

# Unlocking the Digital Frontier: Navigating Challenges in Mobile Banking Adoption Across the Enchanting Landscape of Manipur (India)

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## Abstract

This empirical research article aims to evaluate the issues and challenges in M-banking (mobile banking) adaptation. Primary data were gathered with the help of a structured questionnaire for quantitative data and a telephone interview was conducted with 15 respondents. A sample size of 145 respondents was selected using simple random sampling method. The analytical framework used the SPSS 21 software package, with statistical tools such as KMO (Kaiser-Meyer-Olkin)-Bartlett's Test, Cronbach's Alpha Reliability Test, ANOVA, Regression Analysis and Chi-square Tests. The findings of the study show different adoption pattern of mobile banking adaptation. Factors such as trust in banks, safety concerns, and transaction costs are found to be significant factors influencing the adoption of mobile banking services in the state. This study provides practical insights to the policy makers, banks correspondents, mobile network operators (MNO) and technology vendors, alike. Further research avenues include integrating the cultural factors, increase in the number of respondents.

**Keywords:** Mobile Banking, M-Banking, Issue of M-Banking, Challenges of Mobile Banking, Trust in Bank

## Introduction

Mobile banking has transformed the financial business by giving people an extraordinary method for getting to and dealing with their monetary administrations. The rise of mobile banking has impacted internet banking exchanges and has been featured by Malaquias and Silva (2020) and Ngalyuka (2021). Monetary organisations

have made critical interests in making portable financial administrations open, perceiving their likely effect. Portable financial upgrades functional proficiency, prompting cost-effective investment funds and smoothed out processes, further developing consumer loyalty (Gerlach & Lutz, 2021). According to Courtney Elizabeth Cleveland, this change gives customers an easy and accessible way to make financial transactions. The adoption of mobile banking services is further fuelled by the expanding availability of financial products and services and the expanding penetration of mobile phones (Courtney et al., 2016).

The Technology Acceptance Model (TAM) and its variations are frequently used to predict user intentions to embrace mobile banking, despite the fact that existing research on mobile banking adoption lacks a clear path forward. In advanced mobile banking applications, SMS banking has been the primary focus. Further research into user demographics, regulatory frameworks, and consumer awareness is required to close this knowledge gap. Mobile banking services are in high demand as a result of the rise in smartphone use, expanding customer reach, and boosting customer retention. In any case, despite their likely advantages, cell phones or tablets for banking exchanges presently can't seem to be far reaching. Predicting mobile banking adoption is heavily influenced by factors like compatibility, perceived usefulness, and attitude, which are similar to previous research findings. In any case, existing examination overwhelmingly centers on SMS banking, disregarding the thought of further developed versatile applications.

As much as mobile banking is convenient, it has a few challenges. With mobile devices becoming more reliable, security issues, such as phishing and malware exploits,

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remain constant. Variations in digital literacy and technological infrastructure leads to wide usage, especially in the developing areas. The obstacles of interoperability between different mobile banking platforms hamper smooth transfer. On the other hand, regulatory compliance has to be done with caution to ensure data of the users is protected and that financial regulation is enacted. These challenges need to be addressed if trust, inclusivity, and the future of digital financial services are to be ensured.

Researchers focus on user demographics and the decision-making process, emphasising the need for additional research on the issues and challenges in M-banking adaptation, in order to fully comprehend the mobile banking adoption landscape.

This research expects to assess the obstructions and difficulties ruining the reception of portable banking in the province of Manipur, while additionally diving into the impact of segment factors on this transformation cycle. The effects of mobile banking adoption on retail banking have been the subject of prior research in this field (Beacker et al., 2022). Additionally, Convolutional Neural Network (CNN) models for facial recognition have been used in studies to investigate secure authentication options for mobile banking applications.

Expanding upon this writing, the current research tries to examine the reasonable difficulties faced by people, with a specific accentuation on the occupants of Manipur, a north-eastern state in India portrayed by its remote and geologically testing landscape, combined with a huge level of unbanked populace.

Further examinations have shown that the nature of administration essentially impacts consumer loyalty in mobile banking, with various factors displaying unmistakable consequences for fulfilment levels (Hassan, 2022). Factors, for example, the plan and simplicity of activity of versatile financial sites assume a critical part in improving portable financial transformation (Herawati, 2022).

By providing a deeper comprehension of the fundamental reasons behind obstacles and reluctance to adopt mobile banking services, this research article adds to the existing body of research. By zeroing in on the particular difficulties faced by individuals in Manipur, the exploration means to give important bits of knowledge

that can illuminate methodologies for advancing mobile banking in districts with comparable attributes.

