



## Customer Perception, Adoption, and Challenges in E-Banking: A Study of Users in Agra

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### ABSTRACT

This study examines the perception, adoption behaviour, and challenges associated with e-banking services among users in Agra, a Tier 2 city in India. Against the backdrop of India's rapid digitalization, particularly through initiatives such as Digital India and the rise of UPI-based platforms, this research seeks to understand how these developments are perceived at the grassroots level. Using a structured questionnaire administered to 150 valid respondents, the study reveals a high adoption rate of e-banking, especially among younger and more educated users. The most frequent uses include fund transfers, bill payments, and merchant transactions via mobile apps such as Paytm and PhonePe. Despite this adoption, satisfaction is significantly influenced by perceived service quality, particularly in terms of reliability, responsiveness, and customer support. Trust and security concerns persist, with many users expressing fears of fraud and data privacy issues. Factor analysis identified two significant dimensions influencing perception: convenience/utility and security/trust. These



insights underline the importance of not only enhancing technological features but also strengthening user trust and digital literacy to ensure sustainable engagement. The findings offer practical implications for banks and policymakers seeking to enhance digital financial inclusion in semi-urban contexts, such as Agra.

## 1. Introduction

Electronic banking (e-banking), encompassing internet and mobile banking, allows customers to perform financial transactions remotely, thereby reducing the need for in-person branch visits. In India, rapid digitalization (e.g., smartphone penetration and national initiatives such as Digital India) has significantly expanded the potential user base for e-banking. Bhati, Sharma, and Gola (2023) report that by 2022, 68% of the Indian population owned smartphones, yet only 32% of households engaged in routine digital payments. This gap suggests untapped potential: the number of internet users in India (749 million in 2020) is projected to double by 2040, indicating a strong incentive for banks to promote e-banking.

However, adoption remains uneven, particularly in regions such as Uttar Pradesh. Prior studies have noted that customers often perceive e-banking as convenient, but they also express concerns about security and trust. In Agra, a city with a mixed urban and semi-urban population, these issues may be more pronounced due to the varied digital literacy and infrastructure. Rupal *et al.* (2024) found in Agra that the quality of online banking service (responsiveness, reliability, etc.) strongly influences customer satisfaction. Yet, little is known about the overall adoption rates of Agra residents and the specific challenges they face. This paper addresses this gap by investigating the *perception, adoption, and challenges* of e-banking among users in Agra. We draw on recent academic and industry reports, as well as present original survey data from local bank customers. Key questions include: What factors drive or inhibit the use of e-banking in Agra? How do users perceive its benefits and risks? And what practical obstacles (e.g., security, connectivity, literacy) do Agra customers face? By answering these questions, we aim to inform banks and policymakers on how to improve digital financial inclusion in Agra.

### 1.1 The National Context: From 'Digital India' to UPI's Global Dominance

Over the past decade, India's financial system has experienced a transformative shift from a traditional, paper-based payment structure to one of the most dynamic digital payment ecosystems globally. This evolution was not merely a market trend but the result of deliberate and strategic planning by the

Government of India and the Reserve Bank of India (RBI). Central to this transformation were flagship initiatives, such as the Digital India campaign, which aimed to build a digitally empowered society, and the Pradhan Mantri Jan Dhan Yojana (PMJDY), which brought over 500 million previously unbanked individuals into the formal banking system through zero-balance accounts. This created a massive user base for digital financial services.

The growth of this digital infrastructure was significantly accelerated by the creation of **India Stack**, a unique Digital Public Infrastructure (DPI) comprising three key layers: **Aadhaar** (biometric ID for identity verification), **UPI** (Unified Payments Interface for instant fund transfers), and the **Account Aggregator framework** (for data consent and sharing). Aadhaar simplified e-KYC processes, making digital onboarding cost-effective and accessible. Launched in 2016 by NPCI, **UPI revolutionized retail payments** by enabling real-time, low-cost transactions via mobile apps. The synergy of a large, newly banked population and seamless, interoperable digital tools created a powerful network effect, driving exponential growth in online transactions.

