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"A Study On Customer Acceptance Of Mobile Banking In India: An Empirical Analysis Of Perceived Usefulness, Security, And Trust"

Mr.Rakesh Mallikarjun
Research Scholar & Assistant Professor
Faculty of Business Studies
Sharnbasva University, Kalaburagi

Dr. B.S. Hugar
Professor & Chairman, MBA-Programme
Faculty of Business Studies
Sharnbasva University, Kalaburagi

Abstract: Mobile banking has emerged as a significant digital financial service delivery channel in India due to rapid smartphone penetration and digital transformation in the banking sector. Despite substantial investments by banks in mobile banking infrastructure, customer acceptance remains uneven, particularly across different age groups. Existing studies largely focus on technological factors; however, limited research examines the combined influence of perceived usefulness, ease of use, trust, satisfaction, and website convenience in the Indian context.

The present study aims to analyze customer acceptance of mobile banking services in India by examining five key determinants: perceived usefulness, perceived ease of use, satisfaction, assurance and trust, and website convenience. A descriptive research design was adopted. Primary data were collected through a structured questionnaire from 100 mobile banking users selected through convenience sampling. Percentage analysis was employed to analyze the data.

The findings indicate that perceived usefulness and ease of use significantly influence customer acceptance, while trust and security concerns remain major barriers among older respondents. Approximately 65% of younger respondents (below 35 years) expressed high acceptance levels, whereas nearly 40% of respondents above 50 years showed reluctance due to risk perception and lack of confidence in digital platforms.

The study concludes that enhancing user awareness, strengthening security features, and building trust through effective communication strategies are essential to increase mobile banking adoption in India. The results provide practical implications for banks to design customer-centric mobile applications and targeted digital literacy initiatives.

Index Terms - Mobile Banking, Perceived usefulness, Perceived ease of use, Trust, Website convenience, Security, intention to adoption

CHAPTER 1
INTRODUCTION

With the advent of new goods and services and the almost daily appearance of new channels, the banking industry has seen a profound upheaval in many emerging nations in recent times. Banks and their clients now have more flexibility than ever before thanks to the transition from conventional branch locations to new, or branchless, forms of service delivery.

The exponential rise of mobile penetration in almost every country and the lightning-fast development of new technology are largely responsible for this massive shift in the industry. In today's contemporary world, people in both developed and developing nations have embraced mobile banking as a means to effectively conduct commercial transactions.

Wireless telecommunications, including mobile phones, internet-enabled smartphones, and PDAs, have seen a dramatic surge in usage, alongside technological changes that have altered service delivery methods and channels and customer interactions with financial service providers. Growth of mobile banking services has been greatly aided by these advancements.

First kind of mobile banking, known as SMS banking, was established in 1999 and operated via text messages. As time went on, a plethora of European banks started providing customers with the option to bank on the go using mobile web platforms that used WAP. Proliferation of smartphones running Google's iOS and Apple's iOS sped up development of mobile banking apps. Consequently, mobile banking services grew and became ubiquitous.

When you have a mobile phone or smartphone with internet access, you may take use of financial services via mobile banking apps. It enables consumers to carry out financial transactions anytime and from anywhere. Through mobile banking, customers can deposit and withdraw cash, transfer money, stay updated on their account status, download account statements, and view account balances.

In addition, mobile banking allows customers to make investments in mutual funds, manage portfolios, pay bills, and access other services such as ordering a new cheque book. These facilities help customers remain independent of their homes, computers, and physical bank branches, making banking more convenient and accessible.

Advantages of Mobile Banking

1. Anytime, Anywhere Banking

Mobile banking allows customers to access banking services **24×7** from any location. Users can check balances, view statements, or transfer funds without depending on bank working hours.

2. Convenience and Ease of Use

With just a smartphone and internet connection, customers can perform most banking activities from home or on the move. This eliminates the need to stand in long queues at bank branches.

3. Time-Saving

Transactions such as fund transfers, bill payments, and recharges are completed **within seconds**. Mobile banking significantly reduces the time spent on routine banking activities.

4. Cost-Effective Banking

Mobile banking reduces costs for both banks and customers. Banks save on operational expenses, while customers save on travel expenses and service charges associated with branch visits.

5. Easy Fund Transfer Facilities

Mobile banking enables instant fund transfers through **UPI, IMPS, NEFT, and RTGS**. Money can be transferred between accounts quickly and securely.

6. Bill Payments and Recharges

Customers can pay electricity bills, water bills, insurance premiums, loan EMIs, and perform mobile/DTH recharges directly through mobile banking apps, avoiding late payments.

