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Impact of AI-Driven Financial Services on Customer Trust and Retention: An Empirical Study of the Banking Sector in Chikkaballapura District

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Abstract:

In this study, it is analysed how financial services provided by the use of Artificial Intelligence (AI) impacts on the satisfaction and retention of customers in the bank in Chikkaballapura District. It is all about customer perceptions, trust, satisfaction and retention with AI banking services. The data were collected from 150 customers of bank under primary data were collected by using a structured questionnaire and analysis is done by using ANOVA. Overall, the customers' perception of the AI services was positive, and no significant difference ($p > 0.05$) was found between the opinion of the respondents. AI banking services are seen as trustworthy, secure, convenient, and beneficial to banking experiences by customers. Finally, the study finds that AI has a key part to play in improving customer trust, satisfaction and retention. It implies enhanced cybersecurity, customer awareness and transparency, and innovations focused on the customer in the banking industry when it comes to AI.

Keywords: Artificial Intelligence, AI Financial Services, Digital Banking, Customer Trust, Customer Satisfaction, Customer Retention.

1. Introduction

The banking sector has seen significant influence from Artificial Intelligence (AI) through various applications such as predictive customer service, fraud detection, digital payments, and personalized financial services, which have improved its efficiency, customer service, and security. With AI features, customers can easily and swiftly use banking services on digital platforms. The advantages of AI in financial services are numerous, however, there are also concerns regarding privacy, security, and the reliability of the systems, so customer trust is crucial for the effective implementation of these systems. At the same time, banks are keen to build a long-term customer relationship and gain a competitive advantage. The advent of digital transformation, government initiatives, and an ever-expanding internet have paved the way for the integration of AI in Indian banking.AI's integration into the banking sector is driven primarily by the digital revolution, government initiatives and the prevalence of internet usage in the country. However, the acceptance of AI service is dependent on the awareness of the customers, the customers' digital literacy and geographical location, especially in semi-urban districts like Chikkaballapura. The study gives an analysis of the impact of Financial services using AI on trust and retention of the banking customers in Chikkaballapura district.

2. Background and Legal Framework

The theoretical aspects on which this study is based are Artificial Intelligence (AI), customer trust and customer retention in banking field. AI in financial services aims to streamline and improve the banking experience and efficiency through applications like chatbots, fraud detection systems, digital payment solutions, and personalized financial advice. The study is based on the Technology Acceptance Model (TAM) which defines the customer acceptance of technology based on the perceptions of usefulness and ease of use. Trust Theory highlights that customers will be more inclined to use AI-powered services if they feel they are secure, dependable, and transparent. According to Relationship Marketing Theory, customer satisfaction and customer trust are important factors in retaining customers.

3. Literature Reviews

Recent research has highlighted how Artificial Intelligence (AI) is contributing to optimizing banking and customer service operations, which facilitates better efficiency in financial processes. Kalyani and Gupta (2023) have identified the benefits of AI-powered solutions, such as chatbots, fraud detection, and predictive analytics, which enhance customer satisfaction and operational efficiency.

The authors Jafri et al. (2023) pointed out that security, privacy and reliability are important factors that affect customer trust and adoption of AI-powered banking services. James, Joseph, and Sharma (2024) claim that the application of AI in e-loyalty can improve customer engagement and retention. Mehrolia et al. (2023) in a study identified the positive impact of the three dimensions of service quality, responsiveness, and perceived usefulness of AI chatbots on customer satisfaction.

AI is evolving into a strategic asset for improving customer relationships, according to Fares et al. (2023). Singh and Verma (2024), Kumar and Sharma (2023), and Patel and Desai (2024) all agree that the convenience, transparency, and secure digital services are advantageous factors in cultivating customer trust and loyalty.