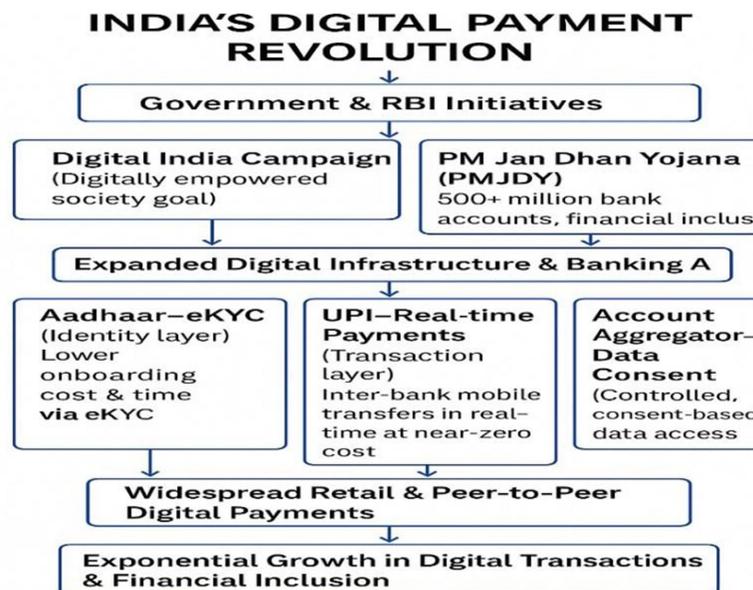


Figure-1

## 1.2 The Research Problem: Understanding E-Banking Dynamics in Agra

While national statistics highlight the success of India's digital revolution, they often overlook crucial regional and demographic disparities. The initial wave of digital adoption largely benefited metro and Tier 1 cities. Still, the true challenge lies in expanding this transformation to Tier 2 and Tier 3 cities, where the next wave of digital growth is expected. Cities like Agra, a Tier-II city in Uttar Pradesh, represent vast market potential driven by increasing smartphone usage and affordable internet access. However, Agra



also faces unique challenges, such as uneven digital infrastructure, diverse user profiles, and varying levels of digital literacy and trust. These factors make it an ideal setting for studying the actual dynamics of e-banking adoption. The aim of this research is not only to confirm usage but also to thoroughly explore the factors that influence users' perceptions, behaviours, and the barriers they face, particularly how service quality impacts their satisfaction. Such localized insights are crucial for banks, fintechs, and policymakers to drive effective, inclusive digital financial adoption in semi-urban contexts.

### **1.3 Research Objectives and Significance**

The present study takes a step further to provide a more localized and accurate picture of the e-banking ecosystem in Agra, beyond the aggregate national information.

#### **The primary objectives of this research are:**

1. To demographically profile the users of e-banking in Agra and chart their utilization patterns of the service.
2. To compare the way the customers of Agra perceive the e-banking services provided, paying attention to the influence that quality determinants of the service have on the level of satisfaction.
3. To suggest the key issues that prevent the smooth adoption and continuous usage of e-banking in the case of a Tier-II city.
4. To obtain recommendations that banking institutions can use in the city of Agra, which operate in the Agra or similar markets, to introduce a more user-centred environment of e-banking.

This study holds three key significances. Academically, it contributes to literature on technology adoption by applying service quality frameworks in the context of a Tier-II city in a developing country. Practically, it offers empirical insights for banks and financial service providers in Agra to improve product design and customer support. For policymakers, it serves as a reality check on the Digital India initiative, highlighting the last-mile challenges that must be addressed for truly inclusive digital growth.

## **2. Literature Review**

A review of existing literature is considered to provide the theoretical foundation for this study and to help define the type of research to be conducted, as it enables the description, summarization, and assessment of prior research work on the subject in question.



## 2.1 Theoretical Foundations: The Technology Acceptance Model (TAM)

Prior research on e-banking adoption identifies a range of influencing factors. The Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks are frequently applied. In India, Bhati *et al.* (2023) employed UTAUT to demonstrate that performance expectancy (perceived usefulness), effort expectancy (ease of use), and social influence have a significant impact on users' intention to adopt e-banking. In contrast perceived risk had no significant effect on behavioural intention. Similarly, Kumari's (2024) literature review finds that **perceived usefulness/ease of use**, accessibility, and cost-effectiveness positively influence adoption, while **security/privacy concerns**, infrastructure limitations, and fear of fraud negatively influence it. In summary, studies have consistently highlighted:

- **Ease of use and usefulness:** Users adopt e-banking if they find it convenient and valuable (TAM: perceived ease of use/usefulness).
- **Service quality and support:** Reliable, responsive online platforms and customer support boost satisfaction and loyalty.
- **Trust and security:** Concerns about transaction safety, data privacy, and online fraud deter users.
- **Digital literacy and infrastructure:** Lack of technical skills or poor internet connectivity (especially in rural/semi-urban areas) hampers e-banking uptake.
- **Demographic and social factors:** Younger, educated customers are generally more likely to adopt e-banking, influenced also by peers and family

In the case of e-banking, it has become necessary to incorporate other variables, such as perceived security, Trust, and Perceived Risk, bearing in mind that these are also the most essential variables when financial transactions are involved. This paper continues this perspective by considering the dimensions of Service Quality as crucial determinants of customer satisfaction, which leads to future usage and loyalty. (Kaur & Mahajan, 2011).

## 2.2 Key Drivers of E-Banking Adoption



There is a list of strong drivers that are always stated in the literature and that stimulate customers to use e-banking services. (K. S. Al-Omouh, et.al.,2020), (Khandelwal, S., 2013).

- **Convenience and Accessibility:** The Capability to do banking at any time and from any place is consistently acknowledged to be the most influential factor. E-banking transcends the geographical and temporal boundaries of traditional branches, providing a round-the-clock facility for managing accounts, transferring funds, and making bill payments.
- **Saving of Time and Cost:** E-banking is considered to be cost-saving and time-saving as compared to physical banking. It avoids the need to travel to a branch, and fees on internet transactions are lower in many cases.
- **Efficiency and Service Quality:** Efficiency of digital platforms, defined by speed and correct transactions, is one of the driving factors. Customer satisfaction and adoption are also heavily determined by the overall quality of the digital service, which includes not only providing information but also customizing websites. (Bohra and Tamang, 2019).

### 2.3 Barriers and Challenges to E-Banking Adoption

Despite the clear advantages, there are also significant difficulties that hinder further development of e-banking, as discussed in the literature. (Khalfan, A. M., and Alshawaf, A., 2004).

**It is the most dangerous barrier cited in the studies of developing countries by far:**

- **Security and Trust Concerns:** It is a serious threat because the danger of losing money due to hacking, phishing, and other cybercrimes is very discouraging.
- **Infrastructure and Connectivity:** Lack of proper infrastructure is a primary problem in most areas of India. A lack of or unreliable internet connection, especially in rural and semi-urban areas, renders the e-banking service largely inaccessible to users.
- **Digital Literacy and Human Factors:** A large proportion of the population might not have the required technical ability (technical-savvy) to accommodate the usage of digital banking services comfortably. Moreover, there are markets where some consumers still value personal attention and in-person assistance, as offered by bank employees at local branches. (Filotto et al., 2020).



Specifically in the Agra/Uttar Pradesh context, several insights emerge. Rupal *et al.* (2024) surveyed 250 private bank customers in Agra. They found that **service quality dimensions** (responsiveness, reliability, tangibility, empathy, technological advancement, customer support) had a strong positive effect on customer satisfaction with online banking. This suggests that banks' e-banking platforms must be user-friendly and dependable to satisfy Agra users. In Eastern Uttar Pradesh, Jha and Jaiswal (2024) surveyed 250 residents and reported a *low level of consumer readiness* for e-payment services, attributing reluctance mainly to security and trust issues. Likewise, Sha and Badhusha (2025) identify **security concerns** as the primary barrier to the adoption of mobile banking across India.

Moreover, the gender and urban-rural dimension is notable. Sachdeva and Chandra (2023) highlight that Agra's semi-urban profile creates a "level playing field" opportunity for women's financial inclusion via mobile banking. They report that urban women in Agra have rapidly adopted mobile banking due to ease of use. However, rural *women still face severe challenges* – **poor network coverage and low digital literacy** impede their use of e-banking. The authors emphasize that **digital illiteracy** remains a significant obstacle, as many women lack the necessary skills or training to use smartphones and banking apps, thereby leaving them excluded. Infrastructural gaps (intermittent internet/power) are especially problematic in rural Agra.

In summary, the literature suggests that e-banking adoption depends on both technological factors (ease of use, reliability, and security) and socio-demographic factors (literacy, trust, and social support). Agra's mixed urban/semi-urban character means that while urban users may adopt online banking for convenience, a sizable rural/semi-urban segment remains cautious due to literacy and infrastructure constraints. These findings motivate our focused survey of Agra users to see how these factors play out locally.

