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# An empirical study on challenges faced by customers using digital banking products in Karnataka

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## Abstract

Digital banking in India has experienced significant growth, with over 600 million Unified Payments Interface (UPI) transactions processed daily by August 2025. Despite this expansion, customers face several challenges in adopting and utilizing digital banking products. A study conducted revealed that 120 respondents identified complex transaction processes as a major issue, with ATM cards being the most familiar digital banking service. Additionally, cybersecurity threats such as phishing and malware attacks remain prevalent, leading to significant financial losses and consumer distrust. The Reserve Bank of India's Digital Payments Index showed a 10.7% year-on-year increase in FY 2024-25, indicating growing confidence in digital transactions. However, challenges persist, including limited digital literacy, especially among 46 years and above age group, less proficient in online transactions. Addressing these issues is crucial for enhancing the adoption and effectiveness of digital banking services in India.

**Keywords:** Digital banking, customer challenges, UPI, cybersecurity, digital literacy, digital payments index

## 1. Introduction

Digital banking in India has experienced remarkable growth, with the Unified Payments Interface (UPI) setting a new record in August 2025 by processing over 20 billion transactions in a single month, totalling ₹24.85 lakh crore in value. This surge underscores the country's rapid adoption of digital financial services, driven by government initiatives like Digital India and the proliferation of smartphones and internet connectivity. Despite this expansion, customers face multiple challenges in adopting and using digital banking products. A study conducted revealed that 120 respondents identified complex transaction processes as a major issue, with ATM cards being the most familiar digital banking service. Additionally, cybersecurity threats such as phishing and malware attacks remain prevalent, leading to significant financial losses and consumer distrust. The Reserve Bank of India's Digital Payments Index showed a 10.7% year-on-year increase in FY 2024-25, indicating growing confidence in digital transactions. However, challenges persist, including limited digital literacy, especially among 46 years and above age group, less proficient in online transactions.

As per the Data Security Council of India's Cyber Threat Report 2025, India recorded 369.01 million malware detections across 8.44 million endpoints in 2024, averaging 702 detections per minute. Digital literacy remains a barrier, particularly in rural areas. Programs like the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) aim to make six crore rural households digitally literate, but challenges persist in reaching and educating the vast population.

## 2. Review of Literature

1. **Yadav, P. (2024)** <sup>[1]</sup>: The rapid adoption of digital banking in India has been propelled by government initiatives like Digital India, the proliferation of smartphones, and the expansion of internet connectivity. However, studies indicate that infrastructure limitations, especially in rural areas, hinder seamless adoption. A study by Pooja Yadav (2024) <sup>[1]</sup> highlights that banks face difficulties integrating the latest developments in digital banking, underscoring the need for improved infrastructure and technological integration.