7. Better Account Monitoring

Users receive **real-time SMS and app notifications** for every transaction. This helps in tracking expenses, detecting unauthorized transactions, and managing finances effectively.

8. Enhanced Security Features

Mobile banking apps use advanced security measures such as **PINs, OTPs, biometric authentication (fingerprint/face ID), and encryption**, ensuring safe and secure transactions.

Disadvantages of Mobile Banking

1. Security Risks

Cybercrime, phishing, malware, & hacking may still compromise mobile banking accounts even with the best security precautions in place. If users share OTPs or passwords unknowingly, their accounts can be compromised.

2. Dependence on Internet Connectivity

Mobile banking requires a **stable internet connection**. Poor network coverage, especially in rural or remote areas, can interrupt transactions and cause inconvenience.

3. Risk of Mobile Phone Loss or Theft

If a smartphone is lost or stolen, unauthorized persons may access banking apps if proper security settings are not enabled, leading to financial loss.

4. Technical Issues and App Failures

Mobile banking apps may face **server downtime, bugs, or crashes**, which can delay transactions and cause frustration, especially during peak hours.

5. Limited Awareness and Digital Literacy

Many customers, particularly elderly people and those in rural areas, lack **digital skills**, making it difficult for them to use mobile banking safely and effectively.

6. Transaction Limits

Mobile banking services often have **daily transaction limits**, which may not be suitable for large-value transactions required by businesses.

7. Compatibility Issues

Mobile banking apps may not work properly on **older smart phones or outdated operating systems**, restricting access for some users.

8. Dependency on Mobile Devices

Mobile banking depends entirely on the availability and functioning of smartphones. **Battery drain or device malfunction** can prevent access to banking services in emergencies.

9. Errors in Transactions

Wrong account numbers, incorrect amounts, or accidental clicks may lead to **failed or incorrect transactions**, which can take time to resolve.

INDUSTRY PROFILE

As per RBI,banking industry in India is capitalized & governed. Country is financially and economically more advanced compared to many other countries in the world.

India has emerged as the most advanced among 25 countries offering Immediate Payment Service (IMPS) and has now achieved Level Five in the Faster Payment Innovation Index (FPII), making it the only country to do so.

A vast array of financial institutions make up India's banking system. These include 12 government-run banks, 22 private-sector banks, 46 international banks, 56 rural regional banks, 1,485 cooperative banks in urban areas, 96,000 cooperative banks in rural areas, and a number of cooperative credit societies.

The main purpose of banks or the banking industry is to keep customers' money safe and secure, encourage customers to make deposits, and help them protect their money against inflation. Banks also lend money to customers, firms, home buyers, and vehicle buyers in the form of loans such as personal loans, business loans, mortgages, and overdrafts. In addition, banks provide financial advice and related financial services such as insurance.

NEED FOR THE STUDY

- This study helps to understand the perception of people towards the usage of mobile banking.
- This research helps banks to identify the drawbacks of mobile banking in providing financial services.
- This study helps in bringing improvements and positive changes in mobile banking services.
- The study helps to enhance the relationship between banks and customers through a smooth and user-friendly mobile banking interface, enabling customers to easily adopt new technological upgrades.
- Research aims to identify factors effecting adoption of mobile banking.

SCOPE AND SIGNIFICANCE OF STUDY

Scope of research isunderstanding customers' intention for adopting mobile banking and to identify their needs and requirements in order to implement appropriate measures that can improve the adoption and acceptance of mobile banking services. The study also aims to understand customers' expectations towards mobile banking.

This research helps banks to develop new strategies for the growth and improvement of mobile banking by considering customer needs and preferences. The study covers key topics and theories such as **Perceived Usefulness, Perceived Ease of Use, Trust, Satisfaction, Website Convenience, and Barriers to Mobile Banking**.

Via our research, better understanding of customers' intentions towards acceptance of mobile banking and its services can be identified, which will contribute to making mobile banking a more effective and advanced modern technology in the future.

OBJECTIVES OF THE STUDY

Primary Objective

- To analyse customer acceptance of mobile banking.

Secondary Objectives

- To identify the determinants of mobile banking adoption.
- To assess the level of customer satisfaction with mobile banking services.
- To study the impact of mobile banking services provided by banks on customers.

LIMITATIONS OF THE STUDY

- The sample size was restricted, and data were collected from a limited number of mobile banking users.
- The conclusions drawn from the study are based solely on respondents' information and may therefore be subject to personal bias.

CHAPTER - 2
REVIEW OF LITERATURE

Addula (2025) emphasized that Generation Z adoption is strongly influenced by social factors, compatibility with lifestyle, and digital self-efficacy, while perceived cost acts as a barrier.

