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Research Article

# Service quality's role in the customer digital banking adoption process with special reference to Thiruvarur

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**Abstract:** This study examines the factors influencing customer satisfaction, trust, and preference toward digital banking services. Data were collected from digital banking users through a structured questionnaire and analyzed using Structural Equation Modeling (SEM) with AMOS. The findings reveal that Service Quality, System Quality, and Facilitating Conditions significantly enhance Customer Satisfaction, while Service Quality positively influences Customer Trust. Trust was found to have a significant positive effect on Preference toward Digital Banking Services. However, Trust, Perceived Risk, and Customer Experience did not significantly affect Customer Satisfaction, and Customer Satisfaction did not significantly influence customer preference. The study concludes that improving service quality, system performance, and customer trust is essential for increasing the adoption and preference of digital banking services.

**Keywords**: Digital Banking Services, Customer Satisfaction, Customer Trust, Service Quality, System Quality, Facilitating Conditions, Customer Preference, SEM.



## INTRODUCTION

India has become one of the world's fastest-growing digital banking markets driven by the fast-growing smartphone penetration, the support of government and the changing consumer preferences. The banking sector has moved from branch-based services to digital and technology-based banking services that are now available, efficient and customer-driven. Digital transactions constitute an enormous share of banking activities and over 95 percent of payment transactions in the banking, financial services and insurance (BFSI) sector are done using digital channels. A major reason for this transformation is the widespread adoption of the Unified Payments Interface (UPI) technology which has revolutionized the digital payment ecosystem in India. UPI is now the most common payment platform with more than 75 percent of retail digital payment transactions made through digital channels. With its ease of use, real-time settlement and the interoperability between banks, it has brought a lot of convenience to the customer and moved the country towards a digital economy. The UPI transaction value is well over ₹23 lakh crore every month, as the trust and acceptance of digital payment systems by Indian consumers is growing. Digital banking is also supported by the government in India. The Digital India program of the Government of India has been launched to build up digital infrastructure and internet services and improve the digital literacy among people in India. The so-called Aadhaar-enabled verification systems and the Pradhan Mantri Jan Dhan Yojana are also tools to make banking services available to millions of people who have been unbanked from the start and that is where the focus is on financial inclusion in India and in this way the country is becoming a more diverse and digitally literate country. Technology revolutionizing the banking system is changing the banking sector and these are the changes in technology that we can see. Banks are increasingly using artificial intelligence, machine learning, cloud computing, big data analytics and blockchain technologies to increase efficiency and customer service. AI chatbots are all over the place to serve people 24/7 and predictive analytics enable banks to offer customized financial products and services. Many banks have also started using integrated digital platforms or "super apps" to integrate banking, insurance, investments, budgeting and

tax management services in one place. Digital Banking Units (DBUs) are now a part of India's digital banking ecosystem. These are specialized units for delivering digital banking services in a complete user experience and are being adopted in semi-urban and rural areas to bridge physical and digital financial services. DBUs empower customers on a digital basis and will make assistance and guidance available to them if needed. Neo-banks and fintech companies in the banking sector have brought about a digital transformation and modern banking is not only a game changer but also a new era that has made it possible for the banking sector to become a digital banking and finance industry. Neo-banks provide digital savings accounts, instant payments, personal finance management and micro loans without branches. They have attracted young people, new startups and small and medium enterprises (SMEs) to them but also the regulatory environment. The RBI has introduced policies and guidelines to strengthen cybersecurity and consumer data and stabilize the digital financial system. To keep trust in digital banking platforms, risk management, fraud prevention and consumer protection must be the focus of regulatory authorities globally. Digital banking in India is clearly evolving in a very promising way. The internet access and digital payments access, the technology of artificial intelligence and financial inclusion are expected to keep digital banking growth going with the continued growth of internet access and digital payment. With the rise of cloud-based technology, data analytics and customer-centric digital solutions, the digital banking sector is going to become a key driver of India's economic and financial growth and development which is going to be the reason for the digital banking industry (especially for banks) in India.

