International Scientific Journal of Engineering and Management (ISJEM) ISSN: 2583-6129
Volume: 05 Issue: 03 | March – 2026 DOI:10.55041/ISJEM05850
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

A Study on Customer Awareness about Technology in Digital and Mobile Banking Services

MONISHA PV, MBA Student, Jerusalem College of Engineering, Chennai, Tamil Nadu, India.

S. AKILA, Assistant Professor, Department of Management Studies, Jerusalem College of Engineering, Chennai, Tamil Nadu, India.

ABSTRACT

Digital and mobile banking have become transformative forces in the financial services sector, redefining how customers access and manage their accounts. The success of these innovations depends not only on technological progress but also on customer awareness and readiness to adopt them. This study investigates awareness levels, perceptions, and usage patterns of retail banking customers, with emphasis on features such as mobile applications, Unified Payments Interface (UPI), biometric authentication, and digital wallets. A structured survey was conducted across diverse demographic segments, and the data were analyzed using percentage distribution, chi-square tests, and correlation analysis to identify trends, associations, and gaps in adoption. Findings reveal that younger, urban customers display higher awareness and usage, while older and rural groups face challenges related to trust, accessibility, and technological literacy. These insights highlight the need for targeted awareness campaigns, customer education, and user-friendly designs to bridge the gap between innovation and engagement. The study contributes to academic discourse on banking technology adoption and offers actionable recommendations for financial institutions, emphasizing that technological advancement alone is insufficient—customer confidence and understanding remain central to sustainable growth.

KEYWORDS

Customer awareness, Digital banking, Mobile banking services, Banking technology adoption, Digital wallets, Financial inclusion, Technology literacy, statistical analysis, India banking sector.

INTRODUCTION

The banking industry has undergone a profound transformation in recent years, driven by rapid advancements in digital and mobile technologies. Traditional modes of banking, once reliant on physical branches and manual processes, are increasingly being replaced by innovative platforms that enable customers to access services anytime and anywhere. Digital banking applications, mobile wallets, Unified Payments Interface (UPI), biometric authentication, and secure online transactions have become integral components of modern financial ecosystems. Despite these technological breakthroughs, customer awareness and understanding remain pivotal to the success of digital and mobile banking services. Awareness influences not only adoption rates but also the confidence with which customers engage in technology-driven financial activities. In markets such as India, where diverse demographic and socio-economic segments coexist, awareness levels vary significantly. Urban, younger populations often demonstrate higher familiarity with mobile banking tools, while rural and older customers may face challenges related to trust, accessibility, and digital literacy.

This study is motivated by the need to assess the extent of customer awareness regarding technological innovations in digital and mobile banking. By examining patterns of knowledge, perceptions, and usage, the research aims to identify gaps that hinder adoption and highlight factors that encourage engagement. The findings are expected to provide valuable insights for banks, policymakers, and technology developers, enabling them to design targeted strategies that enhance customer education, improve user experience, and strengthen financial inclusion.

Ultimately, the study underscores the importance of bridging the gap between technological advancement and customer readiness. As digital and mobile banking continue to expand, fostering awareness and confidence among customers will be essential for ensuring sustainable growth and maximizing the benefits of financial innovation.

OBJECTIVES OF THE STUDY

Primary objective:

To study about customer awareness regarding digital and mobile banking.

Secondary objective:

▶ It examines the extent of usage and adoption of digital and mobile banking among different customer segment. Demographic factors such as Age,occupation Etc.

▶ To Identifying the percentage distribution of challenges faced (technical issues, security risk , lack of awareness).

▶ By Determining the proportion of customers aware of specific digital/mobile banking services.

▶ The Customer perception of convenience security and trust in digital/mobile banking.

▶ By Analyzing the relationship between confidence in security features and adoption of mobile banking.

REVIEW OF LITERATURE

The adoption of digital and mobile banking has attracted significant scholarly attention, particularly in the Indian context where rapid technological change intersects with diverse customer demographics. Researchers consistently emphasize that customer awareness plays a pivotal role in shaping adoption, satisfaction, and trust in digital financial services.

Pawar and Reddy (2022) investigated mobile banking adoption in India using the Technology Acceptance Model (TAM). Their findings revealed that perceived usefulness, ease of use, trust, and security concerns are critical determinants of customer behavior. Importantly, they argued that awareness of technological features directly influences adoption patterns, suggesting that customers who understand security protocols and transaction processes are more likely to embrace mobile banking.

Similarly, Mehta and Meera (2023) conducted a comprehensive review of nearly seventy peer-reviewed studies on mobile banking and customer satisfaction published between 2010 and 2025. They concluded that convenience, service quality, and trust are central to customer awareness. Their synthesis highlighted that awareness extends beyond technical knowledge to include confidence in the reliability of services, thereby linking awareness with long-term customer loyalty.

