

The Use of AI Chatbots in Enhancing Customer Service and Satisfaction

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Peer Review Information	Abstract
<p>Type: Article Received: 22 March 2026 Revised: 18 April 2026 Accepted: 06 May 2026 Published: 29 May 2026</p>	<p>Abstract</p> <p>AI chatbots have recently become an important part of modern customer service because they can offer quick, personalized and round-the-clock support with the help of artificial intelligence. Using technologies such as natural language processing and machine learning, these systems are able to understand customer queries and provide appropriate responses, which helps organizations save time, effort and cost.</p> <p>Businesses from different sectors, including e-commerce, banking, healthcare and telecommunications, now use chatbots to provide fast replies, maintain consistent service quality and tailor interactions based on data collected from users during previous conversations.</p> <p>At the same time, chatbots still have limitations, especially when they face complex or emotionally sensitive issues that require human judgment and empathy. Because of this, many companies combine chatbots with human agents to maintain a high level of service.</p> <p>Overall, AI chatbots have become a key element in current customer service innovations by improving efficiency and contributing to a better customer experience. With further development in artificial intelligence, these tools are expected to become even more accurate, user-friendly and effective in the future.</p>
	<p>Keywords: Artificial Intelligence; AI Chatbots; Customer Service; Customer Satisfaction; Natural Language Processing; Machine Learning; Customer Experience; Automated Support.</p>

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Introduction

In today's digital environment, customers expect support that is fast, convenient and personalized across different channels such as websites, mobile apps and social media. To keep up with these expectations, many organizations are turning to Artificial Intelligence (AI), and especially AI-powered chatbots, as an important part of their customer service strategy. AI chatbots are software applications that simulate human conversation using techniques like natural language processing (NLP) and machine learning, allowing them to understand customer messages and respond in real time.

The use of AI chatbots has changed how firms interact with their customers. Compared to traditional call centers or email support, chatbots can provide 24/7 availability, instant replies and consistent service quality. They can manage a large number of queries at the same time, which reduces waiting time for customers and improves the efficiency of service operations. This helps organizations not only improve the customer experience but also reduce the cost of hiring and training large support teams.

AI chatbots also support higher customer satisfaction by offering more personalized interactions. Based on user history, preferences and previous conversations, chatbots can recommend products, answer frequently asked questions and resolve basic issues quickly. Industries such as e-commerce, banking, healthcare and telecom use them for order tracking, account information, basic troubleshooting and other routine tasks.

However, chatbots are not perfect. They may face difficulties with complex, unclear or emotionally sensitive queries and usually lack human-like emotional intelligence. For this reason, many organizations use a hybrid model in which chatbots handle simple, repetitive tasks and human agents manage more complicated or critical cases. This combination aims to balance efficiency with the quality and empathy expected by customers.

In this context, this research paper studies how AI chatbots influence customer service and customer satisfaction, and examines both their benefits and their limitations from the customer's point of view.

Objectives

The main objectives of this study are:

- To examine how AI chatbots help improve response time for customer queries.
- To understand the impact of AI chatbots on overall customer satisfaction.
- To explore the role of AI chatbots in providing more personalized services.
- To analyze how the use of AI chatbots can reduce operational costs for organizations.

Literature Review

Researchers and practitioners have shown growing interest in the use of AI chatbots in customer service. Many studies point out that chatbots, which are driven by natural language processing and machine learning, are able to simulate conversations that feel similar to human interaction and thereby improve the speed and efficiency of service delivery.

Several studies report that chatbots help reduce response time and enhance customer satisfaction by offering immediate assistance, especially for simple and repetitive questions. Research in Human-Computer Interaction suggests that users often prefer quick, accurate responses over waiting for a human agent when their query is straightforward. This is one of the reasons why sectors such as e-commerce, banking and healthcare are actively deploying chatbots on their platforms.

Another important theme in the literature is cost reduction and operational efficiency. Chatbots can automate routine tasks, such as answering frequently asked questions, checking order status or resetting passwords. This allows organizations to lower labour costs, reduce pressure on customer service teams and handle a higher volume of requests without compromising on speed. Studies in Information Systems highlight that such automation improves scalability and helps firms manage peak demand more smoothly.

The literature also stresses the role of chatbots in creating more personalized customer experiences. By analyzing data from past interactions and user behaviour, chatbots can make recommendations, address customers by name and adapt responses to individual needs. This personalization is linked with stronger customer engagement, satisfaction and loyalty.

