile banking services are predicted through five dimensions namely; accessibility, facilitation, reliable & secure services, transparency

[5] Gronroos, C. (2000), "A service quality model and its marketing implications", European Journal Marketing, vol. 18 no.4, p 36-44.

and customer relations. There are few generalized suggestions for effective implementation of mobile banking services are:

The study is also relevant in the light of the recommendations of several committees constituted by Government of India need to design effective customer service system so as to compete effectively in the liberalized market.

- Considering the substantial subscriber base of mobile phone users in India, M-Banking has great potential as the electronic banking channel of the future. Therefore, all the banks should implement M-Banking based financial information system including co-operative and Regional Rural Banks.
- Government participation in ensuring focused telecommunication industry must be visible to reduce or remove avoidable costs of implementing M-Banking.
- The banks have to encourage the existing users of M-Banking to use this service more frequently through rewarding customers such as reduced service charges, because it gives more growth.
- There is a need to promote the usage of its value.
- There is a need to promote the usage of its value-added financial services among the various banks of public, private and foreign sector.
- Banks will have to become more customers-centric, offering a wide range of financial products through M-Banking that would bring financial inclusion.
- The acceptance level of M-Banking is found to be moderate among the various groups of the customers in the public and private sector banks. They have to put extra efforts in popularizing m-banking services amongst their customers. So, Banks should take proper steps to organize more seminars, workshops, and other awareness programs in order to create awareness in the minds of the customers regarding the M-Banking.
- Non-Government Organizations (NGOs) should engage in public education campaigns to encourage exercise of M-Banking.
- The Medias can be asked to give attractive advertisement regarding M-Banking and its benefits.
- The public and private sector banks should encourage all the customers to use M-Banking.
- Public sector banks should take steps to implement M-Banking to lower income group of customers and unbanked centers.

- Banks could conduct frequent customer education towards M-Banking in order to create more awareness.
- Sufficient guidance is not available is the reason for non-usage of M-Banking. So, the bank employees and usage customer segmentation should involve themselves in guiding their customers and friends, relatives etc respectively.
- The customers agreed that reasons for non-usage of M-Banking services apart from high risk, possibility of errors. To overcome these factors, the banks can assure the customers regarding the latest technology employed by them.
- The banks need to ensure that their M-Banking systems are well secured, reliable and user-friendly, and need to promote and familiarize their customers about the M-Banking.
- The banks must confirm secure financial transactions through recent technological advancements under M-Banking. It creates confidentiality, date integrity, non-disputable to ensure customer acceptance.
- Banks could execute user interactive software under M-Banking system.
- Banks could provide financial services to the customers based on their regional language under M-Banking.
- All the banks should offer the financial services with same performing mobile functions with the same model.

In conclusion, author develop fair understanding of the impact of these dimensions on customer satisfaction and mobile banking services can help the managers of banks to formulate proper strategies to instill customer confidence. Hence, in order to satisfy the mobile banking users of public and private banks, it is recommended that, policy makers and bank management must focus their attention on the mobile banking services identified in the study which are: accessibility, facilitation, reliable & secure services, and transparency and customer relations.

Overall, it is recommended that bank management should assure that mobile technology must become an integral part of the business. Management need to increasingly seek to use mobile technology in innovative ways in order to gain a competitive age and drive business growth while building greater trust with customers by adopting proactive rather than reactive approach. As mobile devices are transferring power to individual ad becoming the key to successful systems of direct engagement with customers, management should hire a chief mobility officer to

create mobile engagement guide and develop a mobile app architecture blueprint for banks.

7.4 IMPLICATIONS OF THE STUDY

According to the research findings, certain areas are identified as the most critical while adopting a new technology. These identified areas must be thoroughly considered by the banks, especially in financial environment to increase their customer base.

- Reduction of risk related to day-to-day transactions performed through mobile device enables customers to build up trust in the banking services being offered.
- The degree of service expansion done by the bank periodically motivates customers to adopt the technology, as it offers versatility in its offerings.
- Sophisticated technical infrastructure should be developed in order to ensure reliable and timely provision of services to customers.

7.5 LIMITATIONS & DIRECTIONS FOR FUTURE STUDY

Every research has its limitations. In designing the study the researcher attempted to be as scientific possible, the present study nevertheless has some limitations.