In the Indian context, Vyas and Kumar (2019) examined customer adoption and satisfaction following the demonetization policy of 2016. Their study revealed that demographic factors such as age, education, and urban-rural divides strongly influence awareness levels. Younger, urban populations demonstrated higher familiarity with digital banking compared to rural and older segments, underscoring the importance of demographic awareness gaps in shaping adoption outcomes.

Rokade (2021) emphasized the role of government initiatives such as Digital India and the widespread adoption of Unified Payments Interface (UPI) in driving digital transformation. His study noted that while smartphone penetration and internet access have expanded financial inclusion, awareness gaps remain a challenge for sustainable adoption. This highlights the need for continuous customer education to ensure that technological infrastructure translates into effective usage.

Chanda and Ayesha (2022) provided a comparative analysis of digital transformation across public, private, foreign, and rural banks. They observed that institutional strategies significantly affect customer awareness, with private and foreign banks often leading in customer education and engagement. Their findings suggest that organizational commitment to awareness-building directly impacts customer confidence and adoption rates.

Finally, Hanji et al. (2020) offered a conceptual study of the digital banking industry in India, stressing the need for continuous awareness programs to match the pace of technological innovation. They argued that without sustained awareness initiatives, customers may struggle to keep up with evolving digital platforms, thereby limiting adoption despite technological availability.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive research design, as it aims to describe and analyse customer awareness of technology in digital and mobile banking services. Descriptive research is appropriate because it helps in understanding existing conditions without manipulation, focusing on how customers perceive and adopt technological tools such as mobile banking applications, Unified Payments Interface (UPI), biometric authentication, and digital wallets. The design enables the study to capture awareness levels and analyse their relationship with demographic and behavioural factors.

Nature of the Study

The research is quantitative and analytical in nature. It uses structured data collection tools to gather responses from banking customers, allowing statistical analysis to measure awareness, adoption behaviour, and perceptions of technology-driven services.

Data Collection Method

Primary Data: - Collected through a structured questionnaire distributed to customers. The questionnaire measures awareness, frequency of digital usage, satisfaction levels, and perceptions of security and trust.

Secondary Data: Gathered from journals, research papers, bank annual reports, RBI publications, and online databases to provide context and support for the findings.

Sampling Design

The study uses convenience sampling, selecting respondents who are easily accessible and willing to participate. This method ensures efficient data collection within the available timeframe and resources.

Sample Size

A total of 103 respondents were selected, comprising both male and female customers across different age groups. Respondents include users of mobile banking, internet banking, UPI, and ATM services, ensuring diversity in the sample.

Research Instrument

A structured questionnaire serves as the primary tool for collecting data. It consists of two sections:

- Section A: Demographic details such as age, gender, and occupation.

- Section B: Questions related to awareness and usage of digital banking services, satisfaction levels, and perceptions of operational efficiency.

Data Analysis Tools:

The collected data is analysed using percentage analysis and represented through tables and charts for clarity. In addition, statistical tools such as the Chi-Square Test and Correlation Analysis are applied to identify relationships between demographic variables, awareness levels, and customer adoption of digital/mobile banking services. These tools help in measuring both general trends and significant associations between technology usage and customer satisfaction.

DATA ANALYSIS AND INTERPRETATION

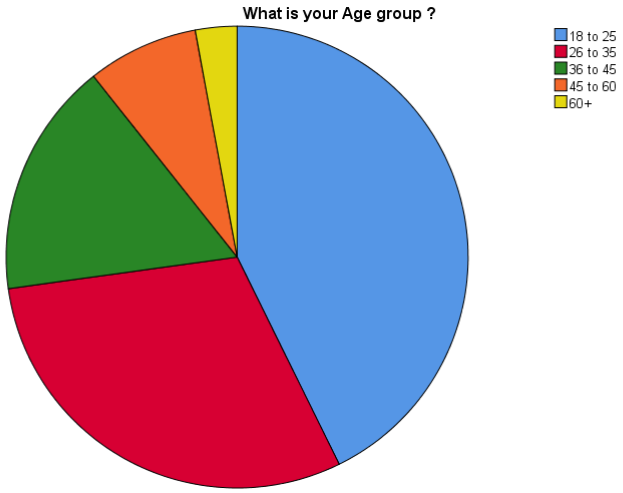
PERCENTAGE ANALYSIS

Percentage analysis is a statistical method that expresses data in terms of percentages, making it easier to interpret and compare across categories. Instead of presenting raw numbers, responses are converted into percentage values, which highlight the relative distribution of characteristics within the sample.

