

A PROJECT REPORT ON
“A STUDY ON CHALLENGE OF MOBILE BANKING IN INDIA”

A Project Submitted to
University of Mumbai for Partial Completion of the Degree
of Bachelor in Commerce (Accounting and finance)
Under the Faculty of Commerce

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NAAC Re-Accredited Grade 'A+' (CGPA : 3.31) (3rd Cycle)
Sector-19, Airoli, Navi Mumbai, Maharashtra 400708



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CERTIFICATE

This is to certify that **MR. DHRUVESH RAVINDRA PATIL** has worked and duly completed his Project work for the degree of Bachelor in Commerce (Accounting and Finance) under the Faculty of Commerce in the subject of **Accounting and Finance** and his project is entitled, "**A STUDY ON CHALLENGE OF MOBILE BANKING IN INDIA**". Under my supervision.

I further certify that the entire work has been done by the learner under my guidance and that no part of it has been submitted previously for any Degree or Diploma of any University.

It is his own work and fact reported by her personal finding and investigations.

Guiding Teacher,

ASST. PROF. DR. KISHOR CHAUHAN.

Date of submission:

DECLARATION

I the undersigned **MR. DHRUVESH RAVINDRA PATIL** here by, declare that the work embodied in this project work titled “**A STUDY ON CHALLENGE OF MOBILE BANKING IN INDIA**”, forms my own contribution to the research work carried out by me under the guidance of **ASST. PROF. DR. KISHOR CHAUHAN** is a result of my own research work and has been previously submitted to any other University for any other Degree/ Diploma to this or any other University.

Wherever reference has been made to previous works of others, it has been clearly indicated as such and included in the bibliography.

I, here by further declare that all information of this document has been obtained and presented in accordance with academic rules and ethical conduct.

(DHRUVESH RAVINDRA PATIL)

Certified by:

ASST. PROF. DR. KISHOR CHAUHAN.

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CAPTER 01

INTRODUCTION

I. AN INTRODUCTION TO BANKS

A bank is a financial institution that provides banking and other financial services to their customers. A bank is generally understood as an institution, which provides fundamental banking services such as accepting deposits and providing loans. There are also non-banking institutions that provide certain banking services without meeting the legal definition of a bank. Banks are a subset of the financial services industry. A banking system also referred as a system provided by the bank that offers cash management services for customers, reporting the transactions of their accounts and portfolios, throughout the day. The banking system in India should not only be hassle free but it should be able to meet the new challenges posed by the technology and any other external and internal factors. For the past three decades, India's banking system has several outstanding achievements to its credit.

The Banks are the main participants of the financial system in India. The Banking sector offers several facilities and opportunities to their customers. All the banks safeguard the money and valuables and provide loans, credit, and payment services, such as checking accounts, money orders, and cashier's cheques. The banks also offer investment and insurance products. As a variety of models for cooperation and integration among finance industries have emerged, some of the traditional distinctions between banks, insurance companies, and securities firms have diminished. In spite of these changes, banks continue to maintain and perform their primary role is accepting deposits and lending funds from these deposits.

Technology plays an important role in banking sector. Banking is one of the largest financial institutions constantly exploring the opportunity of technology-enabled services to provide better customer experience and convenience. Mobile phone is a common technology device that became part of every individual's life in the information era. Mobile Banking is an emerging alternative channel for providing banking services. India is the second largest telecom market in the world, which is having high potential for expanding banking services using mobile. However, mobile banking has not become the choice of millions of people. This technology help us to save our time & provide facilities to get information about our account, transactions and transfer the money from one account to another account from anywhere and anytime but there is problem in customer adaptation, customer distrust on the mobile banking.

The main objective of this study is to identify the mind-set and analyze the prospects and issues in Mobile banking among the banking customers in India.

In India there are 1.012 billion active mobile connections in January 2018 out of 460 million internet users are there... by 2021 there will be more than 635.8 million internet users in India. This is a major increase from previous years. The global report found that mobile banking adopts by new users and largest in emerging countries. It ensures that customer in clearing and settlement of transaction through nationwide and real fund transfer in any bank account and operates of any operator.

The study aimed at examining the knowledge of banking customers on the services offered by banks for mobile banking; finding out challenges faced by mobile banking services in extending their services to many customers; determining whether customers are extensively using mobile banking.

For this research, primary data was used. This study adopts with descriptive in nature. A sample size of 80 respondents was given this questionnaire. Secondary data was collected using documentary sources such as articles and research reports from internet and media. Analyzed data was presented using percentage in tables, charts and graphs.

The findings showed that the majority of respondents knew little about the services offered by banks through mobile banking. The study revealed that many customers fear the use of mobile banking services. They fear insecurity, high charges and unreliability of such services. However, 100% respondents did agree that it is speedy, and saves time than traditional banking.

The study concludes that there is a need to educate the banking customers about the diversity of services offered as well as the importance of using mobile banking in their day-to-day chores.

From this research, other researchers and policy makers will get an insight about prospects and issues of mobile banking in India.

Several mobile payment companies and initiatives in EU have failed and many have been discontinued. In Europe and North America with few exceptions such as Austria, Spain and Scandinavian countries the development of mobile payments has not been successful. However, mobile payment services in Asia have been fairly successful especially in South Korea, Japan and other Asian countries (e.g., Mobile Suica, Edy, Moneta, Octopus, and GCash).

NTT DoCoMo has 20 million subscribers and 1.5 million of them have activated credit card functionality in Japan. There are 100,000 readers installed in Japan. The main difference between successful implementations of mobile payment services in the Asia Pacific region and failure in Europe and North America is primarily attributed to the 'payment culture' of the consumers that are country-specific.

2. FEATURES & BENEFITS OF MOBILE BANKING (MOBILEPAYMENT CHARACTERISTICS)

A mobile payment service in order to become acceptable in the market as a mode of payment the following conditions have to be met: a) **Simplicity and Usability:** The m-payment application must be user friendly with little or no learning curve to the customer. The customer must also be able to personalize the application to suit his or her convenience. b) **Universality:** M-payments service must provide for transactions between one customer to another customer (C2C), or from a business to a customer (B2C) or between businesses (B2B).

The coverage should include domestic, regional and global environments. Payments must be possible in terms of both low value micro-payments and high value macro payments. c) **Interoperability:** Development should be based on standards and open technologies that allow one implemented system to interact with other systems. d) **Security, Privacy and Trust:** A customer must be able to trust a mobile payment application provider that his or her credit or debit card information may not be misused. Secondly, when these transactions become recorded customer privacy should not be lost in the sense that the credit histories and spending patterns of the customer should not be openly available for public scrutiny. Mobile payments have to be as anonymous as cash transactions.

Third, the system should be foolproof, resistant to attacks from hackers and terrorists. This may be provided using public key infrastructure security, biometrics and passwords integrated into the mobile payment solution architectures. e) **Cost:** The m-payments should not be costlier than existing payment mechanisms to the extent possible. A m-payment solution should compete with other modes of payment in terms of cost and convenience. f) **Speed:** The speed at which m-payments are executed must be acceptable to customers and merchants. g) **Cross border payments:** To become widely accepted the m-payment application must be available globally, word-wide.

Benefits of Mobile Banking

There are a huge benefits of banking using mobile phones. The obvious is that this is a time saving, no-queue method of banking wherein almost all banking related services can be accessed through the mobile. It also offers services like ATM locating system, remote withdrawals as well as mobile payments to the users. The main increase to this technology is the availability of smartphones that have simply made our lives easier.

The mobile banking service accessible by almost all banks is free of cost. This means the customer can handle hassle-free transactions without extra charges.

There are three ways in which the services can be opened from the mobile depending upon the cell phone compatibility and its make. This makes mobile banking available to everyone. The first one is through SMS wherein the balance information and banking passwords are sent to the user via SMS. Secondly, some banks have committed software applications that can be downloaded on the mobile for opening the bank account. Thirdly, the mobiles that have Internet browser competence can access the banking applications easily like a computer.

The bank servers are encoded for wireless transactions. This means that this mode of a transaction may truly be better secured than transactions through wired networks.

The account data along with the account number is not displayed on the wireless connection. This helps more towards data security.

Problems of Mobile banking

Mobile Banking Apps Sound Great But ...

The WWW and financial industry have made great steps over the last period, but have kind of become stuck in no man's land. Financial institutions want more people to try mobile banking apps, but the primary problems have not been decided. Without customers, banking firms have no reason to invest in the research & development needed to fix the problems.

1. Questionable Security

Security is a concern for most online bankers. In fact, one experienced estimates that 90% of all mobile banking apps have security issues. Ariel Sanchez of IO Active Labs tested out 50 of the top 50 banking apps on his iPhone and found that nine out of ten failed. The apps could not even protect against hackers. Solution: The Bankers need to employ ex-hackers to nurture their apps

2. Dropped Calls, Crashes & Bad Connections

Have you ever taken a bad Internet connection? Imagine if you were right in the middle of financial operation. Weather, traffic flow, and who-knows-what can interrupt your online banking transfer. Bill Shipley of Accenture Mobility Services admits that smashes for utmost mobile banking sites are about 5%.

Solution: More security to improve uptime rates for mobile banking websites.

3. Won't Read Paper Deposits

When Microsoft upgrades its Windows, it needs to have different compatibility with older types. This is a normal scientific rule. Inappropriately, mobile banking applications cannot smoothly read a paper check or physical signature. The financial segment is gathered – it promises to go paperless when most people still use paper for the financial transactions.

Solution: Improve a scanner to mobile devices.

4. Bankers Don't Understand Apps

Utmost bankers are traditionally conformist. Most application developers are fairly independent and open-minded. Many financial institutions do not mesh well with the cell phone application improvement culture. Combining cultures has been very difficult. Some software design languages are open source; banks require privacy.

Solution: Banks must create their own group of an industrial computer programmer.

5. Very Little Standardization

What policy should you develop in your banking app on – Blackberry, Apple or Google Android? The investment in mobile banking applications is very expensive with questionable returns. One expert claims [Android payment apps are risky](#). Banks have a tough time making their rules upon a world with different languages, technologies, and rules. The global village is becoming more narrow-minded.

MobileBanking–Advantages

Here's a list of 08 most promising advantages of mobile banking for both banks and their customers:

Be accessible when and where your customers want you to be:

Mobile banking does not limit your business to set times/localities. Be available 24/7 – anytime, everywhere!

Empower your customers:

Your users will be able to transfer sum of money, investor exchange currency without intermissions/suggestions from anyone, waiting time and quick improvement on requests.

Go green, and go paperless:

Bring paperless declarations directly into customers' email addresses, while saving the cost of production, paper, and transfer. The less wastage of paper makes this clarification and environment-friendly.

Have a single vision of customers:

Linking your mobile banking application by the present central banking solution to KYC better. Study the customer's profile and account data to understand their financial performances for offering modified products/services.

Provide best & fast services to customers:

With a smart feature of smartphones like the camera, allow your customers to simply click pictures and initiate requests. For example: Open a new account by indicating and submitting KYC documents accessible instantly.

Enable location-based services:

Track a user's location, push notices for recent offers proximate and ensure greater safety against scams for transactions started from amateurish locations etc.

Reward your customers:

Give loyalty prizes to customers in the usage of mobile transactions giving points or discount vouchers for handling via using the mobile banking application.

Safeguard customer details:

Bit real-time updates on relations accomplished; configure multi-level security types like OTP to registered mobile for validation via the banking application.

Disadvantages of Mobile Banking

Many consumers use mobile banking on their cell phones or another portable device because it allows them to quickly access information such as account balance and transaction history. The benefits of this convention are indisputable, but there are a number of disadvantages that mobile banking users should be aware of. The technology's cost, compatibility problems, and security problems may cause you to think twice about using its mobile banking lets you access your account information anywhere.

In **Bank Invention's State of Banking Innovation in 2016** analysis, we asked the review's 171 respondents — the majority of whom self-identified as bankers — what they thought banking will be like in 2020. Here are ten different ways they answered:

1. Mobile is Everything, But Same Old Banking methods

Several respondents supported the futures of mobile: "Everything you need will be done on your own mobile phone," one defendant wrote. "Mobile payments will totally reposition real wallets." Another added this could lead to the significant cashless ideal: "More innovation but on mobile, innovations to handle micropayments—extensive cash out."

2. Banks Absorbs the Fintech Startups

One defendant was unconvinced that current startup culture would still be everywhere, noting that there will be "very few large scale startups. Most will be acquired and integrated into the greater system." He didn't intricate as to why, but we strength suggest capital drying up, regulations increasing, or greater collaborations developing between fintech firms and innovative banks.

3. All Processes Go Digital

Before we get to mobile we have to eliminate irritating, irritating paper and other remnants of the Dark Ages, which is why some respondents claimed we will have moved entirely on to electronics in the next few years.

4. "Banks" Disappear

Some participants declared the failure of the entire banking world, like one respondent who transcribed, "It will be in rags after the next banking crisis and we will see a completely new financial organization in its making." Another was less dramatic and wrote that in the future one could expect to see, Some of the same and some that are new. Many of the larger banks will be well on their way to a continuous integrated channel involvement. Customers will have one (or many) financial partners. They will have access to all of their relevant financial information in real time to help them make the right financial conclusions in their day-to-day activities. Whether this is to be delivered by banks or troublemaking startups is yet to be seen." Lastly, another respondent predicted chaos, writing, "total alteration; occupants who adapt will survive— [there will be] significant automation and even AI. Many jobs and old practices will be gone."

5. Public Banks Will Still Be a Thing for Communities...

Some respondents thought communal banks would succeed by serving, well, communities. (See Kasasa Chief Innovation Officer John Waugh's upcoming book *Bankrupting* for more on this theme.) One respondent wrote the banks' survival will "depend on geographic location — small communities will continue to be primarily assisted by community banks. Large cities will see a continued shift to a operative banking model." A junction of banking between a branch and digital based on geography? Interesting.

6. Staff Shrinks, and Shifts to IT

Some bankers predicted that the rise of technology would be led to less staff in finance — unless they happen to do a particular job, like this one respondent who wrote, "Only 20% of current staff levels [will remain], but [banks will employment] twice the number of IT operate. Traditional banks will lose their direct channels to professional channel providers."

7. The rise of the Robots (and AIs)

I would use this for #9: "More automation and personalization. Banking as a platform," one respondent wrote. This might mean more chatbots and artificial intelligence fast-tracking the onboarding procedure, but it also states to API ecosystems being built on top of bank systems. To many in banking, this implies giving away the customer involvement to fintech startups and the tech giants, but maybe it will just mean attractive the customer understanding by securing in one's finances to services and systems that are already used and loved. Plus chatbots. Lots and lots of chatty little chatbots.

Security

By way of with most internet-connected devices, as well as mobile-telephony devices, cybercrime rates are increasing year-to-year. The types of cyber crimes which may affect mobile-banking might range from unauthorized use while the owner is using mobile banking, to remote-hacking or even blocking or snooping via the internet or telephone network data streams. In the banking world, currency rates may variation by every millisecond.

Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most difficult experiments that need to be addressed together by mobile application developers, wireless net service providers and the banks' IT departments.