- First, the limitation concerns the nature of the measures used. The measures included in this research were all based upon the literature review of technology enabled service quality participating different mobile banking customers from public and private banks. Therefore, the potential for data inaccuracies due to item misinterpretation or predisposition to certain responses on the part of the participant does exist.
- Second, this study has covered the mobile banking customers of public and private banks but the foreign banks were excluded from the study. Future research work can be extended by comparing mobile banking services provided by the foreign banks also.
- Third, the current study has chosen the sample size of 300 customers on the basis of random sampling. Future research may use a bigger sample size to find out more accurate results about mobile banking services and customer satisfaction.
- Forth, apart from effectiveness of services and customer satisfaction there are number of other variables which may be considered in future research such as; IT, customer loyalty, trust, experimentation, etc. on which banking sector rests.

- Fifth, due to rapidly changing technology every time there is need to incorporate new paradigms so it is difficult for the researcher to concentrate on dynamic nature of the findings and results.
- Sixth, as this study has some financial restrictions for carrying this concrete result to be heighted and also for giving the practical shape, it needs some funds to be formulated for the study.
- Seventh, this study started 4-5 years back from now so there may be some significant change in the technology which needs to be integrated in the future research.
- Eighth, this study has left some scope for other researchers for exploring new concepts on IT services in various sectors.
- Ninth, due to restrictions of time, money, it is not possible to cover all the parts of India so sample has taken from the M.P region.

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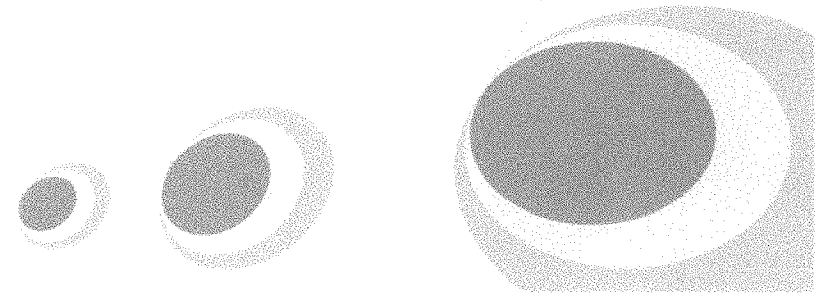
APPENDIX



Confidential when filled. /Part of PhD research program.

"A Study of Effectiveness of Mobile Banking Services with reference to its usage and customer satisfaction in M.P. Region"

1. This questionnaire is just for academic research purpose.
2. All the data and name would not be disclosed, but the analysis.
3. Please fill the form as you are using mobile banking services.
4. Write NA, if question is not applicable to you.

1) SECTION - A

S. No	Statements	Strongly agree	agree	Neutral	disagree	Strongly disagree
1.	Mobile banking is reliable enough for transactions.					
2.	Mobile banking services is an efficient way to manage time					
3.	It is easy to learn to use the mobile payment system.					
4.	It is easy to pay through mobile phone than ATM or other channels.					
5.	You have easy access to mobile banking in your area.					
6.	Overall satisfaction level about Mobile Banking.					
7.	Mobilebanking would make banking more convenient for customer.					
8.	Mobile Banking would be useful in conducting banking transactions.					
9.	MB would enable me to conduct banking transactions more quickly.					
10.	It is easy to usemobile banking service and does not require the customer to call the contact center for help regarding the same service.					
11.	In order to increase security, mobile banking services should be conducted through special software that is downloaded from the mobile operator / bank and not just through a web browser or SMS.					

2) Which are the mobile banking services your bank provides you?* (Please tick)

S.No	Services	Yes	No
1.	Mini-statements and checking of account history		
2.	Balance checking in the account		
3.	Recent transactions		
4.	Bill payment processing		
5.	Mobile recharging		
6.	Domestic and international fund transfers		
7.	Check (cheque) book and card requests		
8.	Status on cheque, stop payment on cheque		
9.	Ordering cheque books		
10.	Due date of payment (functionality for stop, change and deleting of payments)		
11.	PIN provision, Change of PIN, Blocking of (lost, stolen) cards		
12	Commercial payment processing		
13.	Withdrawal at banking agent		
14.	Deposit at banking agent		
15.	Access to loan statements		
16.	Access to card statements		
17.	Mutual funds / equity statements		
18.	Insurance policy management		
19.	Real-time stock quotes		
20.	ATM Location		

3) Rate the services which you use the most? 5 star for maximum and 1 for minimum, 0 for not applicable*(Please tick)