Jafri *et al.* (2024) carried out a systematic review of FinTech literature and emphasized the **central role of trust and security** as behavioural predictors in digital financial services adoption, and highlighted insufficient integration of security perceptions in earlier models.

Kumar *et al.* (2023) extended the UTAUT model to examine mobile banking adoption among Indian users and found that **perceived risk and perceived trust significantly moderate the relationship between behavioral intention and actual mobile banking usage**, underscoring the role of trust in converting intention into use.

Sanjeev et al.(2023) An empirical study on Indian mobile banking adoption demonstrated that **perceived risk and trust moderate how behavioral intention translates into actual system use**, indicating that trust can strengthen adoption even when perceptions of risk are present.

Mehta & Meera (2023) synthesized over 70 studies and concluded that convenience, security, service quality, and trust collectively shape customer satisfaction, which in turn drives acceptance and continued usage.

Samartha *et al.* (2022) applied a modified UTAUT framework to Indian mobile banking users and confirmed that **trust has a significant influence on acceptance intentions**, while security concerns and social influence also shaped usage behavior.

Rahaman, Abdul & Patchipulusu (2021) used qualitative interviews and focus groups to explore mobile banking adoption. Their findings reinforced TAM's relevance, showing that *behavioral attitudes* and *trust perceptions* strongly shape acceptance.

Pawar & Reddy (2021) found that perceived usefulness and ease of use, consistent with the Technology Acceptance Model (TAM), remain primary drivers of mobile banking adoption.

Amit et al. (2020) have stated that some of the aspects influencing the mobile banking are Valence, triggers, Quality, Consistency and volume of the applications.

CHAPTER – 3

RESEARCH METHODOLOGY

Research Design

Goal of a well-designed research study is to gather and analyze data in a way that is both efficient and relevant to research questions at hand.

The research strategy used in this study is descriptive in nature. Goal of collecting data from mobile banking users and customers is to get insights in their experiences, preferences, and issues.

Sampling Technique

A subset of population is chosen to be observed in order to learn more regarding wider population, usually for sake of statistical inference; this process is known as sampling in statistics. To better categorize items or people in population, every observation quantifies a property or qualities of that thing.

Sampling Design

In this research, sampling was carried out using **simple random sampling** and **snowball random sampling** techniques. These methods were chosen to ensure that participants were selected without bias, while also allowing the sample size to expand through referrals from initial respondents.

Sampling Area

The study was conducted among the users and customers of mobile banking services in **Kalaburagi city**.

Sources of Data

Primary Data

Primary data refers to information collected for the first time, fresh in nature, and original in character. In this study, primary data was obtained through a **field survey** using a structured **questionnaire**. The responses were systematically recorded from the participants to ensure accuracy and reliability.

Secondary Data

Secondary data refers to information that has already been collected by others and processed through statistical methods. In this research, secondary data was gathered from **websites, articles, and journals**, which provided additional insights and supported the analysis of mobile banking usage.

Structure of Questionnaire

Primary data for this research came from a questionnaire that was administered to sample. A questionnaire is a structured set of questions arranged in a definite order, designed to obtain responses from participants.

The questionnaire was organized into two main parts:

- **Demographic factors**: Questions related to age, gender, occupation, and other background details of the respondents.
- **Study variables**: Questions addressing the key variables of the research, such as perceived usefulness, consumer acceptance, perceived ease of use, satisfaction, security and trust, and website convenience.

- Questionnaire was mailed to respondents, who were expected to read and understand the questions and provide their answers in the designated spaces. Respondents completed the questionnaire independently, ensuring unbiased responses.

