International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com
ISSN:3048-7722
Volume 4, Issue 5, Sep-Oct-2026, PP: 01-5

The Role of Artificial Intelligence and Chatbots in Enhancing Customer Experience in Digital Banking with Special Reference to Coimbatore City

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Abstract – The rapid growth of digital banking has transformed the way customers interact with banking services. In recent years, Artificial Intelligence (AI) and chatbot technologies have been widely adopted by banks to improve customer service efficiency and enhance customer experience. Chatbots provide instant responses, personalized assistance, and round-the-clock support, thereby reducing the need for physical bank visits. The present study aims to examine the role of Artificial Intelligence and chatbots in enhancing customer experience in digital banking with special reference to Coimbatore City. The study is based on primary data collected from 105 digital banking customers using a structured questionnaire. Simple statistical tools such as percentage analysis, tables, charts, and chi-square test were used for data analysis. The findings of the study reveal that most customers are aware of AI and chatbot services and are satisfied with their usage. The study concludes that AI and chatbots play a significant role in improving convenience, service efficiency, and overall customer experience in digital banking.

Keywords - Artificial Intelligence, Chatbots, Digital Banking, Customer Experience, Coimbatore

I. INTRODUCTION

In recent years, the banking sector has undergone significant transformation due to rapid technological advancements. Digital banking has become an essential part of modern financial services, allowing customers to access banking facilities anytime and anywhere. The increasing use of smartphones and internet services has further accelerated the adoption of digital banking platforms. To meet rising customer expectations related to speed, accuracy, and convenience, banks are increasingly adopting Artificial Intelligence and chatbot technologies.
Artificial Intelligence enables banks to analyse customer behaviour, provide personalized services, and improve operational efficiency. Chatbots, as an application of AI, assist customers by providing instant responses to queries, supporting transactions, and offering customer assistance without human intervention. In a fast-growing city like Coimbatore, the use of digital banking services is increasing across various customer segments. Hence, it is important to study how AI and chatbot services influence customer experience in digital banking.

Objectives of the Study

- To examine the awareness level of customers about AI and chatbot services in digital banking.
- To study the usage pattern of AI and chatbots among digital banking customers.
- To analyse the impact of AI and chatbots on customer satisfaction and service efficiency.
- To identify the problems faced by customers while using AI-based banking services.
- To evaluate the role of AI and chatbots in improving overall customer experience.

Statement of the Problem

The increasing dependence on digital banking has raised customer expectations regarding service quality, speed, and personalization. Traditional customer support systems often fail to handle large volumes of queries efficiently, leading to dissatisfaction. Although AI and chatbot technologies are introduced to overcome these issues, customers still face challenges such as lack of trust, limited understanding of chatbot responses, technical errors, and concerns related to data privacy. Therefore, it becomes necessary to examine whether AI and chatbots effectively enhance customer experience in digital banking, particularly among customers in Coimbatore City.

II. REVIEW OF LITERATURE

Singh and Srivastava (2020) studied the adoption and application of Artificial Intelligence (AI) in the Indian banking sector, with particular emphasis on the role of AI-based technologies in improving banking services and

customer experience. The study highlighted the increasing importance of AI applications, such as chatbots, automated customer support systems, and intelligent virtual assistants, in transforming traditional banking operations. The researchers observed that AI-powered chatbots help banks respond to customer queries quickly, provide continuous service availability, and reduce the workload of customer service representatives. These applications enable customers to obtain information regarding account balances, transaction details, banking procedures, and other routine services without visiting bank branches. The study further indicated that the effective implementation of AI technologies could improve operational efficiency, service accessibility, and customer satisfaction. However, the benefits depend on the reliability of the technology, the accuracy of responses, and customers' willingness to adopt digital banking services. The study provides a foundation for understanding how AI-based banking applications can improve service delivery and strengthen customer relationships.

Kumar and Malhotra (2019) examined customer perceptions of chatbot services in online banking, focusing on the factors that influence customer acceptance and usage of automated customer support systems. The study emphasized the importance of convenience, response speed, accessibility, and ease of use in shaping customers' experiences with chatbot services. The researchers observed that customers generally prefer chatbots for routine banking enquiries because they can receive immediate responses without waiting for a customer service executive. Chatbots also allow customers to access banking information outside conventional banking hours, thereby improving the flexibility of online banking services. Furthermore, automated systems can handle multiple customer enquiries simultaneously, helping banks manage service requests more efficiently. The study suggested that perceived usefulness and ease of interaction are important factors influencing customers' willingness to use chatbots. Nevertheless, customers may experience dissatisfaction when chatbots fail to understand complex questions or provide irrelevant responses. Therefore, banks need to develop user-friendly chatbot interfaces and improve response accuracy to encourage customer acceptance and continued usage of AI-enabled banking services.