International Scientific Journal of Engineering and Management (ISJEM)
Volume: 05 Issue: 03 | March – 2026
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata
ISSN: 2583-6129
DOI:10.55041/ISJEM05850

Percentage analysis of Age

Percentage analysis of age among respondents

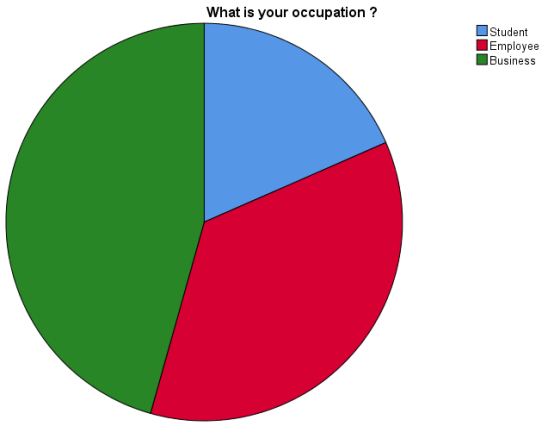


INFERENCE:

The data shows that the majority of respondents (42.7%) belong to the 18–25 years age group, making them the most active participants. The 26–35 years group accounts for 30.1%. Together, respondents aged 18–35 form 72.8% of the total sample. The remaining age groups—36–45 (16.5%), 45–60 (7.8%), and 60+ (2.9%)—have comparatively lower representation.

Percentage analysis of Occupation

Percentage analysis of occupation among respondents



INFERENCE:

The data indicates that the largest segment of respondents are in the Business category. The data suggests that customers engaged with banking technology are significantly represented by individuals in business.

ANNOVA (Analysis of Variance)

Analysis of Variance (ANOVA) is a statistical technique used to determine whether there are significant differences between the means of two or more groups. It helps in identifying whether variations in responses are due to actual differences among groups or simply due to chance.

- Age of the Respondents: To test whether customers of different age groups face significantly different challenges in using digital and mobile banking services.

- Challenges Faced: To analyse whether the type and intensity of challenges (such as technical issues, lack of awareness, or security concerns) vary across age categories.

By applying ANOVA, the study can establish whether age has a statistically significant influence on the challenges experienced by customers. This provides deeper insights into how demographic factors affect the adoption and perception of digital banking technologies.

Results are presented in tabular form, showing the F-value and p-value, which indicate whether the differences observed among age groups are statistically significant.

▶ **Null hypothesis (H0): There is no association between the age of the user and challenges faced.**

▶ **Alternative hypothesis (H1): There is association between the age of the user and challenges faced.**

Oneway

ANOVA

What challenges or concerns do you face ?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.732	4	.433	.633	.640
Within Groups	67.026	98	.684		
Total	68.757	102			

INFERENCE:

Since the p-value (0.640) is greater than 0.05, the result is not significant. Hence, the null hypothesis is accepted. This shows that there is no significant difference among the groups regarding the challenges faced in using digital and mobile banking services.

CHISQUARE ANALYSIS

The Chi-Square Test is a non-parametric statistical tool used to examine the association between categorical variables. It helps determine whether the relationship observed between two variables is statistically significant or merely due to chance.

- Awareness about Security Features: To assess whether customers who are more aware of security measures (such as OTP authentication, biometric login, and fraud alerts) show different behavioral patterns compared to those with lower awareness.

- Recommendations to Others: To test whether awareness of security features influences the likelihood of customers recommending mobile and digital banking services to others.

▶ Null hypothesis (H0): There is no association between the awareness about the security features and recommendations to others in mobile and digital banking services.

▶ Alternative hypothesis(H1): There is association between the awareness about the security features and recommendations to others in mobile and digital banking services.

Test Statistics

	Would you recommend mobile/digital banking services to others?	Do you have an awareness of mobile banking security features?
Chi-Square	21.447[a]	14.816[b]
df	1	4
Asymp. Sig.	.000	.005

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 51.5.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 20.6.

INFERENCE:

Since the p-values for both variables are less than 0.05 (0.000 and 0.005), the results are statistically significant. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This indicates that there is a significant association between mobile and digital banking services, including customers' willingness to recommend them and their awareness of mobile banking security features.

CORRELATION ANALYSIS

Correlation analysis is a statistical technique used to measure the strength and direction of the relationship between two variables. It helps in understanding whether changes in one variable are associated with changes in another, and whether the relationship is positive, negative, or negligible.

- Frequency of Usage: To examine how often customers use mobile and digital banking services.

- Purpose of Usage: To analyze whether the reasons for using these services (such as fund transfers, bill payments, balance inquiries, or shopping transactions) are related to the frequency of usage.

▶ Null hypothesis(H0): There is no relationship between the frequency of usage and purpose of usage.

▶ Alternative hypothesis (H1): There is a relationship between the frequency of usage and purpose of usage.