SAMPLING SIZE

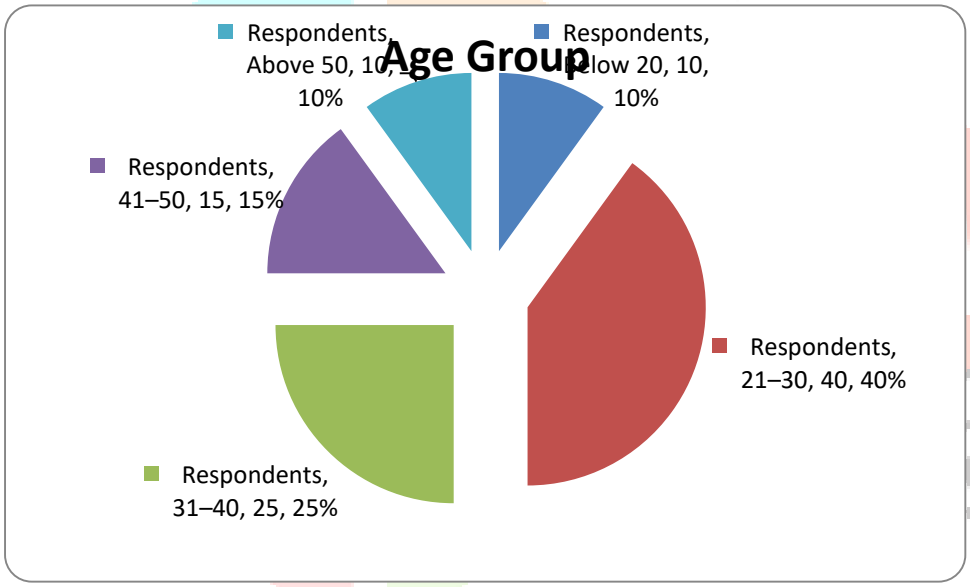
The sample size of the study includes about 100 respondents.

CHAPTER - 4

DATA ANALYSIS AND INTERPRETATION

1. Age Distribution

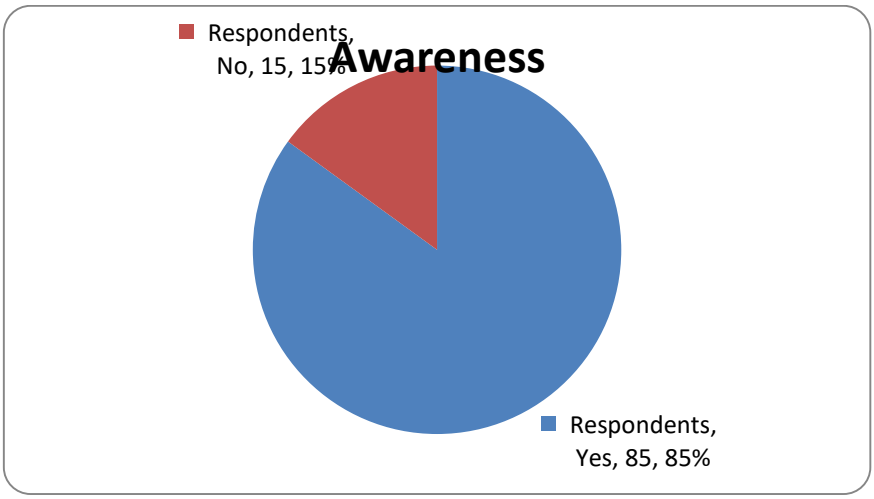
Age Group	Respondents	Percentage
Below 20	10	10%
21–30	40	40%
31–40	25	25%
41–50	15	15%
Above 50	10	10%



Interpretation: Majority of mobile banking users are young adults (21–30), showing higher acceptance among tech-savvy groups.

2. Awareness of Mobile Banking

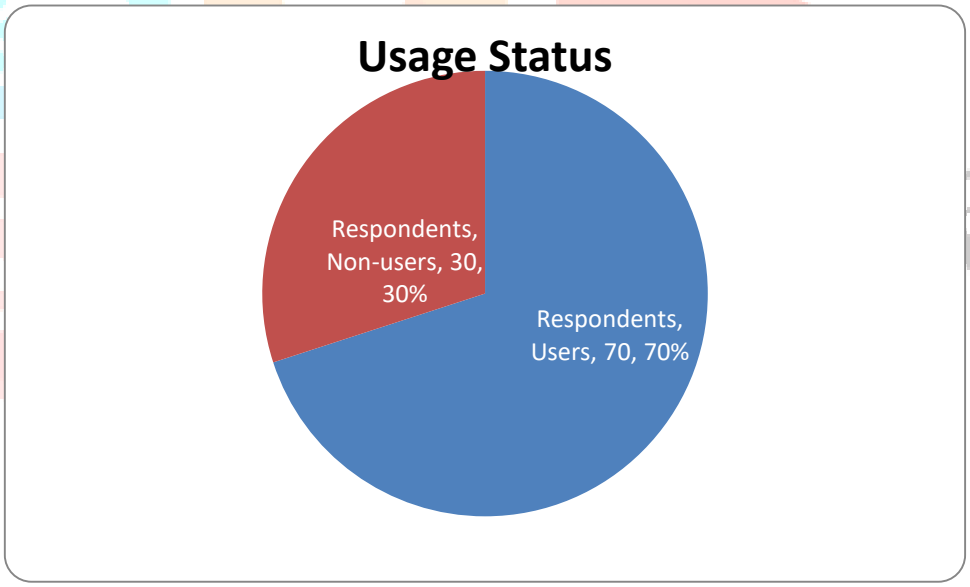
Awareness	Respondents	Percentage
Yes	85	85%
No	15	15%



Interpretation: Most respondents are aware of mobile banking services, indicating strong market penetration.

