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IMPACT OF ARTIFICIAL INTELLIGENCE ON SERVICE QUALITY IN PRIVATE SECTOR BANKS: AN EMPIRICAL STUDY IN ERODE DISTRICT OF TAMIL NADU

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Abstract

The rapid integration of Artificial Intelligence in the banking sector has transformed the way service quality is delivered and perceived by customers. This study examines the impact of AI-driven services on service quality dimensions in private sector banks in Erode District, Tamil Nadu. Using primary data from 100 customers and secondary sources, the study evaluates customer perception, satisfaction, and challenges related to AI adoption. The findings reveal that AI significantly enhances responsiveness, personalization, and efficiency, while concerns regarding trust and human interaction persist. The study concludes with suggestions for banks to balance technological advancement with customer-centric service delivery.

Keywords: Artificial Intelligence, Service Quality, Private Sector Banks, Erode District, Customer Satisfaction, Fintech

INTRODUCTION

In the contemporary era of digital transformation, Artificial Intelligence has emerged as a disruptive force that is redefining the operational and service paradigms of the commerce sector, particularly within the banking industry. Private sector banks in India have been at the forefront of adopting AI technologies such as chatbots, predictive analytics, robotic process automation, fraud detection systems, and personalized recommendation engines to enhance customer experience and operational efficiency. The concept of service quality, which traditionally relied on human interaction, promptness, and empathy, is now being augmented and in many cases replaced by algorithm-driven interfaces that promise 24/7 availability, reduced errors, and customized solutions. Erode District, being one of the prominent commercial and textile hubs in Tamil Nadu, has witnessed substantial growth in private banking operations, and its customer base is increasingly exposed to AI-enabled banking services. However, the extent to which these technological interventions translate into improved service quality perceptions among customers remains an area that requires empirical investigation. Therefore, this study seeks to explore how AI influences service quality in private sector banks from the perspective of customers in Erode District.

IMPORTANCE OF THE STUDY

The banking sector is undergoing a technological revolution, and understanding customer perception of AI is crucial for strategic decision making.Service quality is a key differentiator in the highly competitive private banking sector, and AI is becoming a core component of that differentiation. There is limited district-level research on AI and service quality in Tamil Nadu, making this study relevant for regional policy and practice.The findings will help bank managers in Erode District to identify gaps in AI implementation and improve customer satisfaction.

OBJECTIVES OF THE STUDY

1. To examine the level of awareness and usage of AI-based services among customers of private sector banks in Erode District.
2. To evaluate the impact of AI on various dimensions of service quality such as tangibility, reliability, responsiveness, assurance, and empathy.
3. To identify the challenges and concerns faced by customers while using AI-driven banking services.
4. To offer suitable suggestions to improve AI-enabled service quality in private sector banks.

SCOPE OF THE STUDY

The study is confined to customers of private sector banks operating in Erode District. It focuses specifically on AI applications such as mobile banking apps, chatbots, UPI, ATM kiosks, and AI-based customer support. The scope includes both urban and semi-urban bank branches in Erode. The study is based on primary data collected from 100 respondents during August 2026.

REVIEW OF LITERATURE

Several studies have explored the intersection of AI and service quality in banking.

Lee and Shin (2020) found that AI chatbots significantly improve responsiveness and reduce waiting time, thereby increasing customer satisfaction in retail banking.

Kumar and Sharma (2021) stated that AI-driven personalization enhances the reliability and assurance dimensions of service quality, but may reduce the empathy perceived by customers.

Patel et al. (2022) observed that customers in urban India have high awareness of AI services, yet trust and data privacy remain major concerns.

Rao and Iyer (2023) concluded that private banks using predictive analytics for credit and fraud detection experience higher operational efficiency and customer retention.

Singh and Mehta (2024) reported that while AI improves tangibility through sleek app interfaces, older customers still prefer human interaction for complex queries.

Gupta (2025) emphasized that the successful adoption of AI in banks depends on staff training and seamless integration with existing systems.

Joseph and Das (2025) in a Tamil Nadu context found that AI adoption in private banks positively correlates with customer loyalty in Tier-2 cities.