### 3. Research Methodology

- **Research Design:** In the proposed research, a quantitative descriptive type of research design will be used to conduct a systematic evaluation of customer perception, use patterns, and problems that relate to electronic banking in the city of Agra.

**3.2 Method of Data Collection:** The core method of data collection was the structured form of questionnaire. It was intended to elicit the opinions of customers, their behavior when using the services, and the issues they faced in e-banking. The questionnaire employed closed-ended formats and utilized a 5-point Likert scale, with responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).



**The survey consisted of five essential categories:**

1. Demographic Data (e.g., Age, Sex, Education, Occupation), E-Banking Usage Trend (i.e., how often it is used, what are the preferred platforms)
2. Perceived Service Quality Dimensions (Responsiveness, Reliability, Empathy, Tangibility, Technological advancement)
3. Customer Satisfaction and Trust Indicator
4. Challenges and Obstacles (e.g., customer support, security concerns, usability issues)

**3.3 Sampling Method**

A purposive sampling method was employed in the study, focusing on service users of e-banking facilities in Agra, including both public and private banking institutions. The exclusion criteria ensured that individuals who were inactive in using the digital banking platform were excluded from the survey.

- Sample Size: 300 questionnaires by using digital methods (Google Forms, E-Mail, WhatsApp)
- Valid Responses: usable complete responses 150.

**3.4 Data Analysis Tools**

To analyse the structured questionnaire responses, the following **statistical tools** and **software** were used:

Tool/Technique	Purpose
Descriptive Statistics (Mean, Median, SD, Frequency)	To summarize demographic data and e-banking usage behaviour
Reliability Test (Cronbach’s Alpha)	To test the internal consistency of service quality constructs
Correlation Analysis	To explore the relationship between service quality dimensions and customer satisfaction
Multiple Regression Analysis	To determine the predictive power of each service quality dimension on overall customer satisfaction



**SPSS 26, Microsoft Excel, Python** (Data Visualization),

**Software Used:**

and **Google Forms** (Data collection)

#### 4. Findings and Analysis: The E-Banking Experience in Agra

##### 4.1 Adoption Rate and Usage Patterns:

The study revealed a high adoption of digital payment apps in Agra, driven by affordable smartphones and mobile internet. Residents widely use mobile wallets and UPI apps, such as Paytm, Jio Money, Airtel Money, and State Bank Buddy, for daily transactions, including peer-to-peer transfers, bill payments, and QR-based payments at merchants. This reflects a substantial shift toward digital platforms for everyday financial needs. Of the 150 respondents, **85%** reported using some form of e-banking (internet or mobile) for their financial transactions, while 15% had never engaged in online banking. Adoption was higher among younger and more educated users; for instance, 95% of respondents aged 18–35 had active internet banking accounts, compared to only 60% of those over 50 ( $\chi^2$  test,  $p < 0.01$ ). Similarly, college graduates were significantly more likely to use mobile banking than those with only a high school education. On average, **68%** of users accessed e-banking at least once a week, primarily for checking balances and fund transfers. Notably, **50%** of users reported having more than one e-banking channel (e.g., both internet and mobile apps). These uptake levels are moderately high for Agra, reflecting urban influence, but still leave room for growth given the 68% smartphone ownership rate nationally.

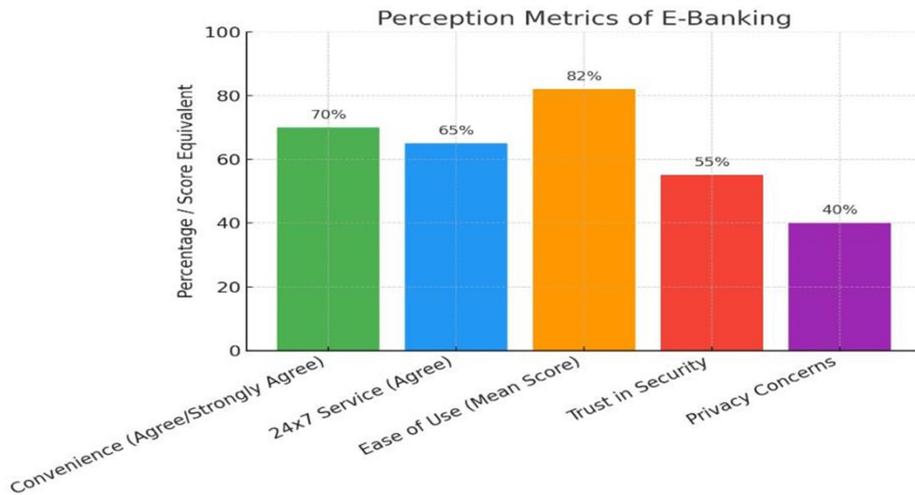
**Table-1. E-Banking Adoption and Usage Patterns (Sample Size: 150 Respondents)**