## RESEARCH PROBLEM

The banking industry is undergoing a significant transformation in technology with AI, cloud computing, blockchain, big data analytics, and digital banking technologies. These new technologies are making the service more seamless, more accessible, and customer-friendly but also creating challenges such as cybersecurity, data privacy, regulatory compliance, and customer trust (Tariq et al., 2024; Wang, 2025; Valencia-Arias et al., 2025). Customer satisfaction is influenced by both the classic nature of the service and the digital service characteristics of banking. Service quality, responsiveness, and branch convenience are still relevant factors to keep in mind (Ozatac et al., 2016). It is also true that digital factors (e.g., ease of use, convenience, security, reliability, and system performance) are very important in banking satisfaction in the digital banking scenario (Wu et al., 2022; Windasari et al., 2022). Trust and security are important factors to help build customer confidence in the digital banking services as well (Tariq et al., 2024; Valencia-Arias et al., 2025). Age, income, education, gender, and place of residence are also important factors in banking behavior and satisfaction. Young people are attracted to technology-centered and interactive banking services while older customers often prefer traditional banking services (Wang, 2025; Zhao et al., 2008). Furthermore, rural customers are challenged with digital infrastructure and financial literacy, which can affect their choice of digital banking (Hussain et al., 2024). Although there has been a lot of research on digital banking adoption and customer satisfaction, the majority of studies have focused on service quality, trust, security, and technology acceptance in isolation. Little has been done to explore the relationship between such factors and demographics in terms of customer satisfaction and loyalty (Ngo & Nguyen, 2016; Ozatac et al., 2016). Hence, the research aims to look at the impact of service quality, digital experience, trust, cybersecurity, and demographic factors on banking customer satisfaction. The result will help banks to design secure, inclusive, and customer-centric services and will contribute to improving customer satisfaction and long-term loyalty in the digital age. Theoretical Background. The present study is based on the merging of several theoretical perspectives to explain customer satisfaction and preference in banking services. With the rapid transformation of banking services in the digital age, conventional concepts to explain customer behavior from only a service quality perspective are no longer enough. Therefore, we bring together the ideas from the Service Quality Theory (SERVQUAL), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Trust Theory, and Perceived Risk Theory in order to develop a more detailed understanding of banking customer satisfaction and preference. Service Quality Theory is a theory developed by Parasuraman, Zeithaml, and Berry (1988) and is based on the idea that customer satisfaction is determined by the gap between customer expectations and perceived service performance. SERVQUAL is based on the five dimensions of service quality (reliability, responsiveness, assurance, empathy, and tangibles). These dimensions influence customers' perception and decision-making about banking services and ultimately result in their satisfaction and loyalty. Some research has shown that high service quality has a positive impact on customer satisfaction and preference (Elanchezhian, Gloria , Rajesh and Kumarasamy, 2025; Kathirvel & Karpagavalli, 2014; Ngo & Nguyen, 2016). However, it is difficult to separate the impact on service quality of different demographics and banking environments, especially in rural and semi-urban areas. The Technology Acceptance Model (Davis, 1989) describes how people perceive technology as useful and easy to use, and so customers are more likely to accept digital banking services. TAM has been widely used to explain mobile banking, internet banking, and digital payment adoption. However, the model has been criticized for not being sufficient to consider trust, security concerns, and demographic aspects, which are key factors that drive customer satisfaction in the current banking ecosystem. The Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) is an extension of TAM that includes performance expectancy, effort expectancy, social impact, and facilitating conditions. UTAUT asserts that customer adoption and continuing use of banking technologies have been influenced by the technological and social conditions as well as by social factors. The theory also notes that age, gender, experience, and voluntary use are moderating factors. Such a model is particularly relevant to understanding how demographic characteristics impact customer satisfaction and preferences for digital banking services. The Trust Theory is the belief that trust is very important in customer relationships