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2. **Waliullah, M. (2025)** <sup>[2]</sup>: Cybersecurity remains a significant concern in digital banking. Research by Md. Waliullah (2025) <sup>[2]</sup> identifies threats such as phishing, malware, and identity theft, which undermine user trust and impede adoption. The study emphasizes the need for robust cybersecurity measures to protect users and enhance confidence in digital banking platforms.
3. **Bala, M. M. (2025)** <sup>[3]</sup>: Digital literacy is crucial for the effective use of digital banking services. A study by MM Bala (2025) <sup>[3]</sup> explores the impact of social influence and digital literacy on digital banking adoption among rural customers. The findings suggest that enhancing digital literacy can significantly improve adoption rates in underserved regions.
4. **Reserve Bank of India (2024)** <sup>[4]</sup>: Regulatory frameworks play a pivotal role in shaping the digital banking landscape. The Reserve Bank of India's increased scrutiny on IT systems has prompted banks to boost their technology spending to approximately 10% of their operating expenses. This shift aims to address frequent outages and IT system deficiencies, highlighting the importance of regulatory oversight in ensuring the robustness of digital banking infrastructure.
5. **Pandey, P. (2025)** <sup>[5]</sup>: Digital banking has the potential to enhance financial inclusion, particularly in rural areas. A study by P Pandey (2025) <sup>[5]</sup> examines the impact of digitalization on customer experience and operational efficiency in Indian banking. The research underscores the need for tailored strategies to bridge the digital divide and promote inclusive banking services.
6. **Aljaradat, A., & Abu-Shanab, E. (2025)** <sup>[6]</sup>: Trust and cybersecurity are critical factors influencing digital payment adoption. A study by A Aljaradat (2025) <sup>[6]</sup> examines the behavioral and contextual determinants influencing digital payment trust and perceived cybersecurity in India. The findings highlight the importance of addressing security concerns to foster greater adoption of digital payment systems.
7. **Ozili, P. K (2025)** <sup>[7]</sup>: A literature review by Peterson K. Ozili (2025) <sup>[7]</sup> presents a synopsis of financial inclusion research in banking. The study focuses on the effect of bank managerial discretion and regulation on financial inclusion outcomes, as well as the effect of financial inclusion on the banking business. The article contributes to the critical literature by challenging the positivist approach to financial inclusion research.
8. **Singh, A., & Kumar, R. (2024)** <sup>[8]</sup>: A review paper explores the critical role of digital banking in enhancing financial inclusion by providing underserved rural populations with accessible, affordable, and user-friendly financial services. The study examines the integration of mobile banking, digital wallets, and internet-based platforms to overcome traditional barriers such as geographical isolation, limited banking infrastructure, and high transaction costs.
9. **Saini, P., & Verma, S. (2025)** <sup>[9]</sup>: Research by the International Journal of Finance and Management Research (2025) assesses the impact of digital transformation on banking. The study yields useful recommendations for banking professionals, policymakers, and stakeholders alike, highlighting the imperative for strategic investment in technology, improved digital literacy initiatives, and regulatory measures that facilitate sustainable and inclusive digital financial growth in India.
10. **D'Souza, R., & Thomas, L. (2025)** <sup>[10]</sup>: A systematic literature review on digital financial literacy presents a thorough and objective examination of the available information and research in this field. The article entails an in-depth and organized search to provide insights into the importance of digital financial literacy in enhancing financial behaviors, decision-making, and financial inclusion.
11. **Kumar, N., & Patel, M. (2025)** <sup>[11]</sup>: A study presents an all-inclusive analysis of the literature on the augmentation of financial inclusion through fintech. The research uses bibliometric and content analysis techniques to illuminate the underexplored aspects of fintech's impact on financial inclusion.
12. **Singh, V., & Joshi, A. (2025)** <sup>[12]</sup>: A paper examines the challenges and opportunities in the adoption and growth of digital payments in India from a sociotechnical perspective. The literature review reveals that barriers such as the digital divide, trust and security concerns, regulatory complexities, and cultural attitudes towards cash hinder adoption. The findings highlight the complex interplay of sociotechnical factors influencing the adoption of digital payments.
13. **Gupta, R., & Sharma, S. (2025)** <sup>[13]</sup>: A study examines the behavioural and contextual determinants influencing digital payment trust and perceived cybersecurity in India. The research highlights the importance of addressing security concerns to foster greater adoption of digital payment systems.
14. **Data Security Council of India (DSCI). (2025)** <sup>[14]</sup>: A study explores the key factors shaping user acceptance of digital banking. The research identifies factors such as perceived ease of use, perceived usefulness, and trust as significant determinants of digital banking adoption.

**Table 1:** Table showing Challenges/Limitations of Digital Banking Products

Sl. No.	Digital Banking Product	Challenges/Limitations
1	Unified Payments Interface (UPI)	Fraud risks, phishing scams, dependency on smartphone & internet
2	Mobile Banking Apps	App complexity, security threats, compatibility issues with older devices
3	Internet Banking	Website downtime, complex navigation, less user-friendly for first-time users
4	Debit/Credit Cards	Card fraud, high transaction fees, dependency on bank policies
5	Digital Wallets	Wallet limit restrictions, vulnerability to hacking, requires frequent recharges
6	IMPS (Immediate Payment Service)	Transaction limit per day, dependency on bank server uptime
7	NEFT (National Electronic Funds Transfer)	Works in batch cycles (not real-time), not ideal for urgent transactions
8	RTGS (Real-Time Gross Settlement)	Minimum ₹2 lakh limit, only available during bank hours
9	Aadhaar Enabled Payment System (AePS)	Biometric authentication failures, low awareness among users
10	Digital Lending Platforms	Higher interest rates, risk of fraud, lack of personal interaction
11	Investment Platforms	Lack of financial literacy, risk of investment losses, platform navigation complexity
12	Digital Insurance Services	Low customer awareness, fraud in claims, limited in rural areas
13	Digital Gold & Asset Platforms	Market volatility risk, dependency on internet & smartphone
14	Chatbot & AI-based Banking	Limited understanding of complex queries, occasional errors, trust issues with AI handling

### 3. Research GAP

Despite extensive research on digital banking in India over the past few years, significant gaps remain that require focused attention. Most existing studies concentrate on individual aspects such as digital literacy, cybersecurity, financial inclusion, or regulatory measures in isolation. Few studies holistically analyze the combined impact of technological, social, and institutional barriers from the customers' perspective in India's rapidly evolving digital banking ecosystem.

Most research remains theoretical or policy-focused without offering actionable insights based on customer feedback or empirical data collected post-2023, a period marked by exponential growth in UPI transactions and mobile banking usage.

This study addresses these gaps by empirically investigating the challenges faced by a diverse sample of Indian customers, analyzing factors such as security concerns, digital literacy, service usability and customer support, along with their direct effects on digital banking.