3. Adoption (Usage)

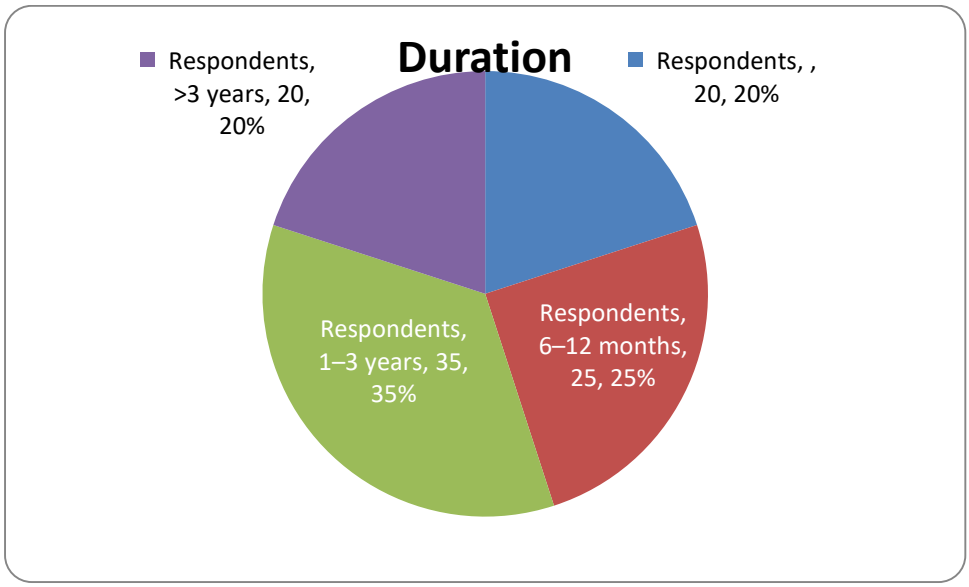
Usage Status	Respondents	Percentage
Users	70	70%
Non-users	30	30%



Interpretation: While awareness is high, actual adoption is lower, suggesting barriers like trust or usability.

4. Duration of Use (Among Users)

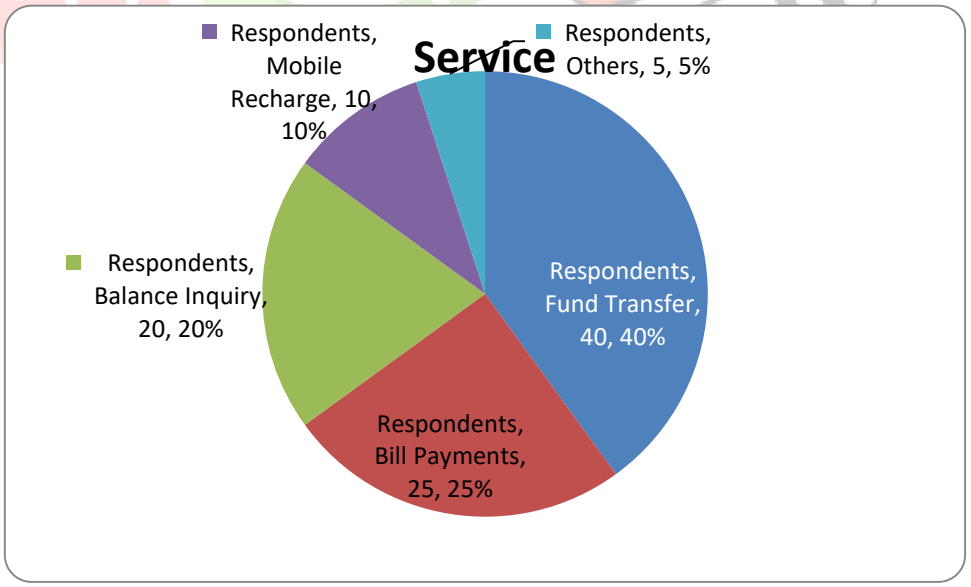
Duration	Respondents	Percentage
0-6 months	20	20%
6–12 months	25	25%
1–3 years	35	35%
>3 years	20	20%



Interpretation: A significant portion has been using mobile banking for 1–3 years, showing sustained acceptance.