The following aspects need to be addressed to offer a secure infrastructure for the financial transaction over a wireless network :

1. The physical part of the hand-held device. If the bank is offering smart-card based safety, the physical safety & security of the device is more important.
2. Security of any thick-client application administration on the device. In case the device is stolen, the hacker should require at least an ID/Password to right to use the application.
3. Authentication of the device with the service provider before initiating a transaction. This would safeguard that unauthorized devices are not connected to make financial transactions.
4. User ID / PIN authentication of the bank's customer.
5. Encryption of the data being transferred over the air.
6. Encryption of the data that will be stored in the device for later / off-line analysis by the customer.

One-time password (OTP) is the latest tool used by financial and banking service providers in the fight against cyber fraud.^[71] Instead of relying on traditional memorized passwords, OTPs are requested by consumers each time they want to perform transactions using the online or mobile banking interface. When the request is received the password is sent to the consumer's phone via SMS. The password is expired once it has been used or once its scheduled life-cycle has expired.

KEYWORDS - Mobile Banking, Mobile Banking in India, Issues and Prospects, Challenges of Mobile Banking

CLASSIFICATION OF BANKING INDUSTRY IN INDIA

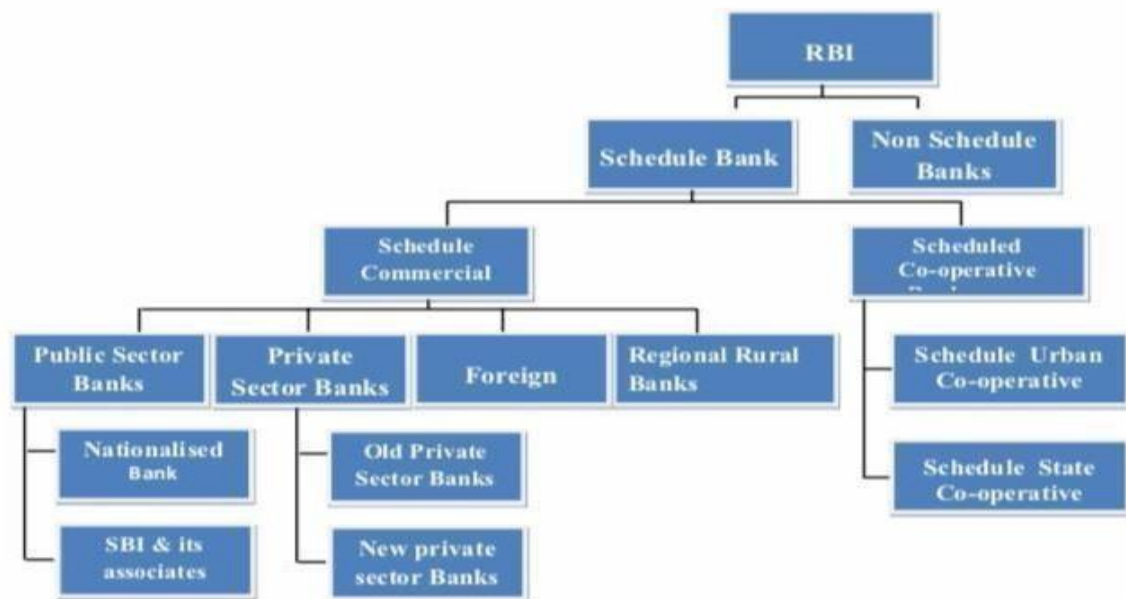


Exhibit : 1
Indian Banking Structure

FIGURE 1

II. BANKING SERVICES

Banking services are regarded as one of the important service. Banks provide financial services to the customers. Due to the rising competition and liberalization, the banking industry has become the buyer's market. Banks need to create and develop the services, which can satisfy the consumer needs. Customer satisfaction is a very important construct in today's market and it is directly influenced by service quality as per earliest studies.

Therefore, the present research work has been carried out to analyze the rural customers' attitude towards public sector banks.

Banking in India is so convenient and hassle free that one (individual, groups or whatever the case may be) can easily process transactions as and when required.

The most common services offered by banks in India are **Bank Accounts, Loans, Money Transfer, Credit and Debit Cards, Lockers.**



In our country only banking sector is that sector which works as a channel in attracting savings and mobilizing them in required areas. It works as a weapon of capital formation. As, change is the rule of nature. To alter the policies according to environment fluctuation is known as change and to explore or use new technology for making change is known as innovation. Today all sectors are working as innovation acceptor.

Banking sector's profitability depends on better customer relationship. Moreover, nowadays today's consumer banking needs are getting more complex and demands are for more innovative products. Therefore, give them better services banks have introduced a new profitable technology called MOBILE BANKING. In addition, many more like internet banking, ATM, debit card, credit card etc.

With mobile banking technology, banks can offer a wide range of services to their customer such as funds transfer while travelling, receiving online updates of stock price or even performing trading while being stuck in traffic.

M banking gives ability to customer to control their cash outflows anytime, anywhere, without having to connect to internet

The use of a mobile phone to make payment and carryout other banking transaction called m-banking has started taking roots in a number of developing countries, including India.

M banking is a service of banks to make available, the facility of banking wherever the customer is and whenever he needs.

In today's world, every person has personal mobile rather than having computer at home. Even rural person also have mobile. With mobile banking customer can bank from anytime and anywhere.

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 race. In addition, spread of mobile phones across the developing world is one of the most remarkable technology stories of the past decade. Mobile banking is enjoying a rapid growth in India. It has successfully crossed the introduction stage. Mobile banking is different from internet banking and ATMs anyways. The internet is not as commonly used as the mobile phones. Further, the internet requires particular devices such as a desktop or a laptop.

ICICI bank pioneered in mobile banking service in India. Among public bank, Union bank of India was first to introduce mobile banking.

M –banking may prove to be an important innovation in developing world.

The public sector bank realized that if they have to survive, they will have to adopt modern technology, SBI was first to focus on technology and is constantly at work to innovate in an attempt to lower costs. Technology will not just help them reach out to customer better but also help them cut costs and improve efficiency.

Hence by adopting right mobile banking regulation and mobile security standards the banks can reach whole population which result in economic growth of the country.

Banks have changed from paper-based banking solution provider to the latest of the technology like online banking, Mobile banking.

Mobile banking should reach to the common person at the remotest location in the country. Mobile banking reaches from high-end to low-end users and from metros to middle towns and rural areas.

Growth in the M-banking is driven by various facilities like convenience of banking operation, greater reach to consumer .in M-banking there is no place restriction. It is highly penetration coefficient as growth of mobile phones is more than computer. It is fully personalized and private increasing transaction authenticity and is 100% available all the time with the users.

III. CONCEPT OF MOBILE BANKING

Mobile banking is a service that provides the banking facilities with help of mobile phone. It helps us to know about our account information with the help of SMS. Mobile banking not only give the account information but it provide transaction and payment facilities also such as bill payment and shopping payment and other bank services also can be provide with the help of mobile banking so mobile banking is very useful for us and provide all facilities from anywhere and anytime time with the help of mobile banking.

According to the mobile banking services, it can be divide on two types:

First one, is SMS banking, SMS banking refers to provide the account information through the SMS whenever you use transaction from your account it alert you about your transaction whenever you transact from your account with your ATM or at the transaction at the shopping time, it will alert you via SMS. These facilities help us with any unauthorized transaction and alert about transact amount, time and place of transaction, which helps to detect the unauthorized transaction.

Second one, is Application based banking this is refers to provide the banking facility via mobile with the help of mobile application this facilities are available in smart mobile phone by downloading application of banking services we can use it. It provides to access and manage our account with the help of mobile banking. So according to above classification we can say that mobile banking provide banking services in two way first one is SMS facility and application services.

IV. MOBILE AS A MEDIUM

In this context, the question that often gets debated is “how and why is a mobile device the most appropriate delivery channel of financial services?” Besides the technology capability to transmit financial information in an efficient, secure and cost-effective manner enabled by development of mobile-based applications for banking, the most significant fact about this idea is the ubiquity of the mobile phones. The number of mobile phones in the country are said to be nearing a billion phones. Hence, banking and financial services, which have already come a long way from the branch level services to the customer’s home desktop and laptop, can now be reached to a much larger section of the society, including the financially excluded, through the medium of the mobile phones. Besides the reach of mobile, there is another reason why mobiles are the most appropriate medium. What is after all a banking transaction? What purpose does the traditional cheque serve? In India, if you forget to carry your chequebook for withdrawal of funds, they provide you with what is call a withdrawal slip. A cheque or a withdrawal slip is a personalized direction to your banker to put through banking transactions on your behalf. The authentication is achieved through your signature. Nevertheless, this traditional method is expensive. A mobile phone achieves the same purpose and enables you to send personalized secure instructions to your banker to undertake transactions on your behalf. If your bank has achieved seamless integration with the CBS, then the transaction gets automatically registered. However, these transactions using mobile are far less expensive than its traditional alternatives. More importantly, you hold the key since mobile is in your pocket and you need not depend on bank timings or the rush there to undertake banking transactions. This is perhaps the most important advantage of the mobile over other alternate payment methods. The mobile phone can therefore empower the common person to conduct his payment transactions any time and from anywhere. It is, therefore, no wonder that mobile payments and mobile banking are being hotly debated in various forums, in India and abroad.

V. DEVELOPMENTS IN MOBILE TECHNOLOGY

Motorola¹ was the first company introduced mobile phone in the year 1973, which is very costly and also more weight (in Kgs) when compared with present mobile sets which are cheap and small in size.

1st Generation (1G): The first analog cellular system widely deployed in North America was the Advanced Mobile Phone System (AMPS). It was commercially introduced in the Americas in 1978, Israel in 1986, Australia in 1987 and India² in the year 1995.

2nd Generation (2G): Second generation mobile communication replaced the analog signal with digital signal.

There are two major technical developments occurred that is GSM and CDMA technologies³. The NTT DoCoMo in Japan introduced internet service on mobile phones in the year 1999.

3rd Generation (3G): The mobile phone became essential communication system for millions of users worldwide. The 3G technology developed with the concept of packet switching instead of circuit switching for data transmission.

4th Generation (4G): The fourth generation⁴ technology introduced in the year 2009 with the technology advancement like WiMAX & Long Term Evolution (LTE) technologies.

VI. ORIGIN AND POTENTIAL OF MOBILE BANKING SERVICES

Recognizing the potential of mobile banking, Reserve Bank of India issued the first set of guidelines in October 2008. The guidelines defined mobile banking as undertaking banking transactions using mobile phones by bank customers that would involve credit/debits to their accounts. This definition in a sense provided larger canvas to mobile payments, which in a narrow sense involved only payment made for a product or service using the mobile phone either remotely or at the Point Of Sale (POS). These guidelines, which were very broad-based, laid down the technology and security standards pertaining to safety, confidentiality, integrity, authenticity and non-reputability. As this was a nascent technology and, to build up customer confidence in terms of minimizing frauds, the Reserve Bank mandated that all transactions should be encrypted irrespective of the value. The Reserve Bank also made inter-operability a cornerstone of its policy. After the initial set of guidelines, several policy relaxations have been made to further encourage the use of mobile banking taking into a.

environment and feedback of the industry and customers (Box 1). The growth in mobile banking that has taken place in the country until date, though has been rapid, and is yet to reach the critical mass that will enable it to deliver on its promise of reaching banking including payment services at a cheaper, secure and seamless manner to the existing and potential customers. It has the potential to be the next wave of financial and technological innovation in banking by universalizing access to banking service without jeopardizing prudential and regulatory framework of the financial sector.

VII. TYPES OF MOBILE BANKING IN INDIA

Banks provide mobile banking services to their clients in the ways listed here:

- Mobile Banking over Wireless Application Protocol (WAP)
- Mobile Banking over SMS (also known as SMS Banking)
- Mobile Banking over Unstructured Supplementary Service Data

(USSD)These mobile banking services have been discussed in detail here:

Mobile Banking over WAP

The customers can download the mobile application of the concerned bank on their smartphones and then use it to avail various services provided by the bank. They need to register for mobile banking separately and receive their login credentials to use mobile banking applications, simply known as mobile apps. Most banks provide mobile apps for iOS and Android devices.

Different banks offer mobile apps to their customers to help them carry out common banking transactions conveniently. Some banks offer different mobile apps for different banking services. For instance, the bank may offer an e-Passbook app that only serves the purpose of account balance check since the app acts like a digital passbook and there is another mobile app for other services such as funds transfer, bill payment, and more in addition to balance check. The customers can choose to download one or more apps provided by the bank to avail mobile banking services.

Some of the major mobile banking services have been mentioned here:

- **Account Access:** Customers can easily access their bank account using their smartphones by downloading the mobile banking. All they need is to use their User ID and password to access their accounts. They can then carry out different banking transactions instantly.
- **Balance Enquiry:** One of the main reasons why people used to visit the bank was to keep their passbooks updated so that they always knew their current balance. When the balance enquiry service was offered through ATM, people started using it instead of visiting the bank. Now, it is even more convenient to check account balance using the mobile banking.
- **E-Passbook:** Some banks offer a separate digital passbook mobile app that customers can download to check their previous transactions and the latest account balance while others just have this service, as a part of their main mobile banking there is no need to visit a bank or ATM for balance enquiry or account statement.
- **Account Statement:** If you want to check your bank account statement, you no longer need to go to the bank or ATM since you can get the statement on the mobile app of your bank. Since there are only a few free ATM transactions available to everyone these days, it is better to avail them only for cash withdrawal; account balance or account statement should be checked using the mobile app. You can also download your account statement in PDF format and save it on your phone.
- **Fund Transfer:** If internet banking and mobile banking have made the lives of people any easier, it is mainly because of this service. People can now transfer money from their bank account to an account in their own bank or another bank easily. They may have to pay a nominal charge to carry out interbank transfers but intra-bank transfers are usually free. IMPS, NEFT or RTGS transactions can also be carried out easily using mobile apps.
- **Bill Payment:** Mobile banking has made it easy to pay your mobile, credit card or utility bills. You can even schedule payments on a certain day of the month so that you do not have to worry about the payments. There is no need to stand in long queues to pay your phone bills, credit card bills, etc.
- **Branch Locator:** If you are in a new city or area, you may need to find a branch of your bank then you can easily use the mobile banking app to find it. Most banks have a 'Branch Locator' that you can use to find the nearest branch.

- **ATM Locator:** When you are in a new city or area, you might want to withdraw cash from an ATM. The easiest way to find an ATM of your bank is to open your mobile banking app and go to the “ATM Locator.” You will be able to find the address and exact location of the ATM within your vicinity.
- **Requests:** There is no need to visit the bank to request a chequebook, new debit card, credit card, duplicate debit card, etc. since you can do so easily using the mobile app. Most banks also offer the service to hotlist or block a debit or credit card in the case of loss or theft.

Mobile Banking over SMS

Most banks offer mobile banking services over SMS. The customers need to sign up for this service, known as SMS Banking, by registering their mobile number. Then, they can send SMS to the bank to inquire about their account balance, check the mini account statement, etc. The bank then replies with an SMS that contains the information requested by the customer. The customers do not need to own a smartphone or internet access to avail SMS banking services. Banks have a specific phone number registered and an SMS format that the customers need to follow to avail of this service. For instance, to check the available balance in their account, they may have to send an SMS in the format: AVAIL BAL XXXX where XXXX is the last 4 digits of the account number. The bank replies with an SMS with the current available balance in the account. It is important to note here that the mobile number registered with the bank and the one you use to send the SMS needs to be same to avail this service.