### 4. Materials and Methods

This study follows a descriptive research design aimed at identifying and analyzing the challenges faced by customers using digital banking products in India. The research focuses on collecting primary data directly from respondents to gain first-hand insights into their experiences, perceptions and difficulties related to digital banking services.

#### 4.1 Data Collection Method

Primary data were collected using a structured questionnaire developed based on a thorough review of existing literature. The questionnaire consists of both close-ended and Likert-scale questions designed to capture customer demographics, digital banking usage patterns, awareness, perceived challenges, security concerns, digital literacy levels, and satisfaction with service quality.

#### 4.2 Sample Size and Sampling Technique

The study sampled 120 respondents across urban, semi-urban, and rural areas of Karnataka.

A convenience sampling technique was employed, allowing the researcher to collect data from willing customers who have experience using digital banking products such as UPI apps, internet banking, mobile banking, or debit/credit cards. The sample was selected to reflect a diversity of age groups, educational backgrounds and occupations.

#### 4.3 Data Collection Procedure

Data collection was carried out through face-to-face surveys and online questionnaires during July and August 2025. Each respondent was briefed about the purpose of the study, assured of confidentiality and requested to complete the questionnaire voluntarily.

#### 4.4 Data Analysis Techniques

Collected data were analyzed using statistical tools such as frequency distribution, percentage analysis and mean score analysis. Advanced statistical techniques like Chi-square tests and ANOVA were applied to assess the relationship between demographic factors and the challenges faced.

### 5. Objectives of the study

1. To identify the key challenges faced by customers while using digital banking products in Karnataka in

2025.

2. To analyze the level of digital literacy among digital banking users, especially in rural and semi-urban areas.
3. To assess customers' perception of cybersecurity threats and their impact on digital banking adoption.
4. To evaluate the usability of digital banking products in terms of complexity, user interface design and ease of navigation.
5. To examine the effectiveness of customer support services provided by banks for resolving digital banking issues.
6. To provide practical suggestions and recommendations for improving digital banking services based on customer feedback.

### 6. Limitations of the study

1. The study was conducted with a sample size of 120 respondents only.
2. The study primarily focuses on respondents from Karnataka state, covering urban, semi-urban and rural areas only.
3. A convenience sampling technique was used, which may introduce sampling bias.
4. The data collected through questionnaires are self-reported and hence subject to response bias.
5. The digital banking ecosystem in India is highly dynamic and evolving rapidly. The study reflects the situation only as of August, 2025 only.

### 7. Data analysis and interpretation

**Table 2:** Table showing Demographic Profile of Respondents

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	70	58.33%
	Female	50	41.67%
Age Group	18-25 years	35	29.17%
	26-35 years	45	37.50%
	36-45 years	25	20.83%
	46 years and above	15	12.50%
Location	Urban	60	50.00%
	Semi-Urban	35	29.17%
	Rural	25	20.83%

**Source:** Primary Data

#### Interpretation

A majority of respondents (58.33%) were male, with most respondents in the 26-35 age group (37.50%). Half of the respondents are from urban areas, reflecting broader access to digital banking services.

**Table 3:** Table showing Frequency of Digital Banking Usage

Usage Frequency	Frequency (n)	Percentage (%)
Daily	50	41.67%
Weekly	40	33.33%
Monthly	20	16.67%
Rarely/Never	10	8.33%
Total	120	100.00%

**Source:** Primary Data

#### Interpretation

Approximately 41.67% of respondents use digital banking daily, suggesting it is well-integrated into the daily financial practices of most users. However, 8.33% rarely or never use digital banking, indicating a gap in adoption.



**Table 4:** Table showing Major Challenges Faced by Customers

Challenge	Number of Respondents Reporting	Percentage (%)
Lack of Digital Literacy	15	12.50%
Poor Internet Connectivity	22	18.33%
Cybersecurity Concerns	14	11.66%
Complex User Interface	13	10.33%
Inadequate Customer Support	11	9.16%
Language Barrier	10	8.33%
Fraudulent Transactions	21	17.50%
High Transaction Charges	14	11.66%
Total	120	100.00%

Source: Primary Data

**Interpretation**

The leading challenge is poor internet connectivity (18.33%), followed by fraudulent transactions and cybersecurity concerns. These reflect critical barriers especially in rural and semi-urban areas.

**Table 5:** Table showing Digital Literacy Level

Literacy Level	Frequency (n)	Percentage (%)
High (Confident using apps)	35	29.17%
Medium (Some difficulty)	55	45.83%
Low (Unable to use banking apps)	30	25.00%
Total	120	100.00%

Source: Primary Data

**Interpretation**

Less than one-third of respondents (29.17%) are highly confident in using digital banking apps. A significant proportion (25.00%) struggle to use these services, showing the urgent need for digital literacy programs.