and behavioral intentions. In banking services, it is the customers' confidence in the reliability, security, competence, and integrity of financial institutions. In digital banking, the level of trust is extremely high as transactions do not take place with personal contact. Trust is consistently identified as a significant predictor of customer satisfaction, loyalty, and commitment to usage intentions (Afzal et al., 2024; Windasari et al., 2022). Trust also provides a mechanism that reduces uncertainty and increases customer commitment to banking services. Perceived Risk Theory is how people would assess the risk of a product/service in relation to financial risk, privacy risk, security risk, performance risk, and psychological risk in banking. The growing cybercrime, fraud, and data breach problem has increased customer anxiety about digital banking. In this theory, higher levels of perceived risk lower customer confidence and satisfaction whereas security measures and transparent communication can reduce risk perception and enhance trust (Tariq et al., 2024; Valencia-Arias et al., 2025). In this study, we use an integrated theoretical framework by combining Service Quality Theory, TAM, UTAUT, Trust Theory, and Perceived Risk Theory. Service quality and system quality will be the factors that affect customer satisfaction, while trust is a psychological factor to build customer trust in banking services. Perceived risk is a barrier that negatively affects customer satisfaction and preference. Age, gender, education, income, place of residence, and other demographic variables will also affect these relationships. This integrated framework is meant to explain customer satisfaction and preference in traditional as well as digital banking environments across emerging economies and rural banking environments.

## RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research design to examine the factors influencing customer satisfaction and preference towards banking services in Thiruvarur District, Tamil Nadu. The study focuses on understanding the relationships among service quality, system quality, trust, perceived risk, facilitating conditions, customer experience, satisfaction, and preference in the context of digital and traditional banking services. A quantitative research approach was employed to collect and analyze data from bank customers using a structured questionnaire. The study was conducted in Thiruvarur District, Tamil Nadu. The target population for the study comprises customers of private sector banks operating in Thiruvarur District. The population includes customers from different age groups, educational backgrounds, occupations, income levels, and geographical locations who actively utilize banking services, including digital banking facilities.

A stratified random sampling technique was employed to ensure adequate representation of customers from different geographical and demographic categories. The population was stratified based on area classification, namely urban, semi-urban, and rural regions. Respondents within each stratum were selected using simple random sampling. This approach enhances sample representativeness, minimizes sampling bias, and allows meaningful comparison among different customer groups. The sample size was determined using the Raosoft Sample Size Calculator, which is widely accepted in social science and management research. The following parameters were considered:

- Confidence Level: 95%
- Margin of Error: 5%
- Response Distribution: 50%
- Population Size: Large/Unknown

Based on these parameters, the minimum recommended sample size was 284 respondents. The selected sample size ensures adequate statistical power, reliability, and generalizability of the findings. A larger sample size also enhances the precision of parameter estimates and supports advanced statistical techniques such as Structural Equation Modeling (SEM).

Primary data were collected directly from respondents through a structured questionnaire. The questionnaire was developed based on an extensive review of literature and established measurement scales. It consisted of 32 items covering demographic characteristics, digital banking usage, service quality, system quality, trust, perceived risk, facilitating conditions, customer experience, customer satisfaction, and customer preference. Responses were measured using a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." The reliability of the measurement scale was assessed using Cronbach's Alpha coefficient. A value greater than 0.70 was considered acceptable for internal consistency. Content validity was ensured through expert review and extensive literature support. Construct validity was further assessed through Confirmatory Factor Analysis (CFA).