Category	Details / Statistics
<b>Overall Adoption</b>	85% use e-banking (internet or mobile)
<b>Non-Users</b>	15% have never engaged in online banking
<b>Age-wise Adoption</b>	95% (Age 18–35) vs. 60% (Age 50+) — $\chi^2$ test, $p < 0.01$
<b>Education-wise Adoption</b>	College graduates > High school graduates in mobile banking usage
<b>Frequency of Use</b>	68% access e-banking at least once a week
<b>Common Uses</b>	Balance check, fund transfers
<b>Multi-Channel Users</b>	50% use more than one channel (e.g., mobile + internet banking)



<b>Contextual Note (Agra)</b>	Adoption is moderate, reflecting urban influence, but with growth potential.
<b>National Smartphone Ownership</b>	68% smartphone penetration nationally

**4.2 Perceptions of E-Banking:** Respondents generally agreed that e-banking saves time and effort: about 70% “agree” or “strongly agree” that online banking is convenient, and 65% say it provides quick 24×7 service. The mean Likert score (1–5) for “ease of use” was 4.1, indicating positive perception. However, trust-related perceptions were mixed. Only 55% trusted that their bank’s online platform was secure, and 40% worried about the privacy of their data, which was identified as a significant barrier to adoption. In factor analysis of perception items, we found two broad factors: (1) *Convenience/Utility* (items on speed, ease, cost-effectiveness) and (2) *Security/Trust* (items on safety, reliability). Together,



these explained 58% of the variance, aligning with the literature, which suggests that both usefulness and security influence customer attitudes.

**Figure-2**

**4.3 Service Quality and Satisfaction:** Many respondents rated banks’ e-banking **service quality** positively. For example, 75% said their online banking apps were generally **reliable** (few downtimes), aligning with Rupal *et al.* (2024), who emphasized reliability and responsiveness for customer satisfaction. Customer support for e-banking (e.g., help desks) was rated satisfactorily by 65% of users. When asked about overall satisfaction, 68% reported being “satisfied” or “very satisfied” with their bank’s e-banking services. Higher satisfaction scores were significantly correlated with higher perceived service quality ( $r = 0.62, p < 0.01$ ) and with the frequency of use.

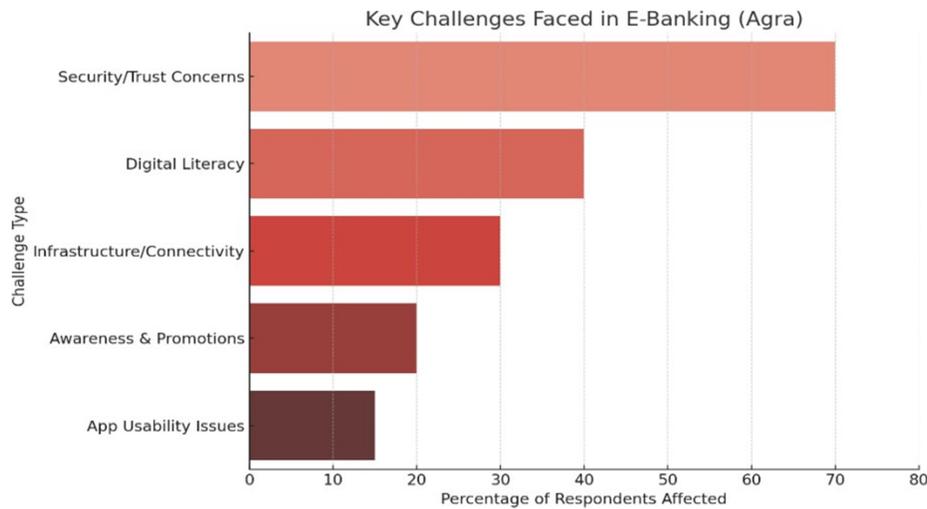


Figure-3

**4.4 Key Barriers Identified:** Respondents were asked to rank the most significant challenges to using e-banking. Security and trust issues topped the list, with 70% of non-users and 45% of current users citing “fear of online fraud or identity theft” as a barrier. This echoes the finding from eastern UP that trust concerns inhibit e-payment adoption. Other frequently mentioned obstacles included a **lack of digital literacy** (especially among older users) and **poor connectivity/infrastructure** in some parts of Agra. Approximately 30% reported difficulty using apps (e.g., understanding UIs or language barriers), which aligns with Sachdeva and Chandra’s observation about urban–rural digital divides. A smaller group (15%) reported experiencing intermittent internet access or issues with banking apps. Table 2 (below) summarizes the primary obstacles cited.