5. Services Used

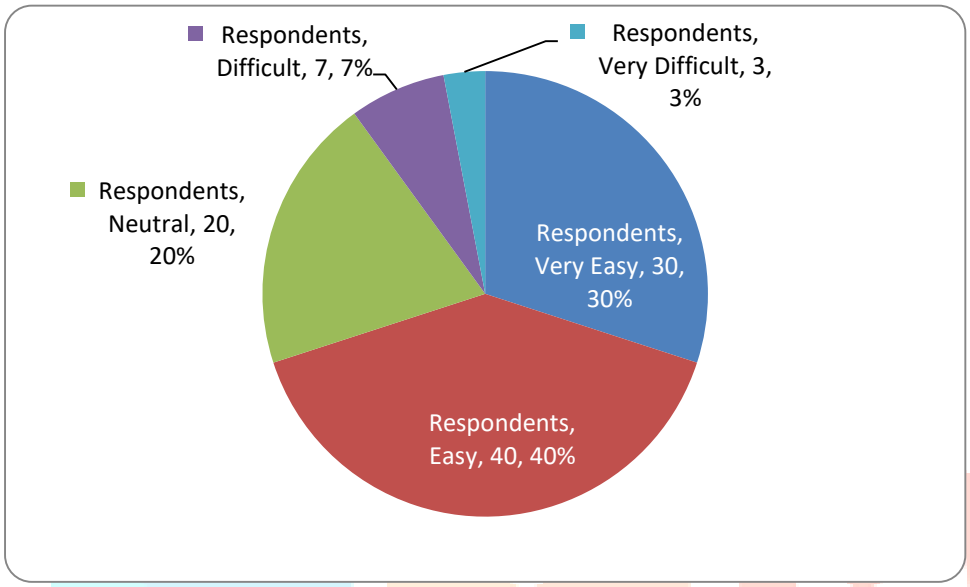
Service	Respondents	Percentage
Fund Transfer	40	40%
Bill Payments	25	25%
Balance Inquiry	20	20%
Mobile Recharge	10	10%
Others	5	5%



Interpretation: Fund transfer is the most popular service, highlighting convenience as the key driver.

6. Ease of Use Perception

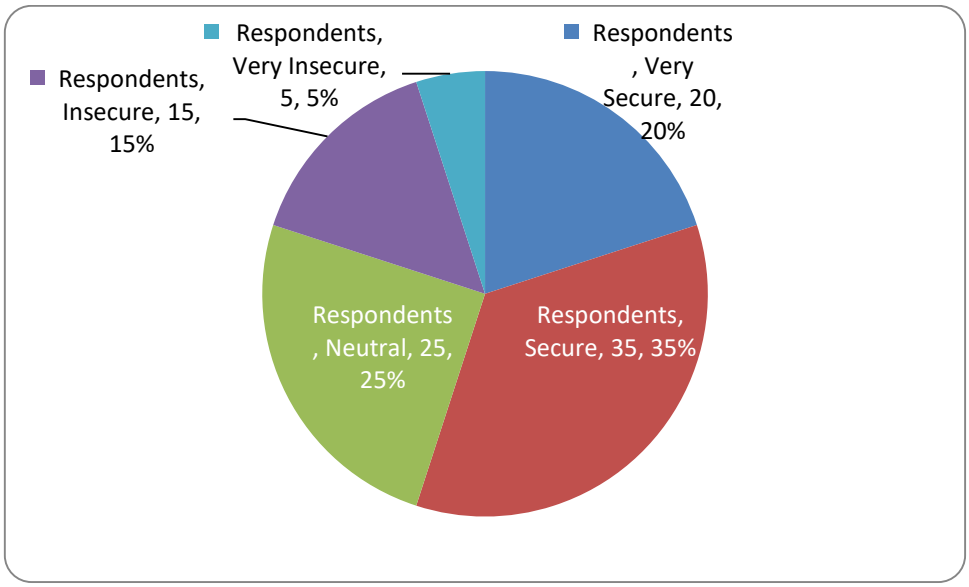
Response	Respondents	Percentage
Very Easy	30	30%
Easy	40	40%
Neutral	20	20%
Difficult	7	7%
Very Difficult	3	3%



Interpretation: Majority find mobile banking easy to use, which supports continued adoption.