The collected data were coded, edited, and analyzed using Statistical Package for Social Sciences (SPSS Version 26) and AMOS Graphics (Version 26). Measured Structural Equation Modeling was employed to examine the direct and indirect relationships among the study variables. MSEM enables simultaneous assessment of measurement and structural models, providing a comprehensive understanding of the causal relationships among latent constructs. The analysis was conducted in two stages:

- Percentage Analysis
- Descriptive Statistics
- Reliability Analysis (Cronbach's Alpha)
- Exploratory Factor Analysis (EFA)
- Confirmatory Factor Analysis (CFA)
- Correlation Analysis

- Structural Equation Modeling (SEM)
- Hypotheses of the study
- H1Service Quality has a significant positive influence on Customer Satisfaction in Digital Banking Services.
- H2System Quality has a significant positive influence on Customer Satisfaction in Digital Banking Services.
- H3Trust has a significant positive influence on Customer Satisfaction in Digital Banking Services.
- H4Perceived Risk has a significant negative influence on Customer Satisfaction in Digital Banking Services.
- H5Facilitating Conditions have a significant positive influence on Customer Satisfaction in Digital Banking Services.
- H6Customer Experience has a significant positive influence on Customer Satisfaction in Digital Banking Services.
- H7Service Quality has a significant positive influence on Customer Trust in Digital Banking Services.
- H8System Quality has a significant positive influence on Customer Trust in Digital Banking Services.
- H9Customer Satisfaction has a significant positive influence on Customer Preference toward Digital Banking Services.
- H10Trust has a significant positive influence on Customer Preference toward Digital Banking Services.

**Table 1 Results of MSEM**

| S.no | Endogenous variable | | Exogenous variable | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|---|---|
| H1 | Customer Satisfaction in Digital Banking Services | <--- | Service Quality | .092 | .039 | 2.384 | .016 |
| H2 | Customer Satisfaction in Digital Banking Services | <--- | System Quality | .413 | .137 | 2.945 | .002 |
| H3 | Customer Satisfaction in Digital Banking Services | <--- | Trust | -.031 | .045 | -.682 | .475 |
| H4 | Customer Satisfaction in Digital Banking Services | <--- | Perceived Risk | .048 | .036 | 1.289 | .192 |
| H5 | Customer Satisfaction in Digital Banking Services | <--- | Facilitating Conditions | .173 | .042 | 4.105 | *** |
| H6 | Customer Satisfaction in Digital Banking Services | <--- | Customer Experience | .044 | .038 | 1.166 | .254 |
| H7 | Customer Trust in Digital Banking Services. | <--- | Service Quality | .0220 | .042 | 2.481 | .021 |
| H8 | Customer Trust in Digital Banking Services. | <--- | System Quality | .011 | .038 | .279 | .770 |
| H9 | Preference toward Digital Banking Services. | <--- | Trust | .221 | .037 | 5.914 | *** |
| H10 | Preference toward Digital Banking Services. | | Customer Satisfaction | .005 | .040 | .128 | .891 |

Source: primary data

**Findings of the Study**

In the Structural Equation Modeling (SEM) analysis, we studied the factors in customer satisfaction, trust and preference of customers to digital banking services. The findings show that there are factors influencing customer behaviour and some are significant while others are not. It is shown that Service Quality has a significant positive influence on Customer Satisfaction in Digital Banking Services ($\beta = 0.092$, $p = 0.016$). This means the customer is more satisfied when digital banking services provide reliable, responsive and efficient service. Thus H1 is supported. Similarly, System Quality has a good effect on Customer Satisfaction ($\beta = 0.413$, $p = 0.002$). Of all the factors that affect customer satisfaction, system quality has a relatively bigger impact. This means that a user-friendly, secure and technologically capable banking system leads to better customer satisfaction. So H2 is accepted. However, trust is not a significant factor that affects Customer Satisfaction ($\beta = -0.031$, $p = 0.475$). The negative coefficient and small p-value show that trust cannot be the parameter to determine customer satisfaction, at least in digital banking. Hence, H3 is rejected. In addition, the results show that perceived risk does not have a significant impact on customer satisfaction ($\beta = 0.048$, $p = 0.192$). While risk perceptions are commonly considered important in digital banking, the fact that customers are more used to digital banking and are less affected by perception of risk is likely to be an issue. We therefore ignore H4. The study also finds that Facilitating Conditions have a significant positive impact on Customer Satisfaction ($\beta = 0.173$, $p < 0.001$). This indicates that having resources, technical