Mobile Banking over USSD

Banks offer mobile banking over USSD service to people who do not own a smartphone or have access to the internet. They can simply use USSD codes provided by the banks to avail banking services. The customers dial a prefix code and click send. Then, they receive a menu containing the banking services such as balance enquiry, mini account statement, etc. that they can avail using their phone. This service is quite popular in rural areas where most people do not own smartphones and do not have access to the internet.

The generic definition of mobile banking involving credit/debit to the account of the customer-using mobile has been customized in India to provide two rather unique services. These are the Inter-bank Mobile Payment System (IMPS) and the Mobile linked Kisan Credit Card (m-KCC).

VIII. MOBILE BANKING AND IT'S BENEFITS

There are plenty of reasons why mobile banking has gained so much popularity ever since it was introduced in India. Here are a few features and benefits of mobile banking:

- One of the main benefits of mobile banking is the convenience of having banking services at your fingertips. There is no need to go to a bank or ATM and wait for the bank to open in order to check your account balance, transfer money, pay your bills or even see your account statement. You can do it all using your mobile phone. Fund transfer transactions may complete when the banks are open but you can check your account balance or get account statement irrespective of the time or day.
- Banks know that not everyone has access to the internet and that is why they offer mobile banking services to their customers over SMS and USSD. People who own smartphones and have access to the internet can download and use the bank's mobile apps while others can use the mobile banking SMS and USSD services. The customers only need to use the right SMS format to avail SMS banking services and right prefix for USSD services.
- Your bank account and your personal details are very safe if you use mobile banking, the bank will give you a set of login credentials, which you can use to sign into your account and carry out the transactions. These login credentials are passed on to you securely and since you are the only one who knows your login ID and password, your account is always safe. Most banks allow you to enable two-step verification where you can only carry out banking transactions if you enter the One-Time Password (OTP) sent to your registered mobile number.
- Most people want to avail mobile banking services but think that it will cost them a lot. However, they will be delighted to find out that banks offer these services for free. You do not need to pay any extra charges to register for mobile banking Unlike ATM transactions where you get a limited number of free transactions, you can check your account statements, balance or pay your bills as many times as you want without paying any charges. After the implementation of GST, you only have to pay a nominal charge to transfer funds or pay your bills.

IX. CHALLENGES OF MOBILE BANKING

The rapid technology development in Mobile technology like 2G, 3G, 4G has become major challenges for banks. It is visible that the bank, which started Mobile Banking in the form of SMS banking, then adopted application (software), based model for traditional mobile handsets, the evaluation of Smart phones, mobile operating system and Mobile Apps posed the banks to adopt the current technology.

The customers are mostly using ATM and online banking services. Most of the customers feel comfortable without mobile banking. They also feel, there are chances of misuse in mobile banking due to mobile handset theft.

Handset operability, Scalability and reliability, Security, Application distribution, Personalization and many more such issues.

X. FUTURE DRIVERS FOR MOBILE BANKING

There are various factors, drivers that will empower Indian mobile banking to grow exponentially in the coming years.

A. Under-banked and Un-Banked Population

Out of 600,000 villages in India only one sixth, have banking services. Almost half of the country's population is unbanked. The large section of the Indian population not just in rural areas but also in many segments of urban markets, offers a large untapped market with a tremendous business potential. Financial inclusion is slowly but surely being seen not just as a social responsibility, but as a potential business model too, for two reasons.

Firstly, the RBI is looking for real business cases and forcing banks for the same and secondly, because of the huge untapped market for banking services.

B. Demographic Factors

In India the population of youth (between the ages of 14-29) is the largest youth population globally, which is around 27% of the total 1.2 billion. Furthermore, adding the age group of 30-44, the proportion is 47%. %. Apart from the huge size of this segment, they are among those who are the early adopters of latest technology and new services, which presents a huge opportunity for e/m-banking service providers. It has been observed that for the majority, access to financial services is a household need, and not only an individual need, and if the account holder is illiterate, other members of the family are competent enough to execute transactions and use electronic or mobile banking services.

C. Bank Based Services

It has been observed that poor people, whether in urban or rural completely understand the need for formal financial services and are well aware of the fact that they are losing money in the informal sector and whenever they leave money in the household. Many low-income households also express a clear need for credit facilities – but 51% remain dependent on informal sector (other sources) moneylenders. Similarly, they are very aware of the drawbacks and costs of informal remittance schemes, and are to send money to family and friends.

For doing one transaction from a bank, a poor has to incur significant direct and opportunity cost. The direct cost associated with traveling to a bank branch is not insignificant. They have to incur about Rs.20 and opportunity costs of wage labor range from Rs.50 to Rs.150 and sometimes more. As a result, there is growing willingness to conduct transactions through agents and to pay for these services. Majority of villagers are willing to pay for services that will reduce their real and opportunity costs.

India continues to be a unique market and regulatory environment with intense involvement of the regulator and the government. Hopefully, the rapid outreach will make the model sustainable for all the players, banks, BCNMs and agents and at the same time offer services really needed by the clients. These two ends are, of course, aligned and mutually beneficial. The gradual regulatory evolution to support BCs and banks in their outreach efforts continues – and the results are beginning to emerge.

The other exciting development is the move to encourage banks to have 25% of their branches in rural areas. These, presumably low cost branches, can become the hub for financial inclusion and support wider outreach of branchless banking outlets, while acting as nodes or hubs of the model. The antiquated post-office structure is also undergoing rapid transformation and all records will be computerized with plans to link post-offices within the next year.

Many of the lessons learned in the past can very well be applied by the banking sector. With government goading, the banks in India will soon recognize and respond to this.

TABLE I

Mobile banking services offered by some of the banks in India

NAME OF THE BANK	MOBILE BANKING SERVICES
STATE BANK OF INDIA	Freedom SMS Banking USSD
UNION BANK OF INDIA	SMS Banking U Mobile
PNB	SMS Banking
ICICI	IMobile SMS Banking M-PESA MRupee
HDFC	SMS Banking App Based Browser Based
AXIS BANK	Phone Banking Internet Banking on Mobile SMS Banking



1. RESEARCH METHODOLOGY AND DESIGN

METHODOLOGY:

Methodology is system of broad principle or rule from which specific methods or procedures maybe derived to interpret or solve different problems within the scope of discipline. Methodology is not a formula but a set of practices.

The study was conducted to identify the issues and prospects of mobile banking in India. Necessary data was collected from different ages of people and analyzed in terms of the objectives of the study.

There are several ways to collect this basic information. The data for this study was collected by the survey method. Survey is a research technique in which information is gathered from a sample of people by use of a questionnaire or interview. It is a method of data collection based on communication with a representative sample of individuals. The researcher developed a questionnaire and circulated into among her friends & family to provide details about their mobile banking services usage, knowledge & issues faced. The survey was designed in a manner to gain a better understanding of the perspective of customers at both financial and personal level. This research is based on present study and the findings are supported by the responses and insights from the sample surveyed.

TYPES OF RESPONDENTS:

This research includes all types of people mostly selected different age, sex and occupation people.

RESEARCH DESIGN:

Mobile banking is a new technology for people in India. Bank customers normally use traditional banking system as they trust this system and they are used to it. People are afraid of using mobile banking because they cannot feel it trustworthy.

In our country, most of the customers are influenced through advertisements. In recent times, customers have become more conscious about their savings. Different banks advertise about

mobile banking services to give information about it to all people in the country. This research study has researched the customer perception on mobile banking based on the above dimensions. The respondents were approached through questionnaire that was sent to them on their social media handles. It was felt that the survey will give the correct result. The research is descriptive in nature, using primary data.

Instead of walking into a physical branch of their bank, customers have access to their account balance, payments received, funds transferred, and can easily organize their finances on the go. This can be done regardless of where the customers are, at a time and place that suits their needs, rather than waiting in long queues. Authenticated mobile banking apps have a security assurance or SMS verification code that needs to be input to authorize a payment. Hence, mobile banking is said to be much more secure than its predecessor banking methods. With the introduction of mobile banking, customers have access to their financial information even after their bank's working hours.

It assists them to utilize banking services at their convenience. Mobile banking operations are efficient and competent. It helps in de-congesting the bank lobbies and reducing the amount of tedious administration for bankers and the customer. Customers are being assisted in real-time to manage their investments as well. The customer can track their account balance, review all transaction activities, locate ATMs, deposit cheques, and manage investments. It is accessible round the clock throughout the year and is an ideal option for gaining financial services for those mobile phone users who reside in rural areas.

However, mobile banking users are at a higher risk of phishing through scam messages and e-mails. Hackers must do the least amount of effort to cause severe damage to the mobile banking users. Criminals can easily gain access to the customers' mobile banking PIN and other sensitive data if the device is lost. Latest mobile devices such as smartphones are more suitable for mobile banking than older mobile devices, demanding the customer to upgrade out of compulsion and necessity. Significant charges from banks are accumulated with the regular use of mobile banking services. There is also a lack of a substantial operating system supporting mobile banking for many regional rural banks in India.

Today, mobile banking apps require an internet connection to function, leaving rural areas at a great disadvantage if the internet connection is poor. They also consume mobile battery and is not compatible with those customers who cannot purchase better mobile devices with good battery life. An additional disadvantage is that many domestically manufactured mobile devices, which are economic for tight budgets, are not still attuned with an anti-virus system. Certain mobile devices are not even compatible with their existing anti-virus software available, making it impossible to register them. Not all banks offer the same level of security for mobile banking that they do for online or on-counter bank transactions. Because the risks are yet to be known, certain banks have been slow to make clear about their facilities covered through mobile banking.

SAMPLE SIZE:

Sample is defined as a subset of the universal population. Sample is small group of respondents drawn from a population in which the researcher is interested in gaining information and drawing conclusions. A sample of 80 respondents was selected for study.

SOURCES OF DATA:

During data collection, both primary and secondary data were used for its validity and reliability as attached in annexures.

Primary Data:

This study used primary data that was obtained directly from the field. Data was collected from the sample population through questionnaire as attached in annexure.

The open and close-ended questions were used in questionnaire for bank customers.

Secondary Data:

Secondary data were used for providing the theoretical background to the research problem.

The secondary data sources were-journal, books, internet etc.

QUESTIONNAIRE TYPE AND RESPONSES:

The questionnaire was starting with some introductory questions such as name, age, occupation, education, income and address. These questions provide the basic information about the respondents. These types of question make respondents comfortable to respond the study.

There are 15 questions in this questionnaire. The respondents were asked the questions to know their knowledge and perception about mobile banking like “Have you ever heard about mobile banking?”, “Do you think you should use it?”, “Do you think mobile banking services are trust worthy?” etc.

DATA COLLECTION AND ACCURACY OF DATA:

Generally, most of the people are not interested to give time to answer a questionnaire. Therefore, it was very difficult to collect actual data because the information of the respondents was collected by approaching them to answer on social media and not face to face. To overcome this problem, all possible efforts were made by the researcher herself to ensure the collection of reasonably accurate information from the respondents.

Therefore, it has not been possible to apply any other method of investigation. Survey method has the advantage that it facilitates quick investigation and involves lower cost. In order to collect relevant information before taking data, the whole academic purpose of the study was clearly explained and made clear to the respondents. Data collected was checked and verified for accuracy and consistency.

Literature review

1. Scornavacca and Barnes (2004) suggest that recent innovations in telecommunications have enabled the launch of new access methods for banking services, one of these is mobile banking; whereby a customer interacts with a bank via a mobile device such as a mobile phone or personal digital assistant.
2. Rugimbana (1995) found that there is vast market potential for mobile banking due to its always-on functionality and the option to do banking virtually any time and anywhere.
3. Unnithan and Swatman (2001) studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking including mobile banking by focusing on two economies, Australia & India and suggested strong growth potential of new banking channel in India.
4. Clark (2008) suggests that as a Channel the mobile phone can augment the number of channels available to consumers, thereby giving consumers more low-cost self-service options by which to access funds, banking information and make payments.
5. Rao (2003) suggest banks will need to expand their thinking about mobile banking beyond online banking and should start to view mobility as its own powerful and compelling delivery channel that can help them deliver to end users new value such as immediate access and additional control of personal finances.
6. According to Vyas (2009), Banks will target non-online banking users who may lack regular access to desktop Internet but are very likely to own a mobile device.
7. Gupta (1999); Pegu (2000); Dasgupta (2002) also affirms future of mobile banking in India in their studies.

8. Suoranta (2003) found that the average mobile banking user is married, 25 to 34 years old, has intermediate education and average income in clerical work. She found that age and education have a major influence on the use of the mobile phone in banking services. The adoption theories assume that use of Internet banking precedes the adoption of the mobile phone in banking. However, found that some mobile banking customers omit Internet banking adoption when adopting the mobile phone for banking actions.

Polatoglu (2001); Al-Ashban and Burney (2001); Karjaluoto (2002); Black (2002) supports findings of Suoranta in their respective studies.

9. Mas (2008); Lyman (2008) found that 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; presetting a serious challenge.

10. Hayat (2009) suggests that for a banking regulator it is important to provide adequate protection for consumers, ensure economic stability, provide interoperability of electronic systems and guarantee security of transactions and Anti-Money Laundering and Know-Your-Customer principles must also be applied to mobile payments.

11. Comninos (2008) suggest that unbanked will only transact electronically (online/mobile banking) if there is convenience and security.

12. Sharma and Singh (2009) found that Indian mobile banking users are specially concern with security issues like financial frauds, account misuse and user friendliness issue - difficulty in remembering the different codes for different types of transaction, application software installation & updation due to lack of standardization.

13. Banzal (2010) found that another major issue is the revenue sharing agreements between mobile service providers, banks, content providers, aggregators and other service providers like utilities, travel agencies, hotel industry, retailers etc.

- 14.** Bamoriya and Singh (2011) found the mobile banking has the issues and challenges like mobile handset compatibility, standardizing, software downloading, privacy & security.
- 15.** Mujemula (2009), who studied on the role of mobile banking in customer satisfaction. He found that mobile banking facility positively influences customer satisfaction and he concluded that there is customer satisfaction on the use of mobile banking.
- 16.** Nyakiha (2009) noted that despite the positive perception toward mobile banking services customers do face challenges and security threats when utilizing the service.
- 17.** Masinge (2010) found that the most crucial factor for the customer was high cost and entrust due to insecurity. Thus, the service should be affordable and trusted as trust was found to be significantly negatively correlated to perceived risk.
- 18.** The Basel Committee on Banking Supervision expects risk in banking activities due to unprecedented speed of change in technological and innovation in products and services. The committee, which was recommended an integrated risk management, approach for all activities of a banking institution.
- 19.** The BI Intelligence survey of millennials found, 71% of millennials say it is very important to have a banking app. 60% say it's very important to have an app to make payments. 51% say that they have made a purchase through a mobile website or through an app in the last month. 27% say they have used their phone to make a payment at a checkout in a store in the last month.