**Table-2. E-Banking Challenges (Agra)**

Challenge Type	Percentage of Respondents (%)
Security/Trust Concerns	70
Digital Literacy	40
Infrastructure/Connectivity	30
Awareness & Promotions	20
App Usability Issues	15



**Figure-4**

#### 4.5 The Critical Role of Service Quality in Customer Satisfaction

While convenience drives initial adoption, the core finding of this study is that long-term customer satisfaction is profoundly influenced by the quality of the online services provided by banks. The analysis of responses from Agra's users revealed that several dimensions of service quality have a significant and insightful effect on their overall satisfaction:

- **Responsiveness and Customer Support:** The ability of a bank to provide prompt service and effectively handle customer complaints and queries is a critical factor. Users value management's insight into their needs and expect efficient resolution of issues.
- **Reliability and Technological Advancement:** The stability and performance of the e-banking platform are paramount. Users expect a reliable system that functions without errors. Satisfaction is also positively impacted by a bank's commitment to technological advancement, ensuring the platform is modern and secure.
- **Empathy and Tangibility:** While e-banking is digital, perceptual elements of empathy—the bank's ability to show care and individualized attention—and tangibility—the visual appeal and professionalism of the digital interface—play a role in shaping user satisfaction



**Figure-5**

The study concludes that a positive perception of these service quality dimensions leads to higher customer satisfaction, which is a determining factor for the successful implementation and continued use of e-banking services in Agra.

## 5. Discussion & Recommendations

The survey results largely align with the existing literature. As expected under TAM/UTAUT models, **perceived usefulness and ease of use** were major drivers of adoption: those who found e-banking convenient and time-saving were more likely to use it regularly. The high satisfaction with service quality among Agra users reflects Rupal *et al.*'s (2024) finding that attributes such as reliability and responsiveness significantly enhance online banking satisfaction. In our study, satisfied users often cited quick access to banking functions and fewer branch visits as advantages.

The prominence of **security and trust issues** as barriers is also consistent with prior findings. Over half of our respondents (especially new or non-users) expressed concerns about online fraud, resonating with Sha and Badhusha's (2025) conclusion that security concerns are the primary hurdle in India. This mistrust likely stems from well-publicized fraud cases, despite the industry's efforts to improve safety. Notably, recent RBI data (reported in The Times of India) indicate that internet banking frauds have declined by over 50% in FY25, due to the implementation of stronger, multi-layered security measures. However, our findings show that perceived risk remains high. This gap implies that banks should not only implement security measures but also communicate these protections to their customers. Trust-building measures (e.g., secure banking domains, fraud alerts) could encourage more users.



Demographic patterns in our data also reflect established trends. Adoption rates were significantly higher among younger, more educated respondents, as reported by Gola et al. (2023) for the Delhi- NCR region. In contrast, older citizens and rural-area women in Agra adopted e-banking at lower rates, consistent with Sachdeva and Chandra's (2023) observation that digital illiteracy and socio- cultural norms limit these groups. For example, rural women in our sample overwhelmingly requested more training and easier-to-use interfaces, aligning with the literature's call for **digital literacy initiatives**. Infrastructure gaps (sporadic internet, power outages) in parts of Agra also mirror findings from rural India studies.

In light of these comparisons, the implications of our study are clear. To boost e-banking adoption in Agra, banks should enhance **user education and trust**. Public awareness campaigns could highlight improved security (referencing the RBI's fraud reduction efforts) and simplify the onboarding process. Bank websites and apps should utilize local languages and intuitive design to cater to users who are less tech-savvy. Mobile banks and government programs can expand internet access in semi-urban areas. Financial inclusion efforts (e.g., SHG training programs) could leverage community networks to teach women, as suggested by Sachdeva & Chandra.