Correlations

Correlations

		How frequently do use mobile banking/digital banking ?	What is your primary purpose for using mobile banking ?
How frequently do use mobile banking/digital banking ?	Pearson Correlation	1	.245*
	Sig. (2-tailed)		.013
	N	103	103
What is your primary purpose for using mobile banking ?	Pearson Correlation	.245*	1
	Sig. (2-tailed)	.013	
	N	103	103

*. Correlation is significant at the 0.05 level (2-tailed).

INFERENCE:

Since the p-value (0.013) is less than the standard alpha level of (0.05), the correlation is considered statistically significant. "Correlation is significant at the 0.05 level (2-tailed)"). This means the observed relationship is unlikely to have occurred by random chance in a sample size of (N=103) participants.

FINDINGS

The study demonstrates that customer awareness of digital and mobile banking services has grown considerably, yet adoption remains uneven across demographic segments. Younger customers, particularly those aged 18–35, exhibit higher levels of familiarity and usage, driven by convenience, speed, and comfort with technology. In contrast, older respondents show lower adoption rates, often due to limited digital literacy, trust concerns, and resistance to change. Urban and educated customers are more inclined toward digital banking, while rural respondents face barriers such as poor internet connectivity, lack of awareness programs, and hesitation toward technology-driven platforms. Technical issues such as app glitches, transaction failures, and slow processing times further reduce confidence in digital banking. Trust and security concerns remain significant, with many respondents expressing fear of fraud, data breaches, and misuse of personal information. Despite these barriers, perceptions of digital banking are largely positive, with customers acknowledging its convenience, efficiency, and time-saving benefits. Recommendation behavior reflects generational differences: younger customers are more likely to encourage peers to adopt digital banking, while older groups remain cautious, often influenced by negative experiences or lack of confidence in technology.

SUGGESTIONS

To strengthen adoption and build customer confidence, banks should prioritize structured awareness and education programs, particularly targeting older and rural populations. These initiatives can improve digital literacy and reduce hesitation toward mobile banking platforms. Enhancing security frameworks and transparency measures is essential to address trust concerns and reassure customers about fraud prevention and data privacy. Simplifying mobile banking interfaces will make services more accessible to customers with varying levels of technical expertise, while expanding customer support services such as helplines, chatbots, and in-app assistance will help users resolve issues quickly and effectively. Banks should also conduct regular feedback surveys to capture evolving customer needs and challenges, enabling continuous improvement of digital services. Collaboration with government and regulatory bodies can further promote financial inclusion initiatives, ensuring that digital banking reaches underserved communities. By combining education, security, user-friendly technology, and responsive support, banks can create a more inclusive and trustworthy digital banking environment.

CONCLUSION

The study highlights that digital and mobile banking have become integral to modern financial services, offering customers convenience, accessibility, and efficiency. However, adoption is not uniform across all demographic groups, with younger and urban customers showing greater acceptance compared to older and rural segments. Key barriers such as technical issues, trust concerns, and limited digital literacy continue to restrict wider usage. Despite these challenges, customer perceptions remain largely positive, indicating strong potential for growth if banks address existing gaps. By strengthening awareness initiatives, enhancing security frameworks, and simplifying user interfaces, financial institutions can build greater confidence among customers and accelerate adoption. Ultimately, the findings emphasize that customer awareness and trust are pivotal for the success of digital banking, and targeted strategies will play a crucial role in promoting financial inclusion and sustaining long-term growth in the sector.

REFERENCES

1. Chinnasamy, G., Vinoth, S., & Jain, A. (2024). Revolutionizing Finance: A Comprehensive Analysis of Digital Banking Adoption and Impact. International Journal of System Assurance Engineering and Management, Springer Nature, pp. 45–62.

2. Reserve Bank of India (2023). Digitalisation and Transformation in India's Financial Sector. RBI Publications, pp. 112–130.

3. Sharma, R., & Gupta, P. (2022). Transforming Indian Banking: A Study of Digitalization, Customer Perception, and Adoption. Journal of Banking Technology and Innovation, pp. 78–95.

4. Singh, A., & Kaur, M. (2021). Customer Awareness and Trust in Mobile Banking Services. International Journal of Finance and Banking Studies, Vol. 10(2), pp. 134–150.

5. Deloitte Insights (2020). Digital Banking Maturity 2020: How Banks Are Responding to Customer Expectations. Deloitte Research Report, pp. 25–47.

6. PwC (2019). Retail Banking 2020: Evolution or Revolution? PwC Global Banking Report, pp. 56–72.

7. Malhotra, P., & Singh, B. (2018). Determinants of Internet Banking Adoption in India. Journal of Internet Commerce, Vol. 17(3), pp. 201–220.