7. Security Perception

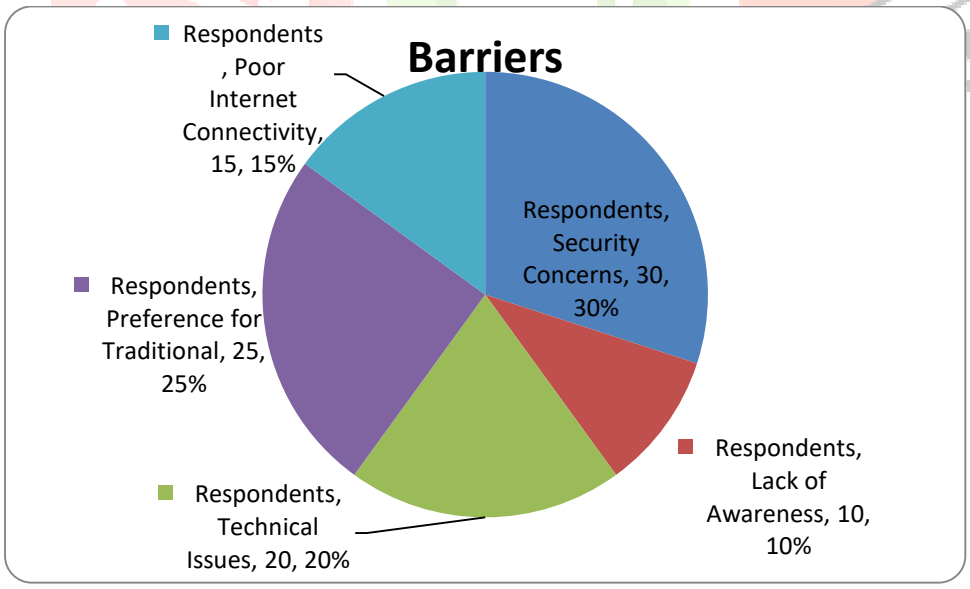
Response	Respondents	Percentage
Very Secure	20	20%
Secure	35	35%
Neutral	25	25%
Insecure	15	15%
Very Insecure	5	5%



Interpretation: While most feel secure, 20% express insecurity, which could hinder wider adoption.

8. Barriers

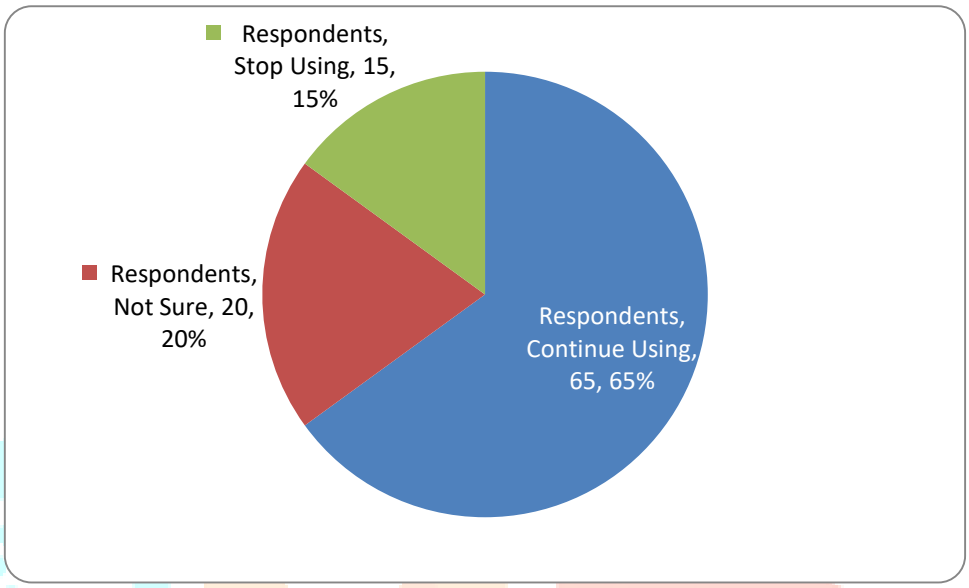
Barrier	Respondents	Percentage
Security Concerns	30	30%
Lack of Awareness	10	10%
Technical Issues	20	20%
Preference for Traditional	25	25%
Poor Internet Connectivity	15	15%



Interpretation: Security concerns and preference for traditional banking are the biggest barriers.

9. Future Intentions

Intention	Respondents	Percentage
Continue Using	65	65%
Not Sure	20	20%
Stop Using	15	15%



Interpretation: Majority intend to continue, but uncertainty remains due to perceived risks.

RELIABILITY TEST USING CRONBACH'S ALPHA

To examine the internal consistency of the questionnaire items used in the study, **Cronbach's Alpha** reliability test was conducted.

Cronbach's Alpha measures the extent to which items within a construct are correlated with each other and consistently measure the same concept.