- 20.** Tarandeep Kaur (2015) discussed that India has third largest reservoir of technical human resource, but it is not for medium of commerce for mass people, new models need to be developed and worked out with appropriate strategies to make electronic commerce and M-commerce as key policy for the development and progress in India. This current state will be further helpful to develop the new generation E-commerce i.e. mobile commerce for mass in India. With the explosion of internet connectivity through mobile devices like Smartphone and tablets, millions of consumers are making decisions online and in this way enterprises can build the brand digitally and enhance productivity but government policies must ensure the cost effective methods/solutions. The advancements in technologies and innovative services shows that India is moving from E-commerce to M-commerce, and in future E-commerce and M-commerce will became asset for commerce by the people to thepeople in India.
- 21.** Renju Chandran; suggested some ideas and presented three steps to run and improve the mobile banking services effectively. The author presented the benefits, limitations and problems faced by the customer during the transaction of mobile banking and suggested a method for improving that service.
- 22.** Aditya Kumar Tiwari; discussed about mobile banking advantages, drawbacks, Security issues and challenges in mobile banking services and proposed some idea to get the solution of mobile banking security.
- 23.** V. Devadevan; conversed about Mobile Compatibility, Mind-set about Mobile Banking acceptance and Security issues. The author depicted from the study that the evolution of eminent technologies in communication system and mobile device is a major factor and challenge to frequently changing the mobile banking solutions. The author suggested creating awareness among the existing customers and providing special benefits for mobile bankers, which will increase the service.

4. SCOPE OF THE STUDY

Based on the literature, the following mobile banking prospects and challenges were discussed with existing bank customers:

- Mobile compatibility
- Mindset about the mobile banking acceptance
- Availability of facilities
- Security & Privacy issues
- Willingness to adopt mobile banking service in future
- Future trends of mobile banking services
- Standardization
- Challenges facing mobile banking
- Telecom service quality

5. NEED OF THE STUDY

The need of this study was to find out what exactly causing the problem in adoption and extension of mobile banking services provided by banks in India.

There are various reasons that are being barriers, such as:

A. Customer awareness:

Due to lack of knowledge and awareness about mobile banking, it is also a reason for distrust in mobile banking services and it is also another reason for risk and security issue in mobile banking, because this is new technology in banking and financial system so all banking customer are not aware about it and feel risk to adopt it. Therefore, it is also a big challenge in front of mobile banking services in India.

B. Security issues & privacy:

There is security of mobile banking services is big issue and challenge. In mobile banking for the security purpose PIN or PASSWORD is used which may be steal by the attacker or unauthorized user if mobile device has loss or steal so user have to aware about it. Customers use sensitive data and information in mobile so here risk with pass of a legitimate application because third party it may steal our information and send it to another third party provides application services. Therefore, we have to be aware about application used for WAP mobile banking services and download a legitimate and authorize application for transaction with mobile banking services.

C. Virus & malware attack:

There is also risk with virus and malware attack. It may get access to your account information such as username, password and other information. Like in computer system, there is also risk of virus and malware attack on mobile banking services. Some malicious code are writtento defect mobile banking like Zeus has used for attack on SMS banking and Zeus used for steal mobile transaction authentication such as password and pin number. So it is also big security issue and challenge in mobile banking services.

D. Wireless network:

All process of mobile banking services is done in wireless mode, so there is also a security risk in mobile banking services. Mobile device component contact with cell site and dedicated circuit or microwave for the communication services so if there is any weakness in any part of this network then risk of attack is increases, so we have to secure all these network and networkdevices for a good security services.

E. Authentication issue:

In mobile banking there is authentication risk at the login time or when we access our account through the mobile system, because in mobile banking for the authentication PINS numbers are used but PINS authentication method is an old method and many security issues such as password and id theft were by stealing the password and id unauthorized access may be possible by getting the password attacker may access our account. Another risk related to authentication in mobile banking as if mobile has stolen then attacker may get the password through the mobile and can access the account by using your id and password.

The need of the study is also to find out solutions for these challenges, so that banking industry can run smoothly and see what the future of mobile banking services in India is.

6. OBJECTIVES OF THE STUDY

The overall objective of the study was to examine challenges facing mobile banking services in reaching customers in INDIA.

Specifically, the study aimed at:

- 2.** To examine, if banks customers are aware of the services offered by banks on mobile banking.
- 3.** To find-out whether the security & privacy issues of mobile banking is becoming a barrier in extending their services to many customers.
- 4.** To determine whether the customers are using mobile banking services in their day-to-day chores.
- 5.** To analyze the future prospects of the m-banking services of the Indian Banking Industry.
- 6.** To study the challenges faced by Indian banks in adoption of technology and make recommendations to tackle these challenges.
- 7.** To propose suggestion to improve the Mobile Banking Services based on findings.

8. HYPOTHESIS OF THE STUDY

With an objective to know about the prospects and issues of mobile banking in India, reviews of literature have been done.

However, the related published literature on the area of study is quite meagre. Hence, the following hypotheses are framed:

HYPOTHESIS 1:

NULL HYPOTHESIS (H0): Customer awareness and illiteracy is not a significant issue in mobile banking.

ALTERNATIVE HYPOTHESIS (H1): Customer awareness and illiteracy is a significant issue in mobile banking.

HYPOTHESIS 2:

NULL HYPOTHESIS (H0): Security and privacy is not a significant issue in extending mobile banking services.

ALTERNATIVE HYPOTHESIS (H1): Security and privacy is a significant issue in extending mobile banking services.

HYPOTHESIS 3:

NULL HYPOTHESIS (H0): Banking customers are not using mobile banking in their routine life.

ALTERNATIVE HYPOTHESIS (H1): Banking customers are using mobile banking in their routine life.

HYPOTHESIS 4:

NULL HYPOTHESIS (H0): There is negative prospect for mobile banking in India.

ALTERNATE HYPOTHESIS (H1): These is positive prospect for mobile banking in India.

RESULTS AND FINDINGS

Here we discuss presentation of findings and discussions. Several statistical and analytical methods and tools were used for analyzing the gathered data from the survey. Tables, graphs and column charts have been used as graphical tools to show analysis of data.

The first part of the questionnaire was about background characteristics of the respondents. The second part deals with knowledge of bank customers on the services offered by banks on mobile banking. Moreover, the third part concentrates on challenges facing mobile banking services in extending their services to more customers. The fourth part determines whether people are extensively using mobile banking in India. And the last part was about the perspective of respondents about mobile banking future.

9.1. CHARACTERISTICS OF THE RESPONDENTS

The characteristics of the respondents were sought in order to determine various aspects challenging m-banking services in reaching customers in India. These include age, sex, level of the education and occupation background of respondents.

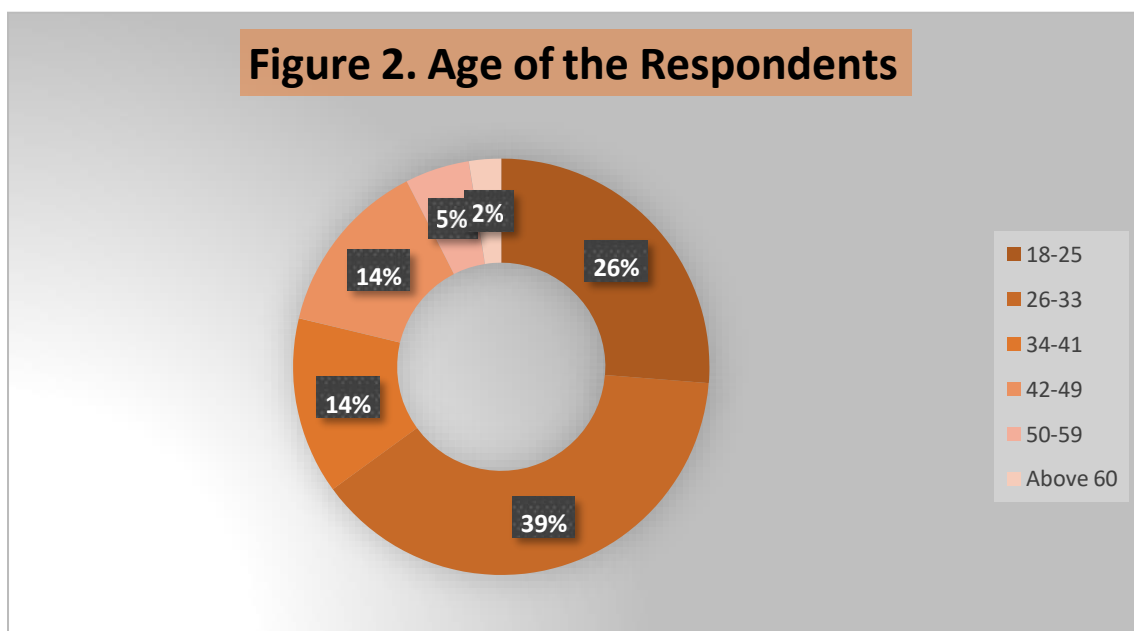
9.1.1 Age of the Respondents

Age of the respondents was important to this study in order to determine who were mostly involved in mobile banking. The results in Table 9.1 show that out of 80 respondents 39% were the age between 26 and 33. This was due to the fact the age comprises of many people and adult who are likely to be early technology adopters.

Table 9.1 Age of Respondents

Responses	Frequency	Percentage (%)
18-25	21	26
26-33	31	39
34-41	11	14
42-49	11	14
50-59	4	5
Above 60	2	2
Total	80	100.0

The same information is portrayed using pie chart as shown in Figure 2.



The majority of the mobile banking users were between 26 - 33 years and 18 - 25 years old. This implies that youth were active in using varieties of services offered by mobile phones. It was also implied that youth were active in making financial transactions through mobile banking in India.

9.1.2 Sex of the Respondents

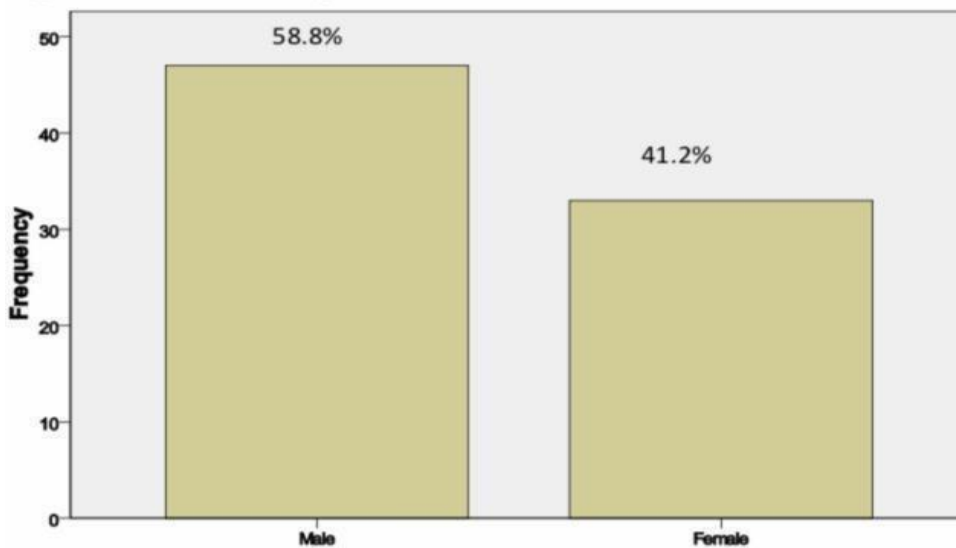
Sex of the respondents were asked in order to find out the contribution and challenges facing both sexes in using financial services specially mobile banking in India. The findings are as shown in Table 9.2 indicate that 58.8% were male while 41.2% were female.

Table 9.2. Sex of the Respondents

Responses	Frequency	Percentage (%)
Male	47	58.8
Female	33	41.2
Total	80	100.0

The results are also summarised using the bar charts as shown in Figure 3 which shows the percentage of both the sexes.

Figure 3: Sex of the Respondents

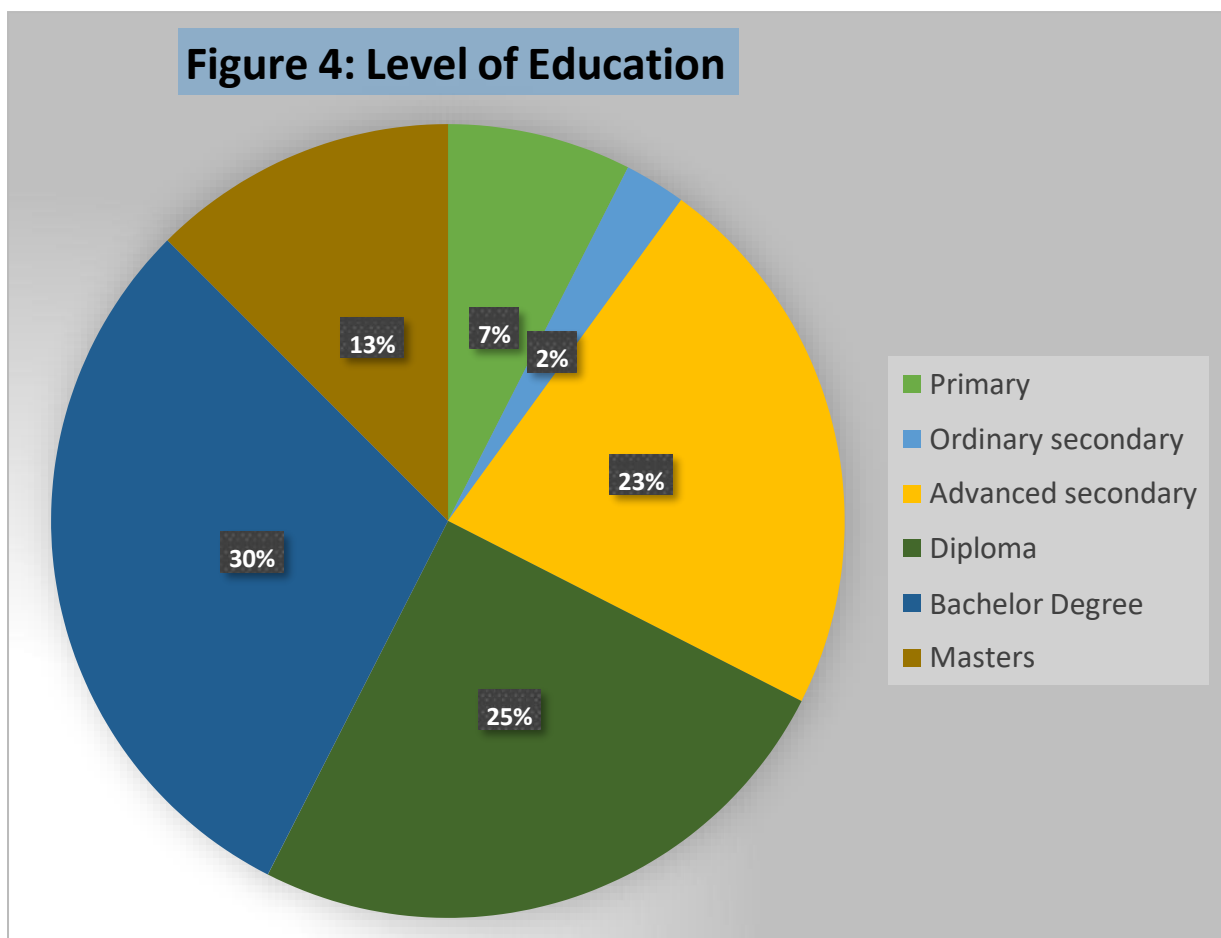


The majority of the findings were male due to their employment in various industries. This was due to the cultural factors where as women were not much given education which could make them either self-employed or house makers.