Patel (2021) investigated the contribution of AI-driven banking services to customer satisfaction, particularly through personalized service delivery and improved convenience. The study emphasized that Artificial Intelligence enables banks to analyse customer interactions and preferences to provide more relevant information and customized assistance. AI-powered chatbots can guide customers through banking procedures, clarify frequently asked questions, explain available services, and assist with basic financial transactions. Such capabilities can reduce the time and effort required to obtain banking information. The study also highlighted that personalized digital interactions can improve customers' perceptions of service quality and strengthen their overall banking experience. In addition, the availability of automated assistance enables customers to access support at their convenience, which is particularly beneficial for individuals who prefer digital banking channels. However, the effectiveness of personalization depends on the quality of customer data, the accuracy of AI algorithms, and the protection of confidential information. The study suggests that banks should focus on developing reliable, responsive, and customer-oriented AI systems to enhance satisfaction and build long-term customer relationships.

Gupta and Arora (2021) explored the factors influencing customer acceptance of AI-based chatbot services, with particular emphasis on trust, privacy, and data security. The study highlighted that customers' willingness to interact with chatbots depends not only on the convenience of the technology but also on their confidence in the bank's ability to protect personal and financial information. Banking transactions involve sensitive data, including account details, transaction histories, and personal identification information. Consequently, customers may hesitate to use AI-based services when they are uncertain about how their information is collected, stored, processed, or protected. The researchers emphasized that perceived security, transparency, and reliability are important considerations in the adoption of digital banking technologies. Customers are more likely to accept chatbot services when they believe that the bank follows appropriate security practices and provides accurate information. The study also suggests that banks should communicate their privacy policies clearly, implement effective cybersecurity measures, and provide access to human representatives when necessary. These measures can help reduce customer concerns and improve confidence in AI-enabled banking services.

III. STATEMENT OF THE PROBLEM

The increasing dependence on digital banking has raised customer expectations regarding service quality, speed, and personalization. Traditional customer support systems often fail to handle large volumes of queries efficiently, leading to dissatisfaction. Although AI and chatbot technologies are introduced to overcome these issues, customers still face challenges such as lack of trust, limited understanding of chatbot responses, technical errors, and concerns related to data privacy. Therefore, it becomes necessary to examine whether AI and chatbots effectively enhance customer experience in digital

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IV. ANALYSIS AND INTERPRETATION

Table 1: Gender-wise Distribution of Respondents

Gender	No. of Respondents	Percentage
Male	58	55.2
Female	47	44.8
Total	105	100
Age Group	Respondents	Percentage
Below 25	32	30.5
25-35	41	39.0
36-45	20	19.0
Above 45	12	11.5
Total	105	100

Interpretation

The demographic analysis of the 105 respondents reveals a moderately balanced and youth-dominated sample composition. In terms of gender distribution, male respondents constitute 55.2% (n = 58), while female respondents account for 44.8% (n = 47). Although males represent a slightly higher proportion, the difference is not substantial, indicating reasonable gender representation within the study. This balance enhances the credibility of the findings by reducing potential gender-based response bias and supporting broader applicability of results across both male and female participants.

With respect to age distribution, the largest proportion of respondents falls within the 25–35 years age group (39.0%), followed by those below 25 years (30.5%). Collectively, respondents below 35 years account for 69.5% of the total sample, highlighting a strong concentration of young and early-middle-aged individuals. The 36–45 years group represents 19.0%, while respondents above 45 years constitute only 11.5%, indicating comparatively lower participation from older age cohorts.

Table 2: Awareness of AI & Chatbot Services in Digital Banking

Awareness Level	Respondents	Percentage
Highly Aware	36	34.3
Aware	44	41.9
Neutral	15	14.3
Not Aware	10	9.5
Total	105	100

Interpretation

The analysis of awareness levels among the 105 respondents indicates a generally high degree of awareness within the study population. A majority of participants reported being either “Aware” (41.9%) or “Highly Aware” (34.3%), collectively accounting for 76.2% of the total sample. This substantial proportion suggests that the subject under investigation has achieved considerable penetration and recognition among the target population.

Meanwhile, 14.3% of respondents expressed a neutral stance, indicating moderate familiarity without strong affirmation of awareness. Only 9.5% of participants reported being “Not Aware,” representing a relatively small segment of the sample. The limited proportion of low-awareness respondents implies that information dissemination, exposure, or engagement mechanisms related to the study topic have been reasonably effective.

From an analytical perspective, the predominance of positive awareness levels enhances the reliability of subsequent perception- or behaviour-based findings, as responses are likely grounded in informed understanding rather than unfamiliarity. However, the presence of neutral and unaware segments suggests potential scope for targeted awareness-building initiatives to achieve more comprehensive coverage.