A quantitative survey methodology that is tailored to the specific requirements of the research is used in this study. The implications of this examination are far reaching.

This study's policy recommendations have the potential to provide decision-makers with valuable insights, making it easier to bring financial services to previously untapped areas. The research especially addresses the special difficulties, obstructing the reception of mobile banking in the state of Manipur, offering noteworthy bits of knowledge for bank reporters, Mobile Network Operators (MNOs) and technology vendors. An improved comprehension of the factors that influence the adaptation of mobile banking in this particular setting could be of great benefit to their strategies and interventions. At last, the research adds to the all-encompassing objective of encouraging advanced monetary inclusivity in locales with unmistakable difficulties and qualities.

A comprehensive literature reviews are included in the second section of the study. Consequently, the third section contains the objectives, hypotheses of the study and research methodology. The fourth section discusses results and discussions. The study is brought to a close in the fifth section, which examines the implications and provides an outline of possible directions for future research.

## Literature Reviews

Changchit (2020) compared Thai and American attitudes towards mobile banking and the factors that prevent customers from using the service. It was discovered that U.S. subjects preferred mobile banking more than Thai subjects and that Thai subjects perceived the privacy of mobile banking to be significantly lower than that of U.S. subjects.

Abdalmajeed et al. (2022) broke down the improvement of portable banking and distinguished versatile telecom framework as the most common subject related to portable banking, they assessed in excess of 1206 papers from 2000 to 2020 connected with mobile banking and found that discernment and usage of M-Banking have been adjusted over the long haul.

Becker (2022) dissected the effect of portable financial reception on retail banking in Germany. They noticed an expansion in web based financial exchanges and a reduction in the utilisation of ATMs, call centres, and bank offices. They presumed that versatile financial reception prompts expanded web based financial exchanges.

Gupta (2022) talked about how mobile financial services are being used. The paper presents a deliberate writing survey on versatile monetary administrations reception they are of the assessment that ‘Innovation Acknowledgment Model’ (Cap), bound together hypothesis of acknowledgment and utilisation of innovation (UTAUT) are driving reasonable structures, Portable Monetary Administrations (MFS) reception predecessors can be ordered into six unique classifications.

Naeem (2022) talked about the social act of portable financial reception during the coronavirus pandemic and presents the ‘Social Act of Versatile Financial Reception’ (SPOTA) structure. It investigates the job of virtual entertainment, groups of friends, relatives, and client support specialists in the reception of versatile financial services, they found that the coronavirus episode energised social practices for the reception of portable banking, and accessibility issues in emerging nations upset the reception of mobile banking.

Wang et al. (2022) talked about the effect of data scattering channels and the accessibility of monetary administrations on the reception of mobile banking in rustic China by utilising the ‘paired probit model’. It proposes utilising broadened correspondence channels and fitting portable banking for country’s clients to advance reception.

Kumar (2023) explored the job of seen monetary expense, saw chance, and confidence in the reception of versatile financial administrations by youthful Indian clients utilising an elucidating research plan they presumed that exhibition hope, exertion anticipation, social impact, and saw monetary expense emphatically impact conduct expectations and saw risk and saw trust moderate the connection between social aim and genuine utilisation of portable banking.

From the above literature, it was found that many studies exploring various avenues of mobile banking have been done in the past, but so far no in-depth exploration into

security concerns and measures related to mobile banking has been done in the context of Manipur. Therefore, it is pertinent to do so.

## Objectives of the Study

- To assess the adoption patterns of mobile banking in the state of Manipur.
- To evaluate user perception and satisfaction with mobile banking services.
- To identify challenges and concerns hindering the widespread adaptation of mobile banking in Manipur.

## Hypotheses of the Study

*H01:* There exists no noteworthy distinction in the adoption patterns of mobile banking among different demographic groups in the state of Manipur.

*H02:* There is no noteworthy distinction in the perception and satisfaction levels of users across various age groups and income brackets regarding mobile banking services.

*H03:* There is no noteworthy association between identified challenges and the widespread adoption of mobile banking in Manipur.

## Research Methodology

### Research Design

The foundation of the research is both on quantitative as well as qualitative, collected data with the help of a google form questionnaire which was distributed to the respondents via WhatsApp, and email, furthermore interviews on mobile phones were conducted with the respondents whose response required further clarification.

### Sources of Data

The current study utilised both primary and secondary data sources. Primary data were collected using a Google form and open-ended survey questions were collected using telephonic interviews to acquire a more inside knowledge on the issues of mobile banking adaptation. Secondary data includes data extracted from different

research articles and publications accessible on various sites such as Research Gate, Google Scholar, etc.