9.1.3 Level of Education

Level of education of respondents was asked in order to determine whether application of mobile banking was also associated with education level of an individual.

Figure 4. Shows that out of 80 respondents, 30% were bachelor degree holders and 25% had diploma. Thus, majority were degree holders as the figure indicates.



The findings shows that the majority of users of mobile banking in India had advanced secondary education to bachelor degree holders as they did not differ much from each other.

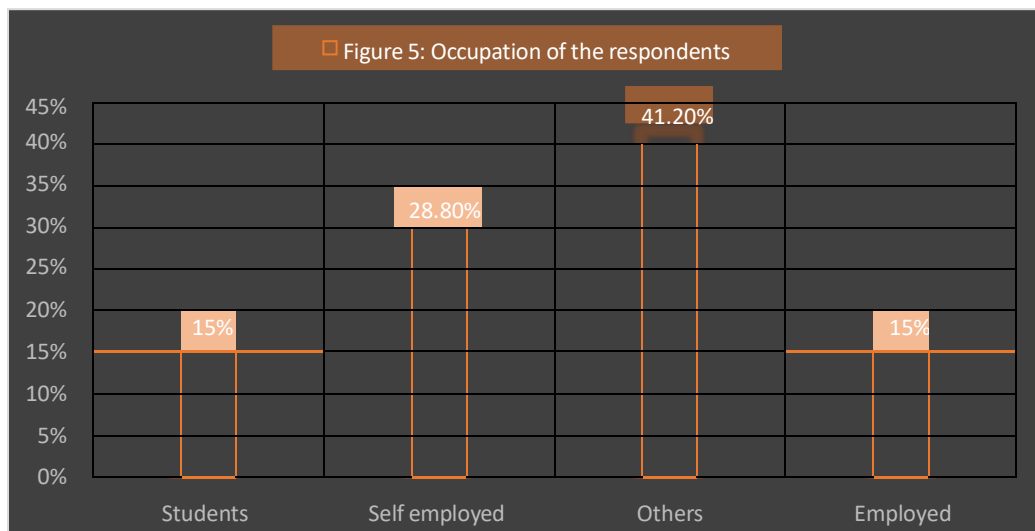
9.1.4 Occupation of the Respondents

It has been observed that individual occupation contributes to the economy of the country. Since mobile banking is also related to poverty eradication, this study wanted to know how individual occupation had been contributing to uses of mobile banking in India. Table 9.3 shows that 41.2% that is 33 of the respondents were employees of different companies or firms.

Table 9.3 Occupation of Respondents

RESPONSES	FREQUENCY	PERCENTAGE (%)
Students	12	15.0
Self-employed	23	28.8
Others	12	15.0
Employed	33	41.2
Total	80	100.0

The same results are also summarized using the following bar chart as showing in Figure 5.



These findings implied that occupation of an individual played significant effect in using mobile banking. Those with occupations were the most users of mobile banking services compared to students and others who had no job. Those with the reliable job and students were suffering from accessing income and therefore made them difficult to engage actively in mobilebanking.

9.2 KNOWLEDGE OF RESPONDENTS ABOUT MOBILE BANKING SERVICES

Knowledge of customers on the services offered by any particular bank is very important in using them effectively. If customers are not aware or have no knowledge about the services provided by the banks, they are likely not to use them effectively.

Technological innovations play a significant role in improving the efficiency of the banking sector as well as reducing the costs of banking transactions for customers. In this course, the study wanted to know whether customers were aware of mobile banking services.

The following were the results:

9.2.1 Respondents with accounts at Bank

The results obtained showed that out of 80 respondents 100% were account holders at bank. According to them, most of them had enough experience on mobile banking.

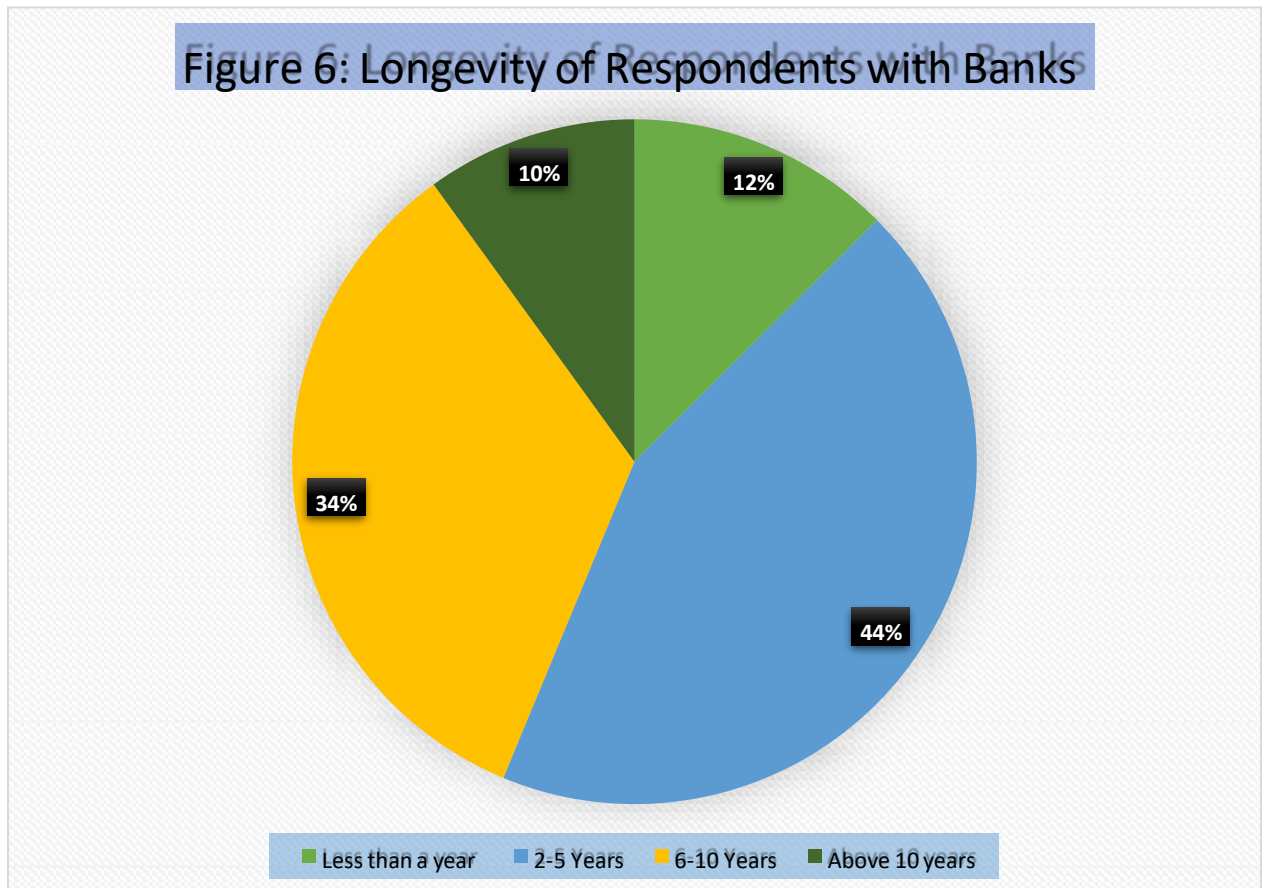
Table 9.5 summaries the results:

Table 9.4 Respondents with Accounts at Bank

Responses	Frequency	Percentage
Yes	80	100.0
No	0	0
Total	80	100.0

9.2.2 Longevity of Respondents with Banks

The study wanted to know how long respondents had been bank customers. The results indicated in Figure 6 shows that out of 80 respondents, 43.8% had been with banks with 2-5 years.



The respondents revealed different answers. Some said that they have been bank customers for almost five years and other said that they had been bank customers for more than 10 years.

Generally, the majority showed that they had been bank customers for not less than ten years. Thus, indicated in 9.1.1, most of them were youth who were not older and therefore their longevity as bank customers could not extend beyond their age.

9.2.3 Awareness on the Services Offered by Mobile Banking

The study wanted to know whether respondents were aware of the services offered by banks on mobile banking. The results in Table 9.5 indicate that out 80 respondents, 58.8% respondents knew a few services provided by banks on mobile banking.

Table 9.5 Awareness of mobile banking services

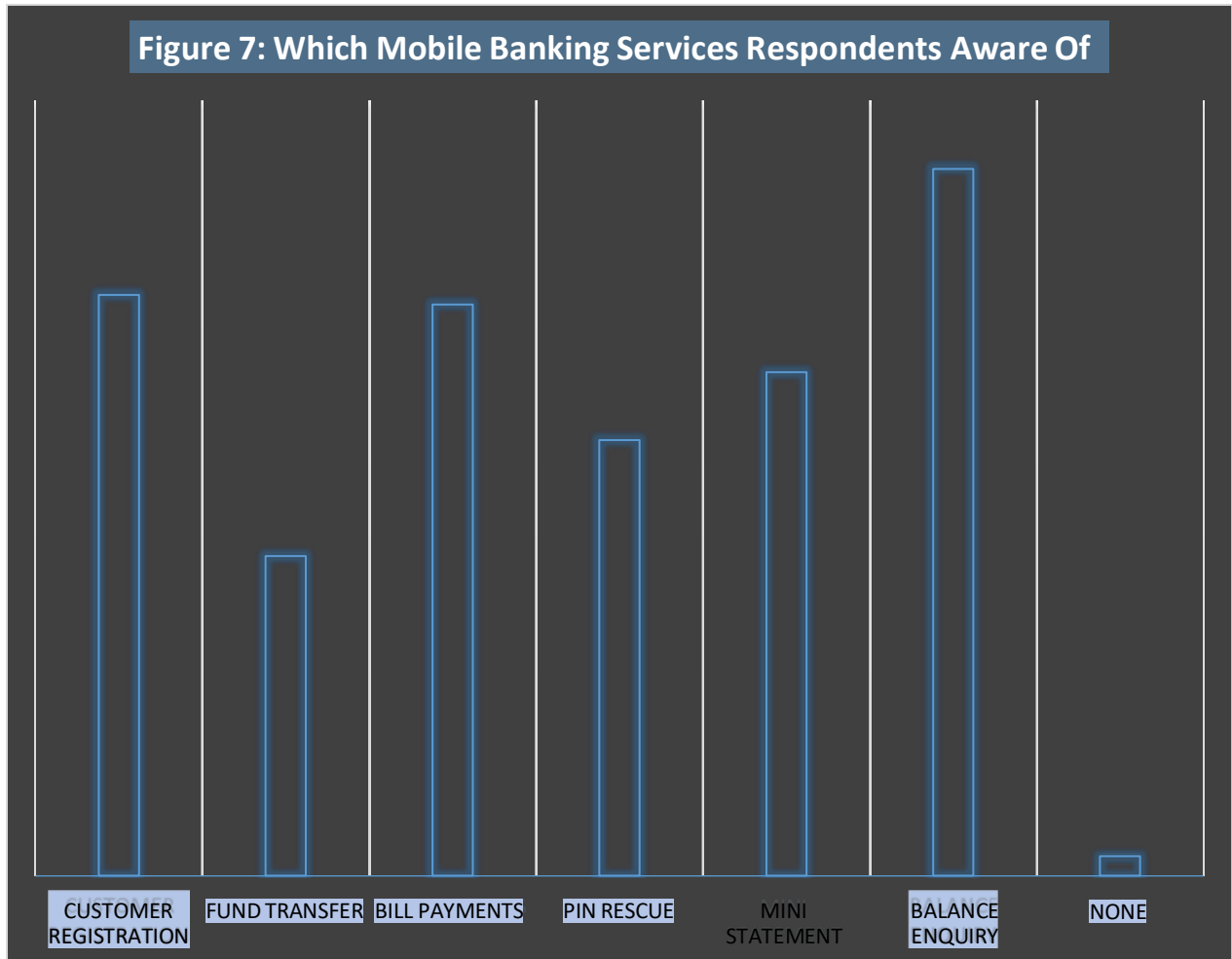
Responses	Frequency	Percentage (%)
I know all of them	28	35.0
I know few of them	47	58.8
I know only one	5	6.2
Total	80	100.0

Thus, it was revealed that respondents were aware of the services offered by banks on mobile banking. This was because all the respondents were bank account holders. Since the majority of them knew few banking services, it implied that customers are not utilizing full the services offered by banks. In addition, Table 9.7 can support this.

9.2.4 Which Mobile Banking Services Respondents Aware Of

The study wanted to know how many mobile banking services respondents had idea about or heard of. For this, they were asked about various mobile banking services.

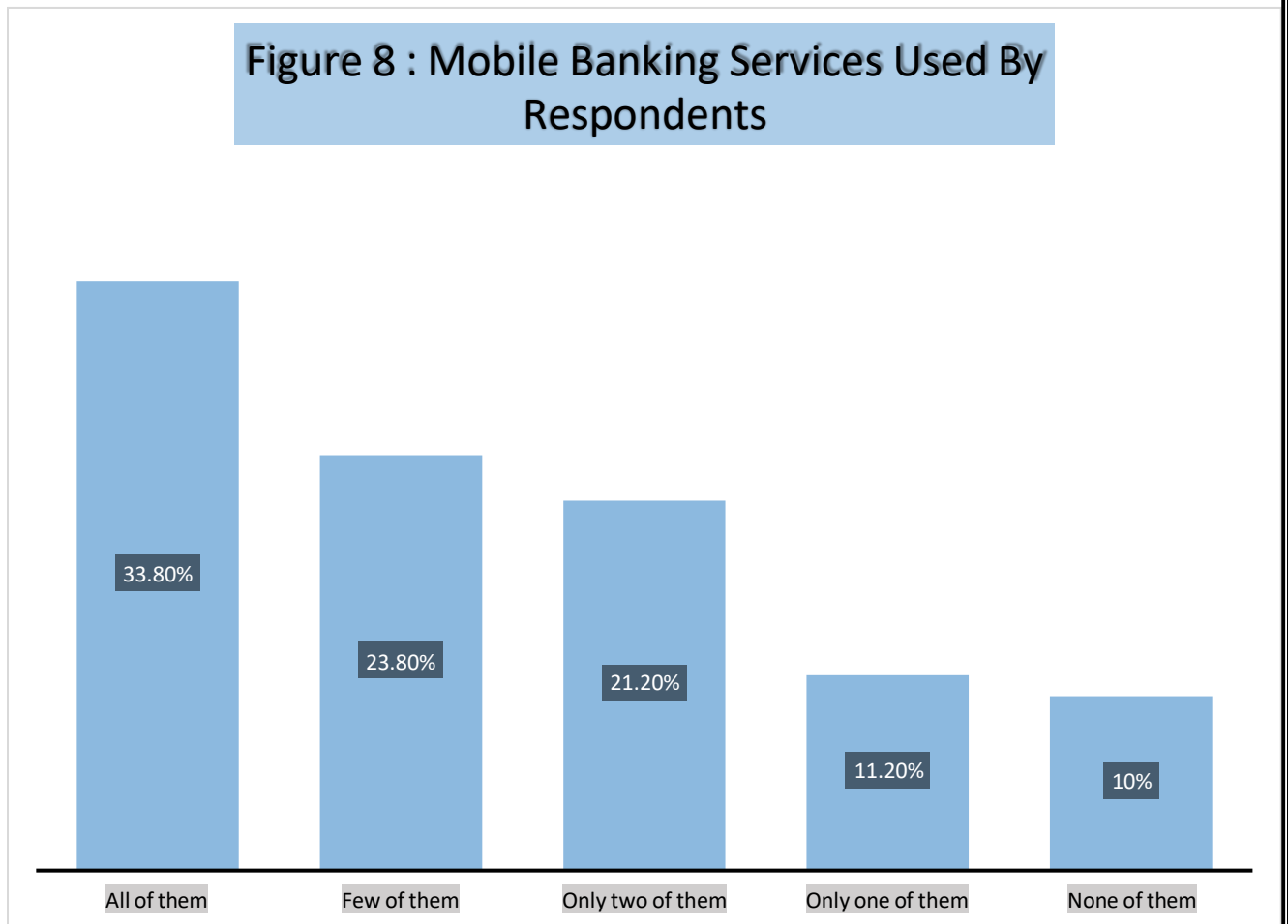
Figure 7. Shows the responses of this.