support and infrastructure helps customers use digital banking services more effectively and therefore customer satisfaction is higher. Thus we take H5 into account. Customer Experience does not have a significant effect on Customer Satisfaction ($\beta = 0.044$, $p = 0.254$). While good experiences can contribute to overall perceived satisfaction with digital banking, it does not come into play in this study. So we reject H6. The results reveal that Service Quality has a strong positive impact on Customer Trust in Digital Banking Services ($\beta = 0.220$, $p = 0.021$). This indicates that high-quality service strengthens customer confidence and trust in digital banking services. As such, we are satisfied with H7. System Quality does not influence Customer Trust significantly ($\beta = 0.011$, $p = 0.770$), which indicates that technology efficiency alone cannot be the only way to build customer trust. As a result, H8 is rejected. The study shows that Trust has a strong and positive impact on Preference towards Digital Banking Services ($\beta = 0.221$, $p < 0.001$). We believe that customers who trust digital banking services are more likely to use and continue to use them. This is an indication of the crucial role that trust should play in making customer choice. So H9 is accepted. Customer Satisfaction does not affect preference for Digital Banking Service ($\beta = 0.005$, $p = 0.891$) and satisfaction alone is not sufficient to determine customer preference, and trust is also important. Hence, H10 is rejected. The ten hypotheses were tested and five hypotheses (H1, H2, H5, H7, and H9) were confirmed and five hypotheses (H3, H4, H6, H8, and H10) were not supported. Service Quality, System Quality and Facilitating Conditions are the main determinants of Customer Satisfaction while Service Quality enhances Customer Trust. In addition, trust is the most important factor in the decision to adopt Digital Banking services and banks should serve to enhance the trust of customers in their digital banking services so that trust can be secured and reliable.

## CONCLUSION

The present study examined the factors influencing customer satisfaction, customer trust, and preference toward digital banking services using Structural Equation Modeling (SEM). The findings provide valuable insights into the key determinants that shape customers' perceptions and preferences in the digital banking environment.The study reveals that Service Quality, System Quality, and Facilitating Conditions significantly enhance Customer Satisfaction in digital banking services. Among these factors, System Quality emerged as the strongest predictor of customer satisfaction, indicating that customers highly value secure, reliable, and efficient digital banking platforms. The results suggest that banks should continuously improve the technical performance, accessibility, and functionality of their digital services to increase customer satisfaction.The findings further indicate that Service Quality significantly influences Customer Trust, highlighting the importance of providing responsive, dependable, and customer-oriented services. However, System Quality did not significantly affect trust, suggesting that technological excellence alone is insufficient to build customer confidence. Instead, customers appear to place greater emphasis on the quality of interactions and services provided by the bank.A major finding of the study is that Trust has a significant positive impact on Preference toward Digital Banking Services. This demonstrates that customers are more likely to prefer and continue using digital banking when they trust the security, reliability, and credibility of the service provider. In contrast, Customer Satisfaction did not significantly influence customer preference, indicating that trust plays a more critical role than satisfaction in determining long-term preference and usage intentions.

The study also found that Trust, Perceived Risk, and Customer Experience did not significantly influence Customer Satisfaction. These findings suggest that customers may have become more familiar with digital banking technologies and are primarily concerned with service efficiency and system performance rather than risk perceptions or experiential factors.Overall, the study concludes that improving service quality, strengthening system quality, providing adequate facilitating conditions, and building customer trust are essential for enhancing the adoption and preference of digital banking services. Banks should focus on developing secure, user-friendly, and customer-centric digital platforms while fostering trust through transparency, reliability, and effective customer support. Such efforts will contribute to greater customer engagement, loyalty, and sustained growth in the digital banking sector.

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