## Data Collection Methods

A structured questionnaire was used to guarantee a normalised approach in data collection, allowing better comparison among respondents. The questionnaire used for the study went through intensive pilot testing with 30 respondents. This step was planned to recognise and address any expected ambiguities, eventually upgrading the lucidity of the questionnaire. Hence, the questions were dispersed to respondents by means of both WhatsApp and email for their convenience.

A thorough telephonic interview was conducted to dig profoundly into the encounters and points of view of the respondents. This method made it easier to conduct a thorough investigation, which yielded useful insights and enhanced the data that was collected. The subjective data obtained through these meetings filled in as an important enhancement to the quantitative discoveries of the research.

## Data Analysis Approach

To analyse the quantitative information, SPSS 21 programming was used. Different statistical tools, including KMO (Kaiser-Meyer-Olkin) and Bartlett's Test, Cronbach's Alpha, ANOVA, Regression Analysis, and the Chi-square test, were utilised to guarantee a far reaching and thorough assessment of the gathered data.

## Data Analysis, Interpretation, and Discussion

## Sample Design

### Sample Size

The sample size of the study was 145 respondents and telephonic interview was conducted from 15 respondents which is justified as Bertaux (1981) suggested an acceptable qualitative sample size of 15 interviews.

### Sampling Technique

Simple random sampling technique was used for the quantitative study and judgemental sampling technique was employed to select the respondents for qualitative data in order to bring heterogeneity of the respondents.

## Rationale of the Study

The study seeks to identify the ground reality of the issues and challenges in the adaptation of mobile banking in the state of Manipur. Since it is impossible to open new bank branches to match with the increasing population mobile banking is the only viable solution in addressing the financial gap which has been prevalent. The study gives a special emphasis on the demographic variables, and can reveal the role of demographic variables on the adoption patterns, frequency of utilisation, user perspective, and factors inhibiting the use of mobile banking in the state of Manipur. It offers a practical implications to the policy makers, banks as well as the mobile network operators and technology vendors to further take a leap forward towards the prevailing digital era.

**Table 1: Sample Distribution Table**

| <i>Particulars</i> |                  | <i>Number of Respondents</i> | <i>Percentage</i> |
|--------------------|------------------|------------------------------|-------------------|
| Gender             | Male             | 73                           | 50.3              |
|                    | Female           | 72                           | 49.7              |
| Total              |                  | 145                          | 100               |
| Age                | 17-25 years      | 31                           | 21.4              |
|                    | 26-38 years      | 97                           | 66.9              |
|                    | 39-50 years      | 12                           | 8.3               |
|                    | 51-60 years      | 4                            | 2.8               |
|                    | 60 years & above | 1                            | 0.7               |
| Total              |                  | 145                          | 100               |

| Particulars               |                         | Number of Respondents | Percentage |
|---------------------------|-------------------------|-----------------------|------------|
| Educational Qualification | Post-graduation         | 71                    | 49         |
|                           | Graduation              | 48                    | 33.1       |
|                           | High school             | 19                    | 13.1       |
|                           | Lower than high school  | 4                     | 2.8        |
|                           | Middle school           | 3                     | 2.1        |
| Total                     |                         | 145                   | 100        |
| Employment                | Employed                | 36                    | 24.8       |
|                           | Housewife, Professional | 11                    | 7.6        |
|                           | Professional            | 1                     | 0.7        |
|                           | Retired                 | 26                    | 17.9       |
|                           | Student                 | 2                     | 1.4        |
|                           | Student, Employed       | 62                    | 42.8       |
|                           | Student, Housewife      | 1                     | 0.7        |
|                           | Student, Professional   | 6                     | 4.1        |
| Total                     |                         | 145                   | 100        |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 1 exhibits the demographic profile of the respondents. The gender distribution among the respondents is almost equally distributed with male being 50.3% and females being 49.7%. The majority of the respondents belong to the age group of 26–38 years (66.9%), followed by the age group 17–25 years (21.4%) while only 0.7% of the respondents belonging to the age group of 60 years & above. Most of the respondents for the study were students, while the least number being students who are housewife (0.7%), professional (0.7%), and the educational qualification of most of the respondents were Post-graduation (49%) and middle school being the least one (2.1%).