This bar graph indicates that most of the bank customer knows about various services offered by banks. Only few of them had no idea about mobile banking services. According to survey among people who know about services have heard most of the services only few have not heard of any of them.

9.2.5 Mobile Banking Services Used By Respondents

The study wanted to know mobile banking services used by customers. The findings in Figure 8 show that 33.8% of the respondents were using all services offered by banks on mobile banking.



Through the survey, it was found that people were using mobile banking services according to their needs. Others were not using it effectively because they did not know how to use them or are not aware of it.

9.3 CHALLENGES FACING MOBILE BANKING EXTENDING THEIR SERVICES TO MORE PEOPLE

The introduction to any service may result to challenges in its uses. The challenges can be associated with extending the services to more people or customers.

Mobile banking associated the following challenges: on the handset operability, it was found that 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 Java ME and others support SIM Application Toolkit, a WAP browser, or only SMS.

Another challenge was security.

It was found that security of financial transactions, being executed from some remote location and transmission of financial information over the air.

It was also found that there was a challenge of mobile banking infrastructure to handle exponential growth of the customer base. Banks unable to meet the performance and reliability expectations may lose customer confidence. The study wanted to know the challenges facing mobile banking services in extending their services to many customers. The following were the results obtained:

Respondents Awareness on Making Transactions

Awareness on using a service among customers or users is very important for it to prosper. The study wanted to know whether respondents were aware of making transactions through mobile banking services.

The findings as indicated in Table 9.6 show that 86.2% were aware of making transactions via mobile banking.

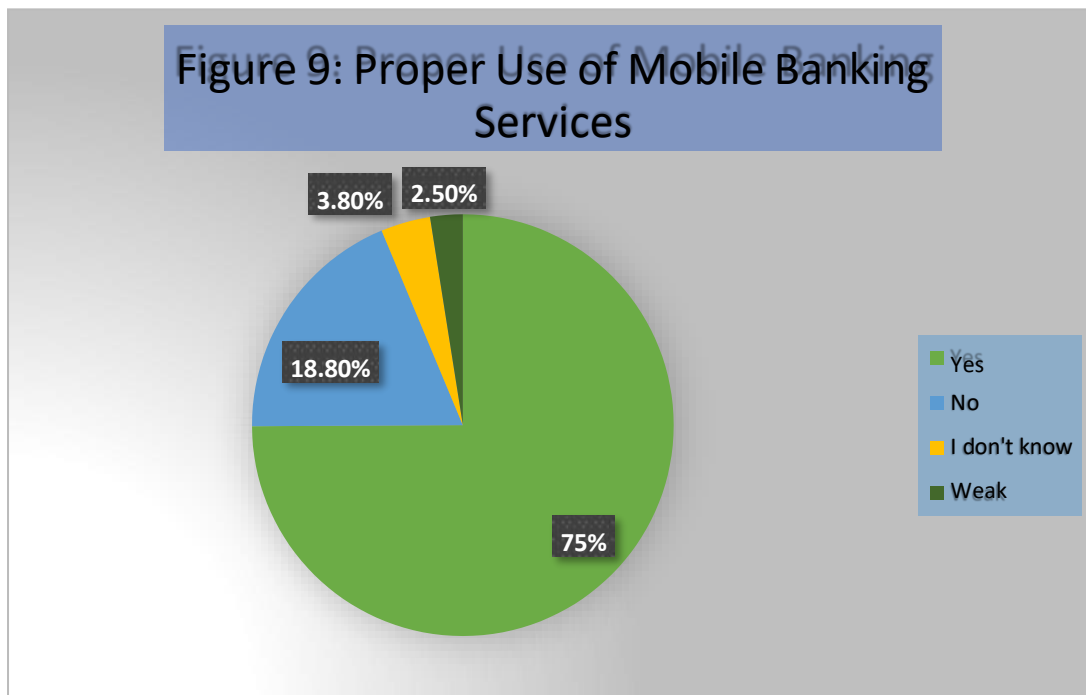
Table 9.6 Respondents Awareness on Making Transactions

Responses	Frequency	Percentage (%)
Yes	69	86.2
No	11	13.8
Total	80	100.0

The survey showed that respondents were aware of making transactions through mobile banking. The findings show that the majority of the respondent were aware of making transactions through mobile banking. This implies that most of them were educated and thus there were early adopters of technology.

9.3.1 Proper Use Of Mobile Banking Among Respondents

The most important thing is to know it and use it as recommended. This study wanted to know whether respondents were using mobile banking properly. The results in Figure 8 show that out of 80 respondents, 75% were using these services properly.



Through the findings, it was revealed that the majority of the respondents were using the services properly. This implied that most of the respondents might be the learned ones.

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 two.

Again, Singh (2007) say that 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 however; Chipchase (2005) describes those who were not using mobile banking, that their beliefs, misunderstandings,

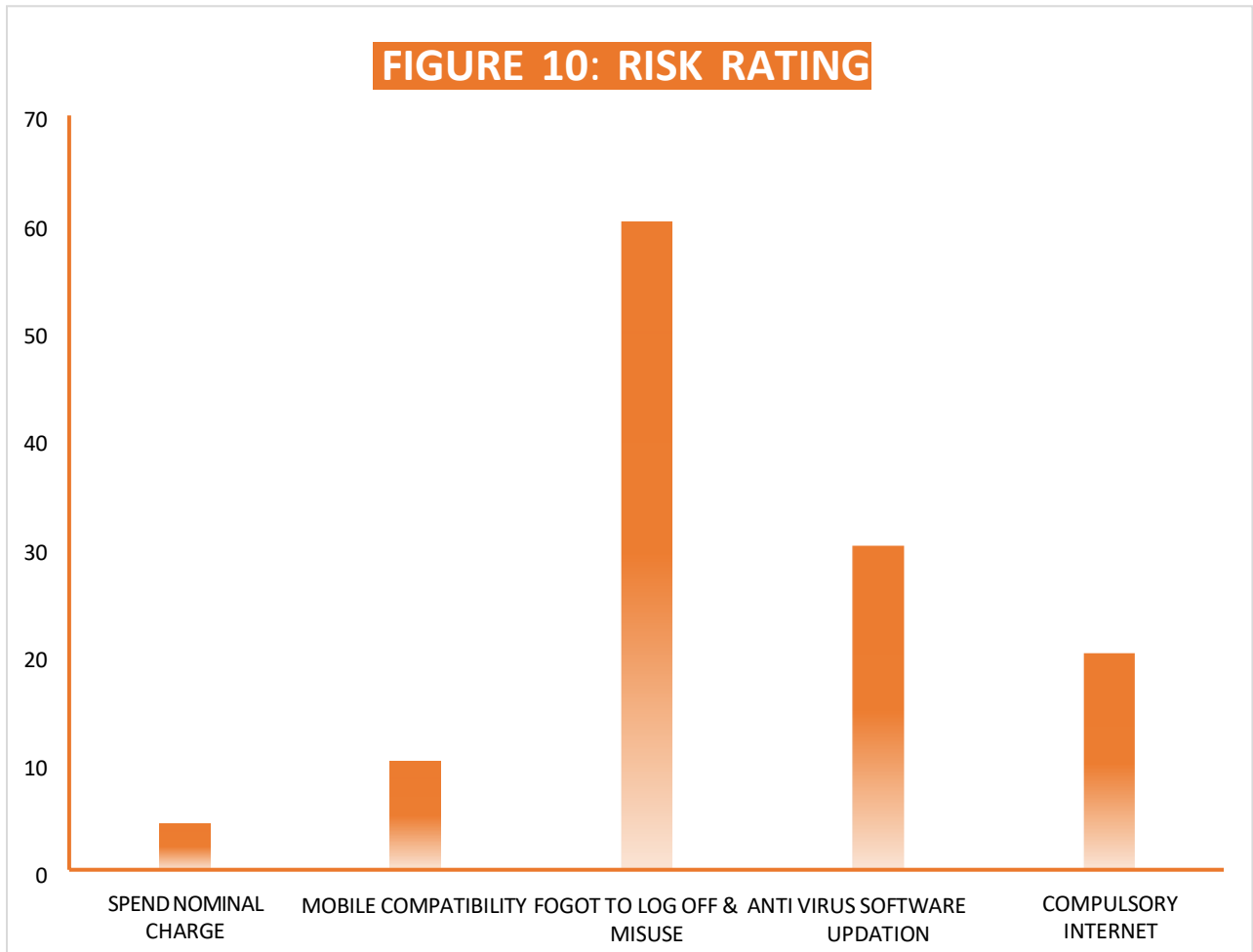
habits, and concerns must be addressed if people who are used to storing money in cash are asked to store it “in” a handset.

Generally, it was said that the main challenges facing mobile banking in extending its services to many customers were network failure or unavailability of network in some areas, fraud or theft of customers’ money, little knowledge of customers in using the services, system error and limitation of transaction.

All of these made the services not reaching many people as possible.

9.3.3. Identify the Major Issue in Mobile Banking

Customers mostly prefer ATM and Online Services. Many because of the above limitations do not prefer Mobile Banking. Customers have to aware about Mobile Banking Services before usage. The awareness and Risk about Mobile Banking was tested by 80 Customers and Comparable with other risk factor most pointed out the “Forget to Log off”



The above collected data also indicates that 70% of Customers mentioned the

“Forget to Log off & Misuse” of Mobile Phones due to theft is a major risk factor in the above list.

The researcher also suggested an idea to improvise the mobile banking services in therecommendations.

9.4 WHETHER MOBILE BANKING IS USED BY CUSTOMERS EXTENSIVELY

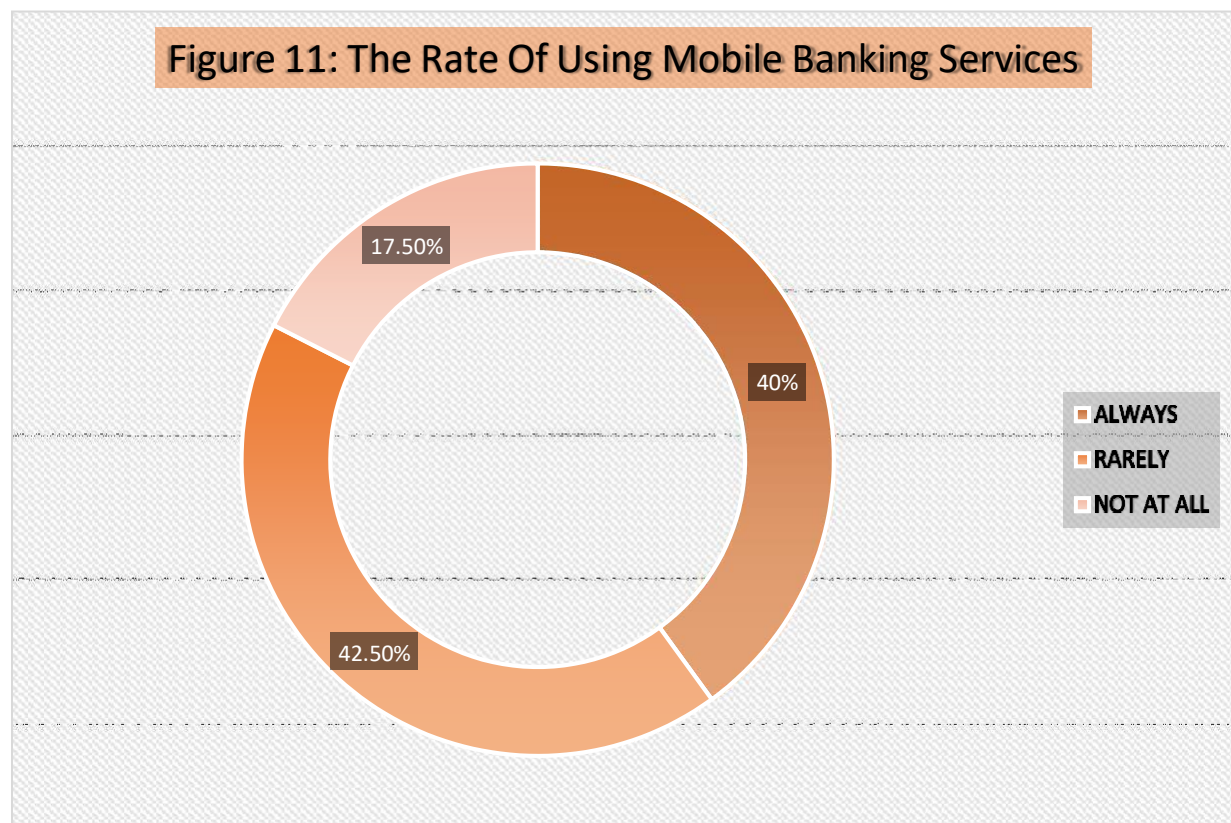
Extensive use of the service has many implications. It may imply that the service is good to customers as it may be free from harm to customers. It also concern with the extent to which deliberate efforts were taken to make sure that the service is known to customers.

The study wanted to know whether customers were extensively using mobile banking services.

The results were as follows:

9.4.1 The Rate of Using Mobile Banking Services

The study wanted to know the rate of using mobile services among respondents. The results in Figure 9 show that out of 80 respondents, 42.2% were using the services rarely while 40% were always using the services.



The survey showed that the rate of using mobile banking depended on financial ability of an individual and business circulation. These results implied that there were no frequent uses of mobile banking among customers due to various reasons.

Table 9.7 shows that people were not frequently using the services due to insecurity, which counted 42.5% while high charges counted 22.55% of the respondents.