ANALYSIS AND INTERPRETATION

Primary data was collected from 100 customers of HDFC, ICICI, Axis, and KVB banks in Erode District using a structured questionnaire.

Table 1

Demographic Profile of Respondents

Demographic Variable	Category	No. of Respondents	Percentage
Age	Below 30 Years	42	42%
	30-50 Years	38	38%
	Above 50 Years	20	20%
Gender	Male	58	58%
	Female	42	42%
Occupation	Salaried	45	45%
	Business	31	31%
	Others	24	24%

Interpretation:

The above table shows that most of the respondents(42%)are under 30 years of age, Most of the respondents (58%) are Male. Most of the respondents (45%) are salaried

Table 2

Awareness and Usage of AI Services

AI SERVICE	AWARE	USING REGULARLY
Mobile Banking App with AI	94	87
Chatbot Customer Support	76	52
AI Fraud Alerts	68	61
Personalized Product Suggestions	55	43

Interpretation:

The above table shows that 87% of respondents regularly use AI-enabled mobile apps. However, usage of chatbots and personalized suggestions is comparatively lower, indicating scope for improvement.

Table 3

Impact of AI on Service Quality Dimensions

Dimensions	Mean Score	Interpretation
Tangibility	4.21	High
Reliability	4.05	High
Responsiveness	4.33	Very High
Empathy	2.45	Low

Interpretation:

Responsiveness and tangibility scored highest, showing AI improves speed and digital interface. Empathy scored lowest, suggesting customers miss human touch.

FINDINGS

1. Majority of respondents are below 50 years and are tech-savvy users of AI banking services.
2. AI has significantly improved responsiveness, reliability, and tangibility in private banks.
3. 68% of customers are aware of AI fraud detection, but only 52% use chatbots regularly due to lack of human-like responses.
4. Major concerns include data privacy, technical glitches, and lack of empathy in AI interactions.
5. Customers prefer a hybrid model where AI handles routine queries and humans handle complex issues.

SUGGESTIONS

1. Banks should invest in training AI chatbots with regional language support, especially Tamil, to improve usability in Erode.
2. Enhance transparency regarding data privacy and security to build trust in AI systems.
3. Maintain a balance by integrating human agents with AI for grievance redressal and advisory services.
4. Conduct regular customer awareness programs to educate about AI features and benefits.
5. Use AI analytics to offer hyper-personalized financial products based on customer spending patterns.

CONCLUSION

Artificial Intelligence is no longer a futuristic concept but a present-day necessity in the commerce and banking sector. The study on private sector banks in Erode District reveals that AI has positively influenced service quality, particularly in terms of speed, accessibility, and efficiency. However, to achieve sustainable customer satisfaction, banks must address concerns related to trust, empathy, and digital literacy. A customer-centric approach that blends AI efficiency with human warmth will be the key to competitive advantage in the evolving banking landscape.

REFERENCES

1. Gupta, R. (2025). AI Integration and Organizational Readiness in Indian Banks, Journal of Banking Technology,Vol12(1), pp45-50.
2. Joseph, M., & Das, P. (2025). Customer loyalty and AI adoption in Tier-2 cities of Tamil Nadu, Indian Journal of Commerce, ,Vol78(2), pp112-128.

3. Kumar, V., & Sharma, A. (2021). Artificial intelligence and service quality dimensions in banking. International Journal of Bank Marketing, ,Vol39(4), pp678-695.
4. Lee, S., & Shin, H. (2020). The effect of chatbot service quality on customer satisfaction. Computers in Human Behavior, ,Vol109, p-106
5. Patel, N., Singh, R., & Verma, K. (2022). Customer trust and AI in Indian retail banking. Asian Journal of Business Research, ,Vol15(3), pp201-217.
6. Rao, S., & Iyer, L. (2023). Predictive analytics and fraud detection in private banks., Journal of Financial Services Marketing, Vol 28(1), pp33-49.
7. Singh, D., & Mehta, P. (2024). Generational differences in AI banking adoption, Technology in Society, Vol66, p101