**Table 2: KMO and Bartlett’s Test**

|  |                    |         |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .817    |
| Bartlett’s Test of Sphericity                    | Approx. Chi-Square | 874.612 |
|  | Df                 | 171     |
|  | Sig.               | .000    |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 2 presents crucial statistical indicators, including the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity, which play a pivotal role in evaluating the appropriateness of conducting factor analysis. The KMO value, standing at 0.817, surpasses the designated threshold, underscoring a highly favourable environment for factor analysis. This elevated KMO value implies a substantial interrelation among variables, pointing to the existence of latent underlying factors within the dataset. Furthermore, Bartlett’s test reveals a Chi-Square value of 874.612, accompanied by a remarkably low p-value of 0.000, signalling the rejection of null hypotheses.

**Table 3: Cronbach’s Alpha Reliability Test**

| Cronbach’s Alpha | No. of Items |
|------------------|--------------|
| 0.866            | 20           |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 3 highlights the Cronbach’s Alpha of 0.866 for a scale of 20 items. This is above the threshold value of 0.7 indicating a strong internal consistency among the items.

**Table 4: Analysis of Variance (ANOVA) - Impact of Age on Mobile Banking**

| Particulars                    | Source of Variation | Sum of Squares | Degrees of Freedom (Df) | Mean Square | F-Ratio | Significance Level (Sig.) |
|--------------------------------|---------------------|----------------|-------------------------|-------------|---------|---------------------------|
| Use of Mobile Banking          | Between Groups      | 3.918          | 2                       | 1.959       | 49.638  | 0.000                     |
|                                | Within Groups       | 5.644          | 143                     | 0.039       |         |                           |
|                                | Total               | 9.562          | 145                     |             |         |                           |
| How often do you use M-banking | Between Groups      | 9.781          | 2                       | 4.891       | 8.799   | 0.000                     |
|                                | Within Groups       | 79.479         | 143                     | 0.566       |         |                           |
|                                | Total               | 89.260         | 145                     |             |         |                           |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 4 indicates the result of the ANOVA analysis done by taking the demographic variable 'gender' and the use of mobile banking along with the 'frequency of its usage' by the respondents, from the above result we can interpret that there exists a noteworthy distinction between the means of the variables for the use of mobile banking; the F value is 49.638 and is associated with a very low

p-value, which clearly indicates that there are significant differences in the use of mobile banking among different genders.

The result also indicates a noteworthy distinction regarding how often a person of different genders uses mobile banking services, and the differences are unlikely due to random chances.

**Table 5: Analysis of Variance (ANOVA) - Impact of Age Group on Mobile Banking**

| Particulars                    | Source of Variation | Sum of Squares | Degrees of Freedom (Df) | Mean Square | F-Ratio | Significance Level (Sig.) |
|--------------------------------|---------------------|----------------|-------------------------|-------------|---------|---------------------------|
| Use of Mobile Banking          | Between Groups      | 4.691          | 5                       | 0.938       | 26.964  | 0.000                     |
|                                | Within Groups       | 4.871          | 140                     | 0.035       |         |                           |
|                                | Total               | 9.562          | 145                     |             |         |                           |
| How often do you use M-banking | Between Groups      | 12.247         | 5                       | 2.449       | 4.452   | 0.001                     |
|                                | Within Groups       | 77.014         | 140                     | 0.550       |         |                           |
|                                | Total               | 89.260         | 145                     |             |         |                           |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 5 shows the result of the ANOVA analysis based on the demographic variable Age group of the respondents and use of mobile banking including the duration of its usage, from the above table, we can conclude that there exists a significant difference between the use of Mobile banking services and how often they use the service

between various age groups at significance levels of 0.000 and .001.

Therefore, we reject the Null hypothesis that there is no noteworthy distinction in the adoption patterns of mobile banking among different demographic groups in the state of Manipur in favour of the Alternate hypothesis.

**Table 6: Regression Analysis**

| Variable   | Unstandardised Coefficients    |            | Standardised Coefficients       | T-Value | Significance |
|------------|--------------------------------|------------|---------------------------------|---------|--------------|
|            | B (Unstandardised Coefficient) | Std. Error | Beta (Standardised Coefficient) |         |              |
|            | 28.810                         | 3.225      |                                 | 8.933   | 0.000        |
| Gender     | -2.843                         | 0.879      | -0.257                          | -3.236  | 0.002        |
| Education  | -0.088                         | 0.685      | -0.011                          | -0.129  | 0.898        |
| Age        | 0.144                          | 0.188      | 0.060                           | 0.764   | 0.446        |
| Employment | -0.631                         | 0.176      | -0.302                          | -3.576  | 0.000        |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 6 represents the result of regression analysis highlighting the unstandardised coefficients, standardised coefficients, and the level of significance, from the above table we can conclude that when all variables remain zero, the expected perception level is 28.810, and ‘Gender’ has a negative impact. A higher value is associated with a decrease in ‘satisfaction level’; ‘Age,’ on the contrary, does not provide a statistically significant impact as indicated by a high p-value (0.898), Alternatively ‘Education,’ has a positive impact on ‘satisfaction level.’ Furthermore, Employment, has a negative impact. The result of the regression analysis revealed that Gender and Employment significantly influence the use satisfaction level related to the utilisation of mobile banking. Therefore, we reject the null hypothesis in favour of the alternate hypothesis and conclude that there is a noteworthy distinction in the perception and satisfaction levels of users across various age groups and income brackets regarding mobile banking services.