Table 9.7 Reasons for not using mobile banking services

Responses	Frequency	Percentage (%)
Inaccessibility	8	10.0
Insecurity	34	42.5
High charges	18	22.5
Never heard of services	11	13.8
Unreliability	9	11.2
Total	80	100.0

These results concur with other empirical studies on mobile banking. For example, Cracknell (2004) and infoDEV (2006) assert that users in the developing world, on the other hand, the appeal of these m-banking/m-payments systems may be less about convenience and more about accessibility and affordability.

Furthermore, infoDEV (2006) argue that mobile phone operators have identified m-banking/m-payments systems as a potential service to offer customers, increasing loyalty while generating fees and messaging charges.

However, those observations also differed with those of Donner and Camilo (2008) who says that 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.

Again, Masinge (2010) found that the most critical factor for the customer was high cost and untrust due to insecurity. Thus, the service should be affordable and trusted as trust was found to be significantly negatively correlated to perceived risk.

Nyakiha (2009) noted that despite the positive perception toward mobile banking services customers do face challenges and security threats when utilizing the services.

9.4.2 Respondents Satisfaction with Mobile Banking Services

Customers' satisfaction is one of the important aspect that can attract them to use the service extensively.

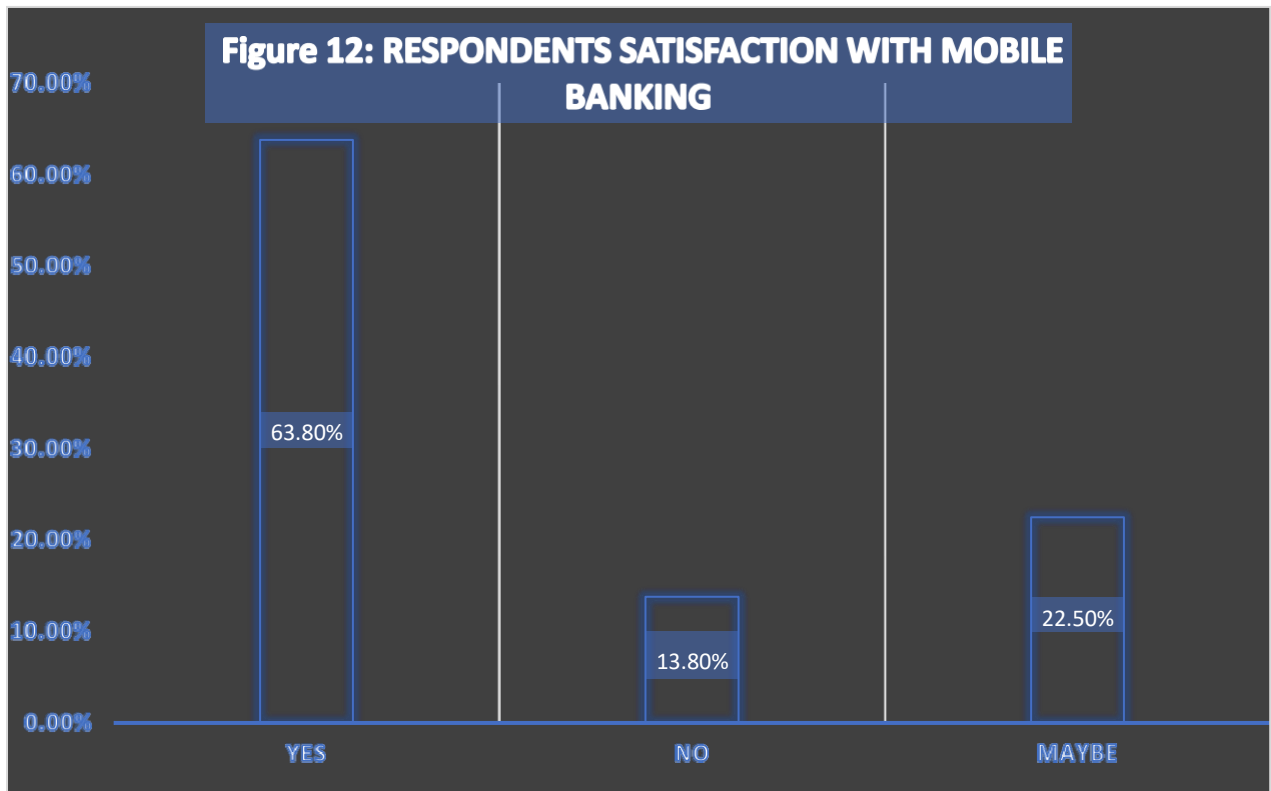
The study wanted to know whether customers were satisfied by the services offered through mobile banking.

Table 9.8 shows that out of 80 respondents, 61.8% were satisfied with services offered.

Table 9.8 Respondents Satisfaction with Mobile Banking Services

RESPONSES	FREQUENCY	PERCENTAGE (%)
YES	51	63.8
NO	11	13.8
MAYBE	18	22.5
TOTAL	80	100.0

The same information can be portrayed by bar chart as showed in Figure 10.



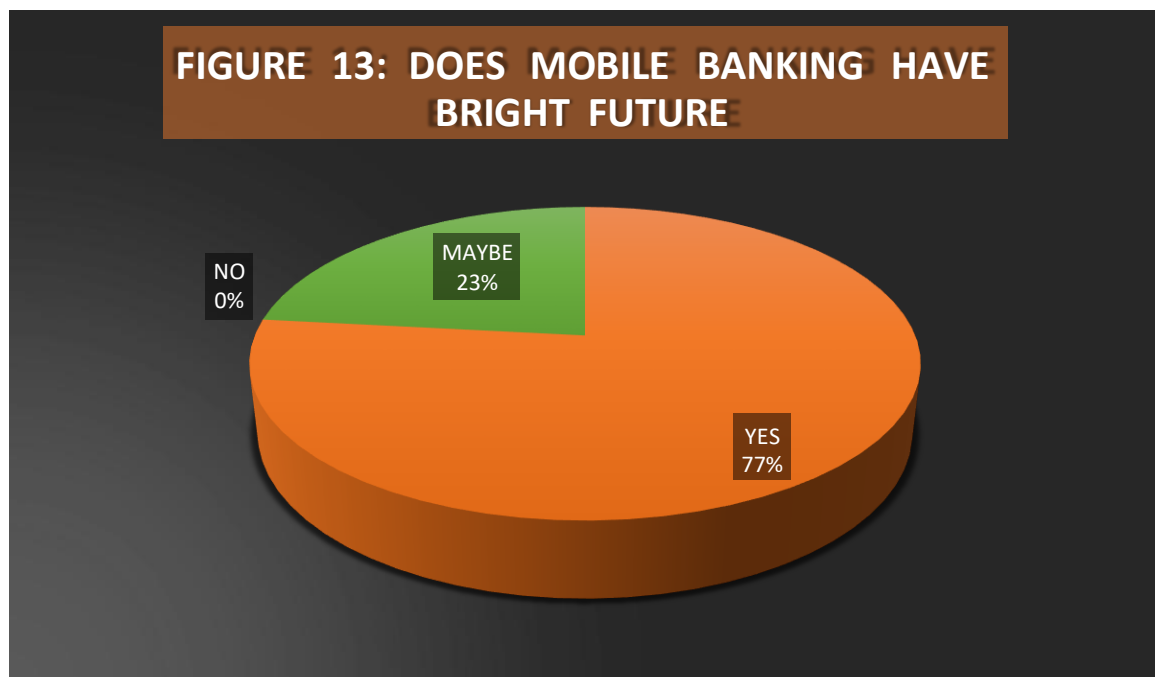
The survey findings showed that the majority of the respondents were satisfied with the services offered by banks through mobile banking.

These results implied that the services could attract many customers in a near future.

9.5 PERSPECTIVE OF CUSTOMERS ABOUT MOBILE BANKING FUTURE

This part is all about the bank customers' perspective on mobile banking, what is the future of mobile banking, why they are using it, why they are not using it.

9.5.1 IS THERE A FUTURE OF M-BANKING: IN RESPONDENTS PERSPECTIVE



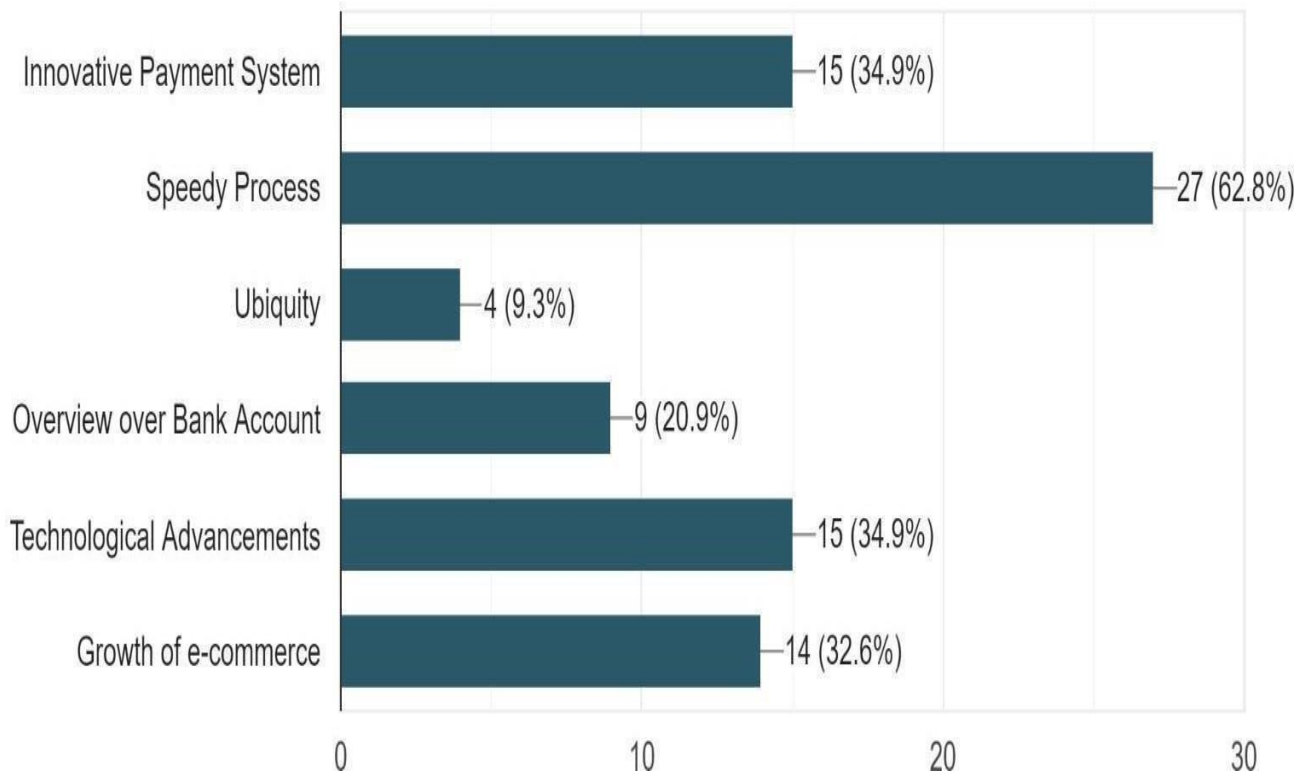
Therefore, according to the survey the majority of the respondents thinks that there is a bright future of mobile banking in India. Some of them were not sure but it is noted that no respondent had said “NO” for the bright future of m banking.

In addition, according to the secondary sources, India has a great prospect to leverage the potential of m banking and build a cash light economy. For this, many reforms and enrolment drives which have been undertaken by the Reserve Bank of India (RBI) and the Government of India over the last five years to give drift to the financial inclusion agenda.

The regulatory body RBI now taking more and more innovative steps and provide various guidelines to banks for protection of customer account security on mobile website and applications

9.5.2 UNIQUE FEATURE WHICH WILL GIVE EDGE TO MOBILE BANKING

FIGURE 14

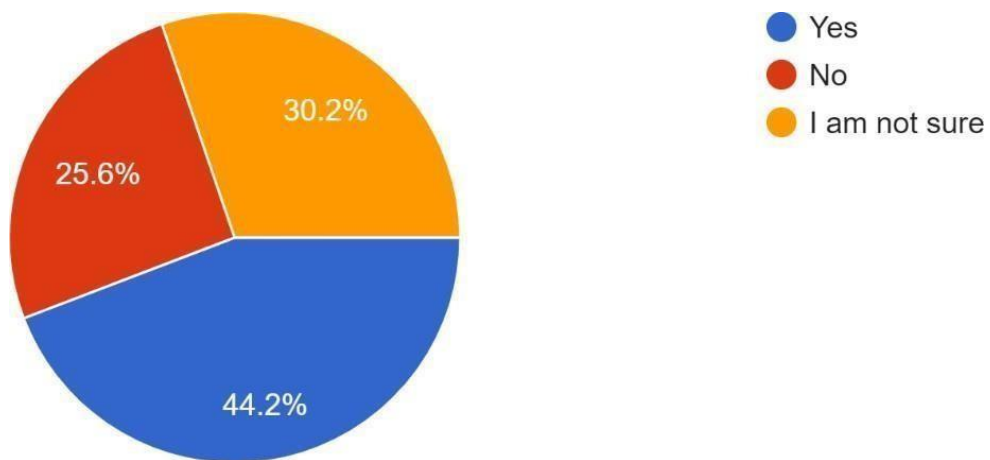


As according to the results, most people that is 62.8% thinks that “Speedy Process” will be decisive in giving edge to mobile banking in India.

The customer’s perception was found to be overwhelmingly positive. The most appreciated feature was SPEEDY PROCESS. UBIQUITY often cited as one of the most attractive features of mobile banking, but did not find high appreciation.