	Services	Rank
1.	Mini-statements and checking of account history	
2.	Balance checking in the account	
3.	Recent transactions	
4.	Bill payment processing	
5.	Mobile recharging	
6.	Domestic and international fund transfers	
7.	Check (cheque) book and card requests	
8.	Status on cheque, stop payment on cheque	
9.	Ordering cheque books	
10.	Due date of payment (functionality for stop, change and deleting of payments)	
11.	PIN provision, Change of PIN, Blocking of (lost, stolen) cards	
12	Commercial payment processing	

	Services	Rank
13.	Withdrawal at banking agent	
14.	Deposit at banking agent	
15.	Access to loan statements	
16.	Access to card statements	
17.	Mutual funds / equity statements	
18.	Insurance policy management	
19.	Real-time stock quotes	
20.	ATM Location	

4) How much are you satisfied with these mobile banking services?* (Please tick)

		Strongly agree	agree	Neutral	Disagree	Strongly Disagree
1.	Mini-statements and checking of account history					
2.	Balance checking in the account					
3.	Recent transactions					
4.	Bill payment processing					
5.	Mobile recharging					
6.	Domestic and international fund transfers					
7.	Check (cheque) book and card requests					
8.	Status on cheque, stop payment on cheque					
9.	Ordering cheque books					
10.	Due date of payment (functionality for stop, change and deleting of payments)					
11.	PIN provision, Change of PIN, Blocking of (lost, stolen) cards					
12	Commercial payment processing					
13.	Withdrawal at banking agent					
14.	Deposit at banking agent					
15.	Access to loan statements					
16.	Access to card statements					
17.	Mutual funds / equity statements					
18.	Insurance policy management					
19.	Real-time stock quotes					
20.	ATM Location					

5) To what extent do you agree or disagree with the statements about improving existing mobile banking services?

S. No	Statements	Strongly agree	agree	Neutral	Disagree	Strongly Disagree
1.	It would have been more effective to allow non-profit organizations also.					
2.	All transactions must be done only in India's national currency, the rupee.					
3.	Grievances redressal mechanism should be improved.					
4.	Applying for new products that are not available through Mobile Banking.					
5.	An attempt has been made to develop mobile banking applications for as many mobile models as possible.					

6) in what ways do you think that mobile banking services could be improved?* (Please tick)

		Yes	No
1.	Wide range of services		
2.	Improved security		
3.	Better education		
4.	Better integration of mobile and online services		
5.	Improved CRM using mobile data		
6.	More marketing support		
7.	Cheaper subscription		

7) To what extent do you agree or disagree with the statements abouteffectiveness of the services provided by banks.

S.No	Statements	Strongly agree	agree	Neutral	Disagree	Strongly Disagree
1.	When bank promises to do something by a certain time, it does so.					
2.	When you have a problem, regarding mobile banking shows a special interest in solving it.					
3.	Bank provides contracts with clear terms.					
4.	Bank issues error free alerts.					
5.	Bank performs the service right the first time.					
6.	You are exactly informed when services will be performed.					
7.	Employees in the bank are always willing to help you.					
8.	You feel safe in your transactions with the mobile banking system.					
9.	Employees in the bank have the knowledge to answer to your questions.					

SECTION – B

1) Name of the customer (optional):-

_____

2) Gender: - Male ☐ Female ☐

3) Marital Status: - 1.Bachelor / 2. Married

4) City: - _____

5) Email Id & contact No:-

6) Occupation: - _____

7) Age group*

Under 18: _____ 18-24: _____ 25-34: _____ 35-54: _____ 55+: _____

8) Income per month (in Rupees)

(a) Up to 10000 ☐ (b) 10000-15000 ☐

(c) 15000-20000 ☐ (d) 20000-25000 ☐

(e) 25000-30000 ☐ (f) 30000-35000 ☐

(g) 35000 and Above ☐

9) Name the **bank/s& Branch** in which you have an account?*

_____

10) Please specify the **sector of the bank.**

(a) Public ☐ (b) Private ☐ (c) Both ☐

11) Please tick () the average amount of total transaction made by using mobile banking Per month.

(a) Less than 1000 ☐ (b) 1000-2500 ☐ (c) 2500-5000 ☐

(d) 5000-7500 ☐ (e) 7500-10000 ☐ (f) 10000 and Above ☐

Please mention some other obstacles that you observed while using e-banking products and services offered by your bank. Also suggest ways to overcome them.

1.
2.
3.

Thank You!

Your response is very important to us.

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