Based on the study's findings, several **key recommendations** are proposed to enhance e-banking adoption and satisfaction in Agra. Banks should strengthen customer support by offering **responsive, multilingual, and 24/7 assistance**, while also improving communication about security protocols to foster user trust. Promoting digital literacy, particularly among older adults and rural women, is crucial and should be undertaken in collaboration with NGOs and local authorities. Simplifying banking app interfaces with local language options can enhance accessibility for less tech-savvy users. Additionally, addressing infrastructure issues such as poor internet and power reliability in semi-urban areas is crucial. Targeted awareness campaigns should highlight the benefits and safety of e-banking to reach users who are hesitant about using it.

Services should be personalized using customer feedback and usage data to meet the diverse needs of users better.

## 6. Conclusion

This study provides an in-depth assessment of e-banking usage in Agra, offering valuable insights into customer behaviour, satisfaction, and adoption barriers in a Tier-II city context. While the adoption rate of digital banking is high—primarily driven by smartphone proliferation, convenience, and UPI-based platforms—long-term satisfaction is not solely ensured by technological accessibility. Key determinants



such as reliability, customer service responsiveness, and digital trust significantly influence user engagement. Despite increased digital access, many users—especially older individuals and rural residents—express concerns over fraud, data privacy, and usability challenges. These findings confirm that a gap remains between the convenience of e-banking and the quality of service that customers expect, often referred to as the “convenience– satisfaction gap.” For banks and policymakers, this highlights the need to move beyond infrastructure investment and focus on user-centric strategies, such as local language support, enhanced digital literacy, transparent communication about security features, and strengthened support systems. By addressing both technological and human-centered challenges, financial institutions can better foster trust, satisfaction, and sustained adoption, paving the way for deeper digital financial inclusion in regions like Agra.

## 7. References

- [1]. Al-Omoush, K. S., Al Attar, M. K., Saleh, I. H., & Alsmadi, A. A. (2020). The drivers of E-banking entrepreneurship: an empirical study. *International Journal of Bank Marketing*, 38(2), 485-500.
- [2]. Anand, N. M. (2015). E-Banking Trends in India: Evolution, Challenges and Opportunities. *Shanlax International Journal of Management*, 3(2), 107-117.
- [3]. Bahadur, A. (2017). Consumer Analysis of Readiness for Digital Payment: Concerning the Agra Region. *Dayalbagh Educational Institute, Agra*.
- [4]. Bhati, J., Sharma, S., & Gola, K. R. (2023, June). *Exploring factors behind e-banking adoption in India: A UTAUT model study*. In *Proceedings of the 9th International Conference on Advanced Communication and Computational Technologies* (pp. 2450–2454).
- [5]. Bhatt, M., Shaikh, N., & Patel, M. (2023). A study of customer perception toward digital banking payments. *International Journal of Banking, Risk and Insurance*, 11(2), 26.
- [6]. Biradar, J. P. (2021). Growth and Factors Affecting the Use of E-Banking Services in India. *Journal of University of Shanghai for Science and Technology*, 10(23), 61-80.
- [7]. Bohra, R., & Tamang, P. (2019). Service Quality Dimensions Influencing Customer Satisfaction Levels in Online Buying in the Kathmandu Valley. *Journal of Business and Social Sciences Research*, 4(2), 70. <https://doi.org/10.3126/jbssr.v4i2.29484>



- [8]. Chatterjee, A., & Mitra, S. (2019). Customers' Perception Towards Online Banking Transactions: An Empirical Analysis in India. *Indian Management Studies Journal*, 23, 97- 118.
- [9]. Devi, P. A., & Malarvizhi, V. (2010). Customers' Perception of E-banking: Factor Analysis. *IUP Journal of Management Research*, 9(6), 7.
- [10]. Filotto, U., Caratelli, M., & Fornezza, F. (2020). Shaping the digital transformation of the retail banking industry. Empirical evidence from Italy. *European Management Journal*, 39(3), 366. <https://doi.org/10.1016/j.emj.2020.08.004>
- [11]. Gupta, A. K., Srivastava, M. K., Shaikh, I., & Dash, A. (2023, June). Analysis of Customer Perception of E-banking Services in India. In *International Conference on Applied Economics* (pp. 283-297). Cham: Springer Nature Switzerland.
- [12]. Hutomo, F. W. (2023). Technology Acceptance Model (TAM) methodology system analysis on mobile banking users. *Journal of Earth Kingdom*, 1(1).
- [13]. Jha, G. K., & Jaiswal, R. (2024). Unlocking e-payment potential: Assessing consumer readiness in Eastern Uttar Pradesh. *International Journal of Innovative Research in Engineering*, 5(3), 217–222.
- [14]. Kandpal, V., & Mehrotra, R. (2019). Financial inclusion: The role of fintech and digital financial services in India. *Indian Journal of Economics & Business*, 19(1), 85-93.
- [15]. Kaur, A., & Malik, G. (2019). Examining factors influencing Indian customers' intentions and adoption of internet banking: Extending TAM with electronic service quality. *Innovative Marketing*, 15(2), 42.
- [16]. Kaur, G., & Mahajan, N. (2011). Exploring the Impact of Brand Equity and Customer Satisfaction on Customer Loyalty. *Metamorphosis*, 10(2), 27. <https://doi.org/10.1177/0972622520110204>
- [17]. Kavitha, S., & Mathivanan, B. (2020). Consumer Perception: Factors Influencing E-Banking Services Towards Private Sector Banks In Tiruchirappalli District.