9.5.3 WILL RESPONDENTS SHIFT TO MBANKING COMPLETELY

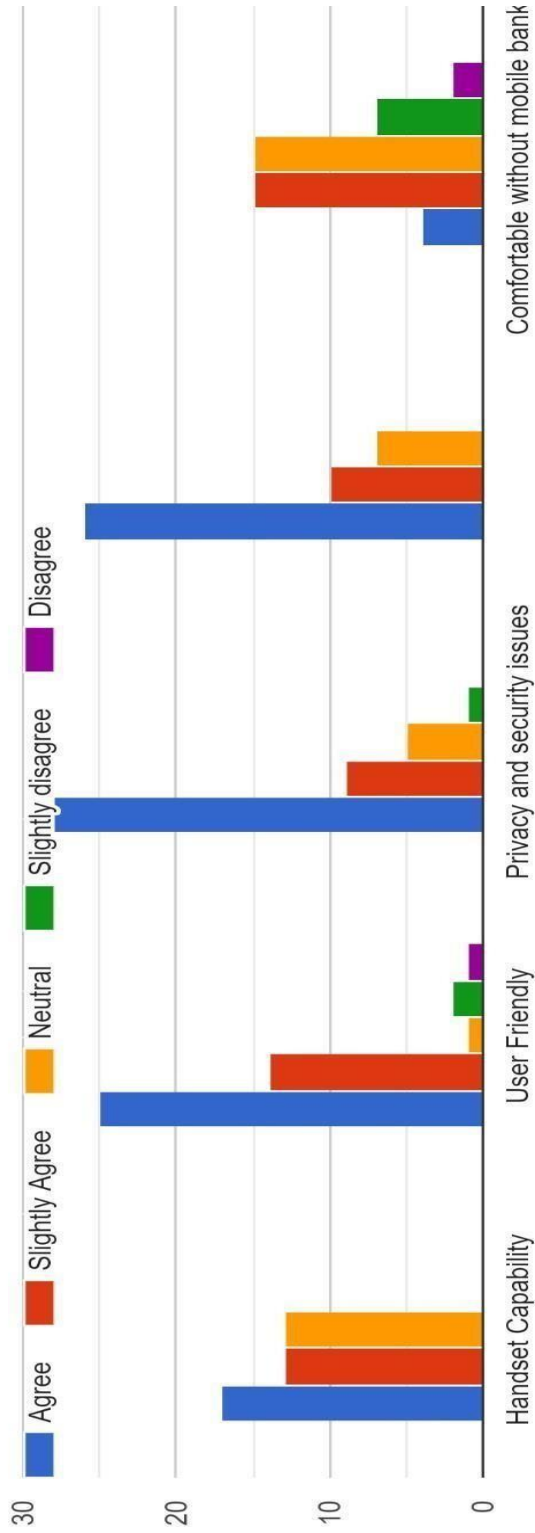
FIGURE 15



The survey clearly states that responses are mixed thoughts of respondents, some of them will shift to mobile banking completely, others are not sure and rest of the respondents will not shift, as they are used of traditional banking habits and they are comfortable without mobile banking. Still, majority of them are ready to shift. So, this indicates that by making all the customers aware about the services offered, mobile banking habits will grow in near future.

FIGURE 16

What do you think are the main challenges in extending mobile banking services to more customers?



9.

LIMITATIONS OF THE STUDY

The researcher had to face the following problems in collecting data from the respondents.

Usually, most of the respondents have not enough idea about mobile banking. Therefore, it was very difficult to collect actual data. Because the information of the respondents was supplied from their idea.

Most of the respondents do not fully use mobile banking which caused another problem to datacollection to the researcher.

Sometimes respondent could not answer to questions accurately and to the point.

In addition, it was difficult to get required information. Some respondents treated their information as confidential and therefore, it was difficult to have access to them. However, the respondents were assured that the required data were just merely for the academic research work and not otherwise.

Some respondents choose to provide wrong information during the primary data collection. They took this questionnaire just for fun. However, to solve this problem, respondents were informed about the objectives of the study and that motivated them to provide required information, which convinced them to provide valid information.

The respondents were usually busy with their work. Therefore, the researcher had to wait longer than usual to get the data.

Despite of all the challenges, the quality of the data is not compromised and it is noted that the mobile banking has a bright future.

There is a wider scope for the researchers to analyse other digitalized services also like plasticmoney, online transactions and mobile commerce facility provided by the banks.

10.

TESTING OF HYPOTHESIS

HYPOTHESIS 1

It is evident from the survey findings that most customers are not aware of mobile banking services that are being offered by various banks and that there is need of the banks side to make efforts in educating customers about these services.

Hence, **Null Hypothesis (H0)** that “Customer awareness and illiteracy is not a significant issue in mobile banking” is **REJECTED**.

And **Alternate Hypothesis (H1)**, “Customer awareness and illiteracy is a significant issue in mobile banking” is **ACCEPTED**.

HYPOTHESIS 2

It is also evident from the findings that bank customers are not using mobile banking extensively because they think it is not secure and it can affect their privacy.

Hence, **Null Hypothesis (H0)** that, “Security and privacy is not a significant issue in extending mobile banking services” is **REJECTED**.

In addition, **Alternate Hypothesis (H1)**, “Security and privacy is a significant issue in extending mobile banking services” is **ACCEPTED**.

HYPOTHESIS 3

It is also seen that though customers are using m-banking, but they are not regularly or everyday using these services in their day-to-day chores.

Therefore, **Null Hypothesis (H0)**, “Banking customers are not using mobile banking in their routine life” is **ACCEPTED**.

And **Alternate Hypothesis (H1)**, “Banking customers are using mobile banking in their routine life” was **REJECTED**.

HYPOTHESIS 4

Through the findings, it is evident that customers or respondents think there is a bright future of mobile banking in banking industry because of its various innovative features and because of speedy process.

Therefore, **Null Hypothesis (H0)**, “There is negative prospect for mobile banking in India” is **REJECTED**.

In addition, **Alternate Hypothesis (H1)**, “There is positive prospect for mobile banking in India” was **ACCEPTED**.

Mobile banking has become popular owing to the convenience that it gives its customers. You can access your account, pay bills, and make cash transfers through cell phone banking. It offers many benefits over internet banking and banking in person. With the wide range of mobile connectivity, mobile banking through cell phone can be accessed by anyone. In India, all the banks should start to follow the concept of mobile banking besides, existing financial services, which will help us in making our lives easier.

Therefore, this study discussed the challenges and prospects of mobile banking in India.

The study concludes that majority of the respondents knew few services offered by banks through mobile banking. Thus, customers could use many services as possible if they have the information about the services offered through mobile banking.

It is further concluded that the extension or growth of mobile banking was faced by fear of customers' insecurity and network failure/error and lack of knowledge. This limited the use of mobile banking services among bank customers.

Moreover, it is found out that despite the use of mobile banking among customers only few of them were using these services effectively. This according to them was due to inaccessibility, insecurity, high charges and unreliability of the services.

The current limitations of the mobile banking were also found out through study; those are:

- Mobile Banking offers non checking limited purpose account only.
- Most people have not enough idea about mobile banking yet.
- The customer who has already an account with the bank, he needs addition account for mobile banking.
- The customer who has the convention and mobile bank account both, he cannot access the conventional account through mobile account.
- Mobile banking is being used for fund transfer mainly. Customer does not keep deposit for long duration.
- Mobile banking has no various deposit schemes as of conventional banking yet.
- Mobile banking has no investment/loan schemes yet.
- The data is transferring through a third-party cellular network, so there is a security thread.
- Mobile bank has not interbank fund transfer facility yet.

The limitation of this study is that it focused only on the latest trends of m banking transactions and apps only, not considered the other m-banking modes like SMS, mwallet, m-pesa.

In the past few years, the Indian banking sector has completely transformed. The banks are facing many challenges and many opportunities are available with the banks.

Many financial innovations like ATMs, credit cards, RTGS, debit cards, mobile banking etc. have completely changed the face of Indian banking. Still there is a need to have more innovative solutions so that the challenges can be solved and opportunities can be availed efficiently by the Indian banks.

Research so far has outlined a diversity of challenges and innovations that exists in the m-banking arena. Numerous solutions have been tried and failed but the future is promising with potential new technology innovations.

Yes, it is concluded that there is vast scope for growth in mobile banking industry. In future, the concept of carrying cash or carrying wallet may become obsolete... Your mobile phone will be able to serve as a debit and a credit card.

In addition to IT edge and relatively dense population, the Government of India is clearly determined to achieve financial inclusion and is taking aggressive steps to see this happen.

The regulatory body RBI now taking more and more innovative steps and provide various guidelines to banks for protection of customer account security on mobile website and applications. Inclusion of non-banking population in financial mainstream will benefit all. There is also need to generate awareness about the mobile banking so that more and more people use it for their benefit.

12.

RECOMMENDATIONS AND SUGGESTIONS

Based on the findings of the study, the following recommendations are made:

In Mobile Banking Applications, whenever we need to avail financial services, we have to enter our User name and Password for using our account transactions. After completion of our task, Customers have to log off these services. However, sometimes, for regular usage Customers may forget or postpone to log off. At that time, this mobile application always keeps inside the corresponding Customer's Account Database. If the Customer's mobile phone is stolen, this means, automatically hackers can reveal all their transaction details very easily. This will become a very big issue. Banking Sector has to avoid this type of problems by using new emerging technologies.

At the Same time, Customers also have to be aware about these Services like How to use these apps, what are the security measures taken by the banking sector and how to avoid major risks from unauthorized persons.

The awareness creation among the existing customers and providing special benefits for using the mobile banking will increase the mobile banking users. Once the customer becomes confident on technology, it will automatically increase the adoption of mobile banking in mass.

RECOMMENDATIONS ON CHALLENGES FACED IN ADOPTION OF MOBILE BANKING

Data has been collected from various sources; there is a combination of both primary and secondary data that has been used in this research to find out these challenges.

a) Handset operability: There are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking services on any type of device. Some of these devices support Java Me and other support SIM application Toolkit, a WAP browser, or SMS only. This is because of the manner in which mobile phones applications evolved over time, the device manufacturers focused on particular standard, and this led to a proliferation of applications (Oko egwale, 2008:2)

b) Mobile banking security: Security of financial transactions, being executed from some remote location and transmission of financial information over the air, is the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network services providers and the bankers' IT departments.

The above aspects need to be addressed to offer a secure infrastructure for financial transaction over wireless network: If the bank is offering a smart card based security, the physical security of the device is more important. There should be authentication of the device with service provider before initiating a transaction. This would ensure that unauthorized devices are not connected to perform financial transactions.

c) Scalability and Reliability: Another challenge for the banks is to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With mobilebanking, the customer may be sitting in any part of the world (anytime, anywhere banking) and hence banks need to ensure that the systems are up and running in a true 24×7 fashion.

d) Application Distribution: due to the nature of connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to website 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.

e) The most solemn threat faced by the banking sector is that the customers do not consider m-banking services safe and secure all the time. They cerebrate that there may be loss of data/money due to technical defaults.

f) There is lack of preparedness on the part of both i.e. Banks and customers in the adoption of incipient technological changes.

Therefore, there is a need on the banks side to remove these barriers and educate customers about mobile banking services.

RECOMMENDATIONS ON PROSPECTS OF MOBILE BANKING IN INDIA

Mobile banking is a Banking process without bank branch, which provide financial services to unbanked communities efficiently, and at affordable cost. The aim of the service is to bring more people under the umbrella of banking service.

Government thinks it has a great prospect, as it is a new technology in digital India, though it will take time for customers to get used to it.

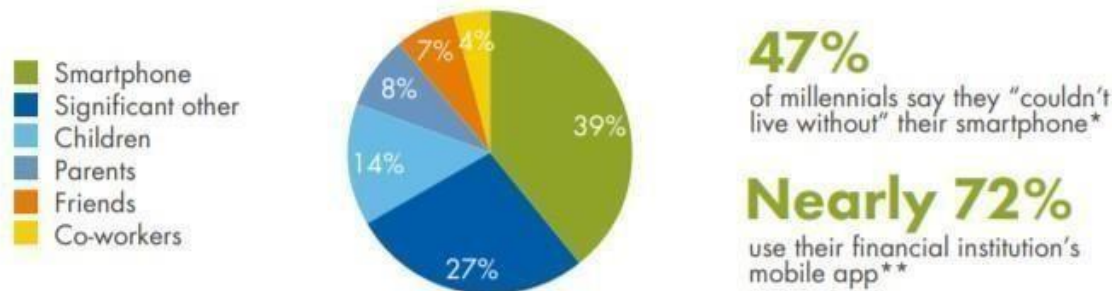
Mobile banking has a bright future in India, some of the ways to how?

Enlarge the customer base targeting mass market and millennials

First, they must diversify their offer beyond day-to-day banking. As such, by providing clients with a larger range of offers and services (including savings & investments and mortgages), they will be able to cover all the clients' needs. Therefore, their clients will not need to hold another account with a competitor. This should help targeting the mass-market segment, which usually is in relation with a single bank. The second main lever for mobile banks to increase their customer base is to offer a unique customer experience in order to target the millennials. Indeed, millennials (or generation Y) now outnumber baby boomers and represent the largest population for banks (80 million people in the US).

While they represent a natural target for mobile banks due to their digital and mobile appetite (see figure 1), the customer experience and mobile experience is key since bad apps make millennials twice more likely to switch banks than the overall population¹. Moreover, while attrition rate is low in the banking industry, acquiring young customer (i.e. millennials) is key to generate stable and increasing revenue with time. Banks are aware of the potential that this population represents and as such have started to make move to target them. For instance, in December 2015, Customers Bank took over Higher One in order to acquire its 2 million students' accounts in the US.

Figure 1: Millennials are addicted to their smartphones
Millennials most interactions on an average day



Mobile banks should aim larger customer targets, much larger than what online banks have been doing until now. Thus, the product offer and the customer experience must enable to address millennials and mass market but also entrepreneurs and SME, migrants and frequent travellers, or the elderly, as strong growth levers. Regarding the product offer, the size of smartphones is not a limit anymore and for the most complex products, mobile banks can rely on tablets. In terms of pricing and brand awareness, mobile banks should base their model on online banks' best practices such as a pay per use pricing, a well-managed community or a minimal physical presence through light branches. Furthermore, the acquisition strategy must lean on a progressive on boarding process with several stages. Mobile banks should offer more services to non-customers and leverage mobile capabilities to build a pedagogical learning experience until customer on boarding. Considering that the traffic on banks' digital channels is fragile (high but concentrated on basic usages and increasingly spread on numerous actors due to PSD2), the customer experience must enable to reinforce and diversify this traffic. Among the four principles we identified for a successful customer experience (differentiation, personalization, simplicity, high availability), differentiation might be the most important. Indeed, after massive investments in reproducing services already available on other channels, it is time to offer differentiating digital services, by reinventing services and focusing on usage value. It will bring banks to go beyond their traditional offer proposing for instance to entrepreneurs and SME services such as company registration, bookkeeping or invoicing.

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APPENDIX

**APPENDIX 1:
QUESTIONNAIR
E**

1. What is your name?

2. What's your age?

- 18 – 25
- 26 – 33
- 34 – 41
- 42 – 49
- 50 – 59
- Above 60

3. What's your gender?

- Female
- Male

4. What's your education?

- Primary
- Ordinary Secondary
- Advanced Secondary
- Bachelor Degree
- Master Degree
- Diploma

5. What is your occupation?

- Students
- Self Employed
- Employed
- Others

6. Do you have any bank account?

- Yes
- No

7. For how long have you been a bank customer of that bank?

- Less than 1 year
- 1-5 years
- 6-10 years
- Above 10 year

8. Do you know mobile banking services offered by that bank?

- I know all of them
- I know few of them
- I know only one
- I don't know any of them

9. Please, mention the mobile banking services you know of?

10. How many of mobile banking services do you use?

- All of them
- Few of them
- Only two of them
- Only one of them
- None of them

11. Are you aware that you can make transaction through mobile banking services?

- Yes
- No
- I don't know

12. Can you use these services properly?

- Yes
- No
- I don't know

13. How many times do you use mobile banking services?

- Everyday
- Few times a week
- Few times in month
- Only in emergencies
- Not at all

14. What do you think about the cost of mobile banking than traditional banking?

- Higher
- Lower
- Same
- I am not sure

15. If given a choice to switch to mobile banking completely rather than traditional banking will you choose it?

- Yes
- No
- I am not sure

THANKYOU FOR YOUR RESPONSE AND COOPERATION.