**Table 6:** Table showing Overall Customer Satisfaction

Satisfaction Level	Frequency (n)	Percentage (%)
Very Satisfied	20	16.67%
Satisfied	50	41.67%
Neutral	25	20.83%
Dissatisfied	15	12.50%
Very Dissatisfied	10	8.33%
Total	120	100.00%

Source: Primary Data

**Interpretation**

Only 16.67% of customers report being very satisfied with digital banking services, whereas 21% are dissatisfied or very dissatisfied. This indicates that service quality and user experience need considerable improvement.

**8. Results and Discussions**

- High Usage of Digital Banking Products:** 41.67% of respondents use digital banking services on a daily basis, indicating strong adoption among active users, particularly in urban areas.
- Predominant Digital Literacy Gap:** A significant portion of respondents reported lack of digital literacy as a major challenge when using digital banking services.
- Internet Connectivity Issues:** 18.33% of respondents experience poor or unstable internet connections, particularly in semi-urban and rural regions, hindering smooth transactions.
- Cybersecurity Concerns Affect Trust:** 11.66% of

respondents expressed fear of cybersecurity threats such as phishing and identity theft, reducing their trust in digital banking platforms.

- Complex User Interface:** Around 10.33% of respondents find digital banking apps complicated to navigate, especially for elderly users and first-time customers.
- Inadequate Customer Support Services:** 9.16% of respondents stated that customer support services are ineffective or slow in resolving digital banking issues.
- Language Barriers Impede Usage:** 8.33% of respondents reported that the lack of regional language options in apps limits their ability to use digital banking services.
- Fraudulent Transactions Reported:** 17.50% of customers experienced at least one instance of fraud or unauthorized transactions during their digital banking usage.
- High Transaction Charges Affect Usage:** About 11.66% of respondents cited high transaction fees as a deterrent from using certain digital banking services frequently.
- Moderate Overall Customer Satisfaction:** Only 16.67% of respondents were very satisfied with digital banking services, while 21% expressed dissatisfaction, signalling the need for improvement in service delivery, user interface, and trust-building measures.

**9. Suggestions and Recommendations**

- Enhance Digital Literacy Programs
- Simplify User Interface Design
- Offer Multilingual Support
- Strengthen Cybersecurity Measures
- Improve Customer Support Services
- Subsidize Transaction Charges for Low-Income Users
- Raise Awareness of Fraud Prevention Practices
- Improve Network Infrastructure
- Implement Faster KYC Processes
- Regular Security Audits
- Offer Offline Assistance Centres
- Incentivize Digital Banking Usage with Zero fee transactions
- Integrate Financial Literacy into School Curriculums
- Monitor Customer Feedback Regularly.

**10. Conclusion**

The study reveals that digital banking in India has seen exponential growth in recent years, with UPI transactions crossing 20 billion in August 2025, amounting to approximately ₹24.85 lakh crore in total value. Despite this rapid expansion, a significant portion of customers still face multiple challenges while using digital banking products. The study found that 12.50% of respondents identified lack of digital literacy as a major hurdle, and 18.33% struggled with poor internet connectivity, particularly in rural and semi-urban areas. Additionally, 11.66% of customers expressed serious cybersecurity concerns, leading to a lower level of trust in digital transactions. These figures indicate that technological adoption alone is not sufficient without adequate digital infrastructure and customer empowerment. The findings further highlight that only 29.17% of respondents feel highly confident using digital banking services, while 25% report significant difficulty or inability to use such services. Complex user interfaces, limited

regional language support, and inadequate customer care services remain prominent obstacles. With only 16.67% of customers reporting high satisfaction levels, the study clearly indicates the need for banks to focus on user-centric solutions. Moreover, regulatory measures such as increased IT spend, reflect institutional efforts, but still require alignment with customer-centric needs to build trust.

In conclusion, addressing these challenges demands a multi-faceted approach involving digital literacy programs, improved cybersecurity measures, infrastructure development, and customer support enhancement. Policymakers and banks must collaborate to ensure that digital banking services are not just widely available but also easy, safe, and reliable for every customer segment, especially the underserved rural population. Strengthening these areas will be key to achieving true financial inclusion and sustaining the growth of digital banking in India beyond 2025.

### 11. Scope for future research

Future research can focus on conducting longitudinal studies that track changes in customer behaviour, satisfaction, and challenges over time. This will help understand how improvements in infrastructure, policies, and digital literacy programs affect adoption rates and customer experiences.

There is scope for detailed comparative research on the behavioural differences, needs, and challenges faced by rural, semi-urban, and urban customers using digital banking products. Such studies can guide banks in designing targeted services that cater to diverse regional requirements. Future studies can analyze the impact of emerging technologies such as Artificial Intelligence (AI), blockchain, and biometric authentication in enhancing the security and usability of digital banking systems. Research can also explore how these technologies can improve fraud detection and customer service automation.

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