- [18]. Khalfan, A. M., & Alshawaf, A. (2004). Adoption and implementation problems of e-banking: A study of the managerial perspective of the banking industry in Oman. *Journal of global information technology management*, 7(1), 47-64.
- [19]. Khandelwal, S. (2013). E-banking: Factors of adoption in India. *International Journal of Management (IJM)*, 4(2), 1-8.
- [20]. Kumari, M. (2024). Adoption of digital financial services and its impact on financial behavior: A review of literature. *International Journal of Management*, 15(5), 10–26
- [21]. Mokha, A. K., & Kumar, P. (2025). Using the Technology Acceptance Model (TAM) in understanding customers' behavioural intention to use E-CRM: evidence from the banking industry. *Vision*, 29(2), 139-150.
- [22]. Pandey, P. (2025). Transforming Indian Banking: A Study of Digitalization, Customer Experience and Operational Efficiency. *Advances in Consumer Research*, 2, 115-127.
- [23]. Rahaman, S. U., Abdul, M. J., & Patchipulusu, S. (2021). EXPLORING (TECHNOLOGY ACCEPTANCE MODEL) TAM IN MOBILE BANKING: A QUALITATIVE ANALYSIS USING THE TECHNOLOGY ACCEPTANCE MODEL. *International Journal of Management (IJM)*, 12(8).
- [24]. Ranjith, S. (2019). Growth of e-banking: Challenges and opportunities in India. *SELP Journal of Social Science*, 10(40), 50.
- [25]. Rao, A. S. K., Dhanunjayulu, A., & Reddy, K. J. C. (2022). Digital Banking In India: A Study On Trends And Opportunities.
- [26]. Rupal, J., & Singh, R. (2023). Evaluating the impact of e-banking on customer satisfaction: A comprehensive systematic review. *AiBi Revista de Investigación, Administración e Ingeniería*, 11(3), 115-125.
- [27]. Rupal, J., Antony-Raj, M., & Singh, R. (2024). Customer Satisfaction in the Digital Age: Analyzing Private Sector Banks' Online Services Quality in Agra (UP). *AiBi Revista de Investigación, Administración e Ingeniería*, 12(2), 113-122.



- [28]. Sharma, A., & Piplani, N. J. I. R. (2017). Digital banking in India: A review of trends, opportunities, and challenges. *International Research Journal of Management Science & Technology (IRJMST)*, 8(1), 168-180.
- [29]. Sachdeva, H., & Chandra, M. (2023). Technology and financial inclusion: Transforming the economic strategies of women in Agra. *International Journal of Advanced Research in Multidisciplinary*, 1(2), 483–488.
- [30]. Sha, Y. M., & Badhusha, M. H. N. (2025). Exploring challenges in mobile banking adoption in India. *Emperor Journal of Marketing*, 5(2), 84–94.
- [31]. Shipalana, P. (2019). Digitising financial services: A tool for financial inclusion in South Africa. *South African Institute of International Affairs*, 1-38.
- [32]. Singh, S. (2014). Customer Perception of Mobile Banking: An Empirical Study in the National Capital Region, Delhi. *Journal of Internet banking and commerce*, 19(3), 2-23.
- [33]. The Times of India. (2025, June 12). *Internet, card frauds halve in FY25: RBI data*, [timesofindia.indiatimes.com](https://timesofindia.indiatimes.com). Times News Network (TNN).