Table 3: Frequency of Using AI Chatbots for Banking

Usage Frequency	Respondents	Percentage
Very often	28	26.7
Often	40	38.1
Sometimes	25	23.8
Rarely	12	11.4
Total	105	100

Interpretation

The distribution of usage frequency among the 105 respondents demonstrates a relatively high level of engagement with the subject under study. A substantial proportion of participants reported frequent usage, with 38.1% indicating “Often” and 26.7% indicating “Very often.” Collectively, these categories account for 64.8% of the total sample, signifying that nearly two-thirds of respondents are active and regular users.

Additionally, 23.8% of respondents reported using the subject “Sometimes,” reflecting moderate or situational engagement. Only 11.4% indicated “Rarely,” representing a comparatively small segment of low-frequency users. The limited proportion of infrequent users suggests that the phenomenon under investigation has achieved considerable practical relevance and integration into respondents’ routines or decision-making processes.

From an analytical standpoint, the dominance of frequent users strengthens the empirical validity of subsequent behavioural and attitudinal findings, as responses are likely based on direct and repeated experience rather than sporadic exposure. However, the presence of occasional

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and rare users indicates varying intensity levels of engagement, which may warrant further investigation through segmentation analysis.

Table 4: Satisfaction Level towards AI & Chatbot Services

Satisfaction Level	Respondents	Percentage
Highly Satisfied	30	28.6
Satisfied	46	43.8
Neutral	17	16.2
Dissatisfied	12	11.4
Total	105	100

Interpretation

The distribution of satisfaction levels among the 105 respondents indicates a predominantly positive evaluation of the subject under investigation. A significant majority of participants reported being either "Satisfied" (43.8%) or "Highly Satisfied" (28.6%), collectively accounting for 72.4% of the total sample. This substantial proportion reflects a strong overall approval and favorable experiential outcome among respondents.

In contrast, 16.2% of participants expressed a neutral stance, suggesting moderate contentment without strong affirmation. Meanwhile, 11.4% reported dissatisfaction, representing a relatively small but noteworthy segment whose concerns may warrant further qualitative exploration.

From an analytical perspective, the dominance of positive satisfaction levels suggests that the service, product, or system under study is effectively meeting user expectations. The comparatively low dissatisfaction rate further reinforces the robustness of performance or delivery mechanisms. However, the presence of neutral and dissatisfied respondents indicates opportunities for targeted improvement strategies aimed at enhancing user experience and addressing unmet expectations.

Chi-Square Test

Relationship between AI Chatbot Usage and Customer Satisfaction

- **Null Hypothesis (H_0):** There is no significant relationship between AI chatbot usage and customer satisfaction.
- **Alternative Hypothesis (H_1):** There is a significant relationship between AI chatbot usage and customer satisfaction.

Table 5: Relationship between AI Chatbot Usage and Customer Satisfaction

AI Chatbot Usage	Low Satisfaction	Moderate Satisfaction	High Satisfaction	Total
Low Usage	12	8	5	25
Moderate usage	6	14	10	30
High Usage	3	8	14	25
Total	21	30	29	80

Calculated χ^2 value	Table value	Result
12.64	9.49	Significant

The chi-square test was conducted to determine the relationship between AI chatbot usage and customer satisfaction. The calculated chi-square value is 12.54, which is greater than the table value of 9.49 at the 5% level of significance, with 4 degrees of freedom. The p-value is approximately 0.014, which is less than 0.05. Therefore, the null hypothesis is rejected, indicating a statistically significant association between AI chatbot usage and customer satisfaction.

The results show that customers with high AI chatbot usage tend to report higher satisfaction than customers with low usage. Specifically, 14 out of 25 high-usage respondents reported high satisfaction, compared with 5 out of 25 low-usage respondents. The findings suggest that greater AI chatbot usage is associated with higher customer satisfaction in the sample. However, this association does not establish that chatbot usage directly causes increased satisfaction.

V. CONCLUSION

In conclusion, the present study has made a comprehensive attempt to analyze the role of Artificial Intelligence and chatbot services in enhancing customer experience in digital banking with special reference to Coimbatore city. The rapid growth of digital banking and the increasing adoption of AI-driven technologies have significantly transformed the way banking services are delivered and experienced by customers. The findings of the study clearly indicate that a majority of respondents are aware of AI and chatbot services and actively use them for various banking purposes such as balance inquiries, transaction support, and customer assistance. This reflects the growing acceptance of technology-based banking solutions among customers.

The study further reveals that AI and chatbot services have a positive impact on customer satisfaction by providing quick responses, round-the-clock availability, and improved convenience. Customers perceive chatbots as an efficient tool that reduces waiting time and enhances

overall service efficiency. However, the study also highlights certain challenges faced by users, such as inaccurate responses, lack of human touch, and concerns related to data privacy and security. These issues indicate that while AI and chatbots add significant value to digital banking, there is still scope for improvement to make these systems more reliable and customer-friendly.

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