✓*Acceptable Thresholds*

- **≥ 0.90** – Excellent
- **0.80 – 0.89** – Good
- **0.70 – 0.79** – Acceptable
- **0.60 – 0.69** – Moderate
- **< 0.60** – Poor

Reliability Results

Construct	No. of Items	Cronbach's Alpha	Interpretation
Perceived Usefulness	5	0.85	Good
Security	4	0.81	Good
Trust	5	0.87	Good
Customer Acceptance	4	0.83	Good
Overall Scale	18	**0.88**	**Good Reliability**

Interpretation

The overall Cronbach's Alpha value of **0.88** indicates that the questionnaire has **good internal consistency reliability**. All individual constructs also recorded alpha values above 0.80, which confirms that the measurement items are reliable and suitable for further statistical analysis.

Therefore, the instrument used in this study to measure customer acceptance of mobile banking is considered reliable.

CHAPTER 5

FINDINGS AND SUGGESTIONS

Findings

Based on the survey of 100 respondents, the following insights were observed:

1. *Demographic Trends*
   - The majority of mobile banking users are aged **21–30 (40%)**, followed by **31–40 (25%)**.
   - Younger adults show higher adoption, indicating a generational preference for digital banking.
2. *Awareness and Adoption*
   - **85%** of respondents are aware of mobile banking services.
   - **70%** actively use mobile banking, reflecting strong but not universal adoption
3. *Usage Duration*
   - Most users have been using mobile banking for **1–3 years (35%)**, suggesting sustained engagement.
   - **45%** are relatively new users (<1 year), indicating recent growth.
4. *Service Utilization*
   - **Fund Transfer (40%)** is the most used service, followed by **Bill Payments (25%)** and **Balance Inquiry (20%)**.
   - Mobile Recharge and other services are less frequently used.
5. *Ease of Use*
   - **70%** of users find mobile banking either Easy or Very Easy.
   - Only **10%** report difficulty, suggesting good usability overall.
6. *Security Perception*
   - **55%** of users feel Secure or Very Secure.
   - **20%** feel Insecure or Very Insecure, indicating trust concerns.
7. *Barriers to Adoption*
   - Key barriers include **Security Concerns (30%)**, **Preference for Traditional Banking (25%)**, and **Technical Issues (20%)**.
   - **Poor Internet Connectivity (15%)** remains a challenge, especially in semi-urban and rural areas.
8. *Future Intentions*
   - **65%** intend to continue using mobile banking.
   - **20%** are unsure, and **15%** may discontinue due to usability or trust issues.

Suggestions

To improve customer acceptance and expand mobile banking usage, the following recommendations are proposed:

1. *Strengthen Security Measures*
   - Implement **biometric authentication**, **real-time fraud alerts**, and **secure encryption protocols** to enhance user trust.
2. *User Education and Awareness*
   - Launch **digital literacy campaigns**, **in-app tutorials**, and **community workshops** to educate users on features and safety.
3. *Service Diversification*
   - Introduce additional services such as **loan applications**, **investment tracking**, and **insurance payments** to increase utility.
4. *Improve App Usability*
   - Ensure **intuitive design**, **fast loading times**, and **multi-language support** to cater to diverse user groups.
5. *Address Connectivity Challenges*
   - Collaborate with telecom providers to offer **zero-data access** or **offline transaction capabilities** in low-bandwidth regions.
6. *Inclusive Design for Older Users*
   - Develop **senior-friendly interfaces** and provide **personalized onboarding support** to encourage adoption among older demographics.

Conclusion

The study reveals that mobile banking has achieved significant awareness and adoption among customers, particularly younger age groups, who demonstrate higher acceptance and sustained usage. While the majority of respondents find mobile banking convenient, easy to use, and time-saving, concerns regarding security, technical issues, and preference for traditional banking methods remain notable barriers.

The findings highlight that **fund transfers and bill payments** are the most frequently used services, reflecting the demand for quick and efficient financial transactions. However, limited diversification in service usage suggests that customers may not be fully aware of the broader capabilities of mobile banking platforms.

Although most users perceive mobile banking as secure, a considerable proportion still express doubts, underscoring the importance of strengthening trust through enhanced security measures and awareness campaigns. Connectivity challenges, especially in semi-urban and rural areas, further restrict adoption and need to be addressed through infrastructure improvements and innovative solutions.

Overall, the study concludes that mobile banking is steadily gaining acceptance, with a majority of users intending to continue usage. To ensure wider adoption and long-term sustainability, banks must focus on **security, usability, service diversification, and inclusive design**. By addressing these factors, mobile banking can evolve into a universally trusted and accessible financial tool, bridging the gap between traditional and digital banking.

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