**Table 7: Chi-Square Test**

| Variable                           | Chi-Square Value | Df | P-Value |
|------------------------------------|------------------|----|---------|
| Trust in Bank                      | 18.524           | 16 | 0.002   |
| High transaction fees              | 11.078           | 6  | 0.86    |
| Safety Concerns                    | 22.944           | 4  | 0.00    |
| Does not require Technical knowhow | 13.452           | 6  | 0.36    |

Source: Authors, Data Proceeds, 2024 (Primary Data).

Table 7 presents the value of chi-square test highlighting the chi-square value and p-value along with the degree of freedom, from the above table, we can interpret that ‘Trust in the bank’ and ‘Safety concerns’ yield a significant result (p-value at 0.002 and 0.00), with less than 0.05 suggesting a significant relationship between them and adaptation of mobile banking in the state of Manipur, on the other hand ‘High transaction fees’ and ‘Does not require Technical know-how’ does not seem to have a significant influence on the adaptation of mobile banking services in the state of Manipur.

### Quantitative Findings

*Objective 1:* To assess the adoption patterns of mobile banking in the state of Manipur.

#### Findings

- There is a notable distinction in the adoption patterns of mobile banking among different demographic groups in Manipur, including gender and age groups.
- The frequency of utilising mobile banking also varied significantly across different demographic groups in the state.

*Objective 2:* To evaluate user perception and satisfaction with mobile banking services.

#### Findings

- User perception and satisfaction levels vary across gender, age, education, and employment groups in Manipur.
- Gender and employment significantly influence user satisfaction levels related to mobile banking.

*Objective 3:* To identify challenges and concerns hindering the widespread adaptation of mobile banking in Manipur.

#### Findings

- Trust in the bank and safety concerns are significant factors affecting the adaptation of mobile banking in Manipur.
- A significant portion of the respondents feel that transaction fees charged by the bank are not high and some technical know-how is required in order to operate the service, which is similar to the findings of C Afonso (2022), where they highlighted technical know-how as a part of the challenges faced by customers in adapting to mobile banking.

### Qualitative Findings

The telephonic interview conducted from 15 respondents yielded many results they can be summarised and categorised as follows:

#### Disadvantages of Mobile Banking

- Most of the female respondents belonging to the age group of 26-38 years feel that they spent too much time shopping online and lack of physical evidence of money leads them to overspend.
- Majority of the respondents belonging to the age group of 39-50 years feel insecure regarding

recovering their mobile banking password if it gets lost.

### Advantages of Mobile Banking

- Some respondents further highlighted that use of mobile banking has freed them from the hustle and bustle of carrying paper currency.
- Respondents are of the opinion that they prefer mobile banking for making petty payments in order to avoid the hustle of dealing with changes.
- Respondents also feel ATMs are charging more as compared to mobile banking service providers.

### Implications

The current study holds substantial importance for academics, banking professionals, policy makers mobile network operator (MNO) and technology vendors alike. Employing a robust methodology, the research employs diverse statistical tools including ANOVA, regression analysis, and chi-square tests, enhancing the research's validity. Special attention is given to demographic variables, encompassing a diverse range of respondents spanning various age groups. Beyond quantitative methods, the research incorporates qualitative approaches, offering deeper insights into the subject matter and delving into the core of underlying factors. This study contributes significantly to the existing knowledge base and bears great relevance for policy makers.

### Limitations and Further Research

The present study succumbs to some limitations; a larger sample size may provide better insight into the topic under study, and cultural factors may have been integrated to elucidate the role of cultural factors on mobile banking adaptation; further research can be carried out by integrating these factors under consideration.

### Conclusion

The above study concludes that the demographic variables do significantly influence the adaptation of new-age technologies such as mobile banking, along with their perception and satisfaction with it; the study also reveals

the factors that inhibit the use of this technology. Thus, it is suggested that the mobile banking adaptation process can be made more effective by addressing the above-identified problems, and more effort should be made to bridge the gap between the demographic factors inhibiting the use of such technology.

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