4. Research Methodology

In this study, descriptive and analytical research designs are used to explore the effect of AI-based financial services on customers' trust and retention in the banking industry of Chikkaballapura District. Both Primary and Secondary sources were used. The main data was gathered through a structured questionnaire, with 150 banking customers. Secondary data were collected from Research Journals, Books, Banking Reports and Published Literatures. Convenience sampling was used and percentage analysis and ANOVA were used to analyse the results.

5. Objectives of the Study

1. To study the level of awareness of AI-driven financial services among banking customers.
2. To analyze the impact of AI-enabled banking services on customer trust.
3. To examine the relationship between AI-driven banking services and customer retention.
4. To identify customer perceptions regarding security, reliability, and convenience.
5. To provide suggestions for improving customer trust and retention through AI.

6. Hypothesis of the Study

H0 (Null): There is no significant impact of AI-driven financial services on customer trust and retention in the banking sector.

H1 (Alternative): There is a significant impact of AI-driven financial services on customer trust and retention in the banking sector.

7. Results and Analysis

Table-01: AI-Driven Financial Services Usage

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6.938667	4	1.734667	1.222336	0.299844	2.383885
Within Groups	1057.26	745	1.419141			
Total	1064.198667	749				

The calculated F value (1.222336) is lower than the F critical value (2.383885), and the p-value (0.299844) is greater than 0.05. Therefore, the null hypothesis is accepted, meaning that the respondents' opinions on the variables analysed did not differ statistically significantly.

Table-02: Customer Trust Towards AI-Driven Banking

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5.341333	4	1.335333	1.030364	0.390586	2.383885
Within Groups	965.5067	745	1.295982			
Total	970.848	749				

The F value (1.030364) is lower than F critical (2.383885), and p-value (0.390586) > 0.05. There was no evidence to reject the null hypothesis, that there are no differences in the perceptions of respondents with respect to banking with AI in terms of trust, privacy, security and reliability.

Table-03: Customer Satisfaction

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6.154667	4	1.538667	1.061048	0.374776	2.383885
Within Groups	1080.353	745	1.450139			
Total	1086.508	749				

F value (1.061048) < F critical (2.383885), p-value (0.374776) > 0.05. Null hypothesis accepted. Consumers are largely positive about the quality of service, convenience and efficiency of AI banking.

Table-04: Customer Retention Intention

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.752	4	0.688	0.554347	0.695907	2.383885
Within Groups	924.62	745	1.241101			
Total	927.372	749				

F value (0.554347) < F critical (2.383885), p-value (0.695907) > 0.05. Null hypothesis accepted. Similar sentiment is shared by customers with regard to their loyalty, future use, and preference for banking with an AI.

8. Findings

The results show that there is a positive and consistent perception of banking services involving AI among the respondents. The results of ANOVA showed that there were no significant differences in all dimensions with p-values above 0.05 and the null hypothesis was accepted. Consistent use and uptake of AI-powered financial services by customers. Respondents were confident in the AI systems, and perceived them as secure, reliable and effective. Convenience, quality and efficiency of AI-driven services have been commented on favorably by customers. AI in banking had a positive impact on customer loyalty, recommendations and intentions to stay.

9. Suggestions

To build customer trust, banks need to beef up data privacy and cyber security procedures. Increase transparency in the use of AI for decision-making. Awareness programs are necessary to educate customers about the advantages and secure utilization of AI-powered banking by financial institutions. Banks need to prioritize personalized services, enhance AI-driven customer support, and track customer feedback. Promote ethical and responsible use of AI to ensure fairness and accountability.

10. Conclusion

The study concludes that the banking sector in Chikkaballapura District is positively influenced by the use of AI in banking services in terms of customers' satisfaction, service usage, and retention. ANOVA results revealed a p value greater than 0.05 in all dimensions, suggesting that there is a uniformity in opinion and the null hypothesis was accepted. AI in banking is seen by customers as safe, dependable, convenient and efficient. The study underscores the increasing adoption of AI in the banking sector and advises banks to prioritize security, transparency, ethical AI use, and innovation that addresses customer needs for long-term success.

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