Despite these advantages, researchers note several important challenges. Chatbots often struggle with complex, multi-part or context-dependent queries and usually cannot recognise emotions, frustration or subtle signals in the way that humans can. Ethical and usability-focused studies highlight issues related to data privacy, trust and transparency, especially when customers are not fully aware that they are interacting with an AI system.

To overcome these limitations, many authors recommend a hybrid service model. In such a model, chatbots handle basic, repetitive interactions, while human agents manage complex, high-risk or emotionally sensitive cases. This approach aims to bring together the strengths of both technology and human expertise to create a more balanced and effective customer service system.

Hypothesis Section

Hypothesis Development

Based on the literature, the study develops the following hypotheses:

H1: The use of AI chatbots has a significant positive impact on customer satisfaction.

H0: The use of AI chatbots has no significant impact on customer satisfaction.

Research Methodology

Research Design

This study uses a descriptive and quantitative research design to examine how AI chatbots affect customer service and satisfaction. The focus is on collecting numerical data from respondents who have experience using AI chatbots on different customer service platforms and then analyzing this data statistically.

Research Approach

A deductive approach is applied. First, hypotheses are developed from existing literature. Then, these hypotheses are tested using the survey data collected for the study. This process helps to confirm whether the patterns observed in earlier research also hold true in the present context.

Data Collection Method

- Primary data:

Primary data was collected through a structured questionnaire/survey distributed via online forms such as Google Forms. Respondents were customers who have interacted with AI chatbots while using services like e-commerce websites, banking applications or telecom support.

- Secondary data:

Secondary data was gathered from research articles, journals, websites and industry reports related to AI, chatbots and customer service. These sources provided theoretical background and supported the development of the hypotheses and questionnaire.

Research Technique

Sampling method: Convenience sampling

Sample size: Around 50–150 respondents (the final study used 60 respondents)

Target group: Users of online services such as e-commerce, banking and customer support platforms who have interacted with AI chatbots.

Reliability and Validity

To ensure the quality of the survey, questions were designed based on previous studies and checked for clarity and consistency. Reliability was tested using Cronbach's Alpha, and the values for chatbot efficiency and customer satisfaction were above 0.70, which indicates acceptable internal consistency of the items used in the questionnaire.

Data Analysis And Results

This section presents the analysis of the data collected from respondents who have interacted with AI chatbots in customer service platforms such as e-commerce, banking services, and telecom applications.

Table 1: Gender Distribution of Respondents

Gender	Frequency	Percentage
Male	34	56.7%
Female	26	43.3%
Total	60	100%

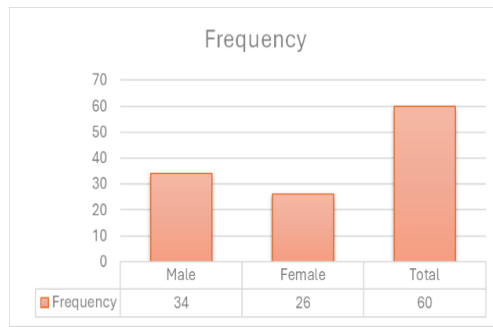


Fig. 1. Frequency Distribution of Respondents by Gender

As shown in the above table 56.7% of the respondents are male, while 43.3% are female. This indicates that both male and female participants have been included in the study, providing a balanced view of customer experiences with AI chatbots.

Table 2: Age Group of Respondents

Age Group	Frequency	Percentage
18–25 years	30	50%
26–35 years	18	30%
36–45 years	8	13.3%
Above 45 years	4	6.7%
Total	60	100%

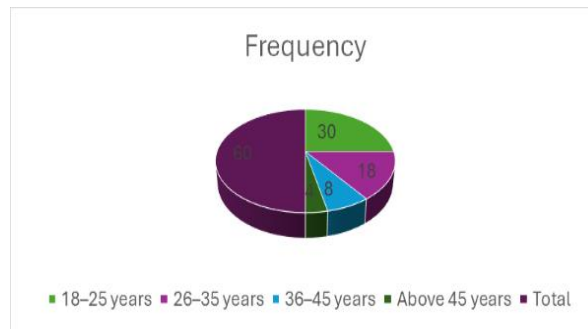


Fig. 2. Distribution of Respondents Across Different Age Groups.

As shown above that half of the respondents (50%) belong to the age group of 18–25 years, followed by 30% in the 26–35 years category. A smaller proportion belongs to the age groups of 36–45 years and above 45 years. This suggests that younger individuals are more likely to interact with AI chatbots in digital services.

Table 3: Descriptive Statistics

Variable	Mean	Standard Deviation
Chatbot Efficiency	3.82	0.74
Service Quality	3.65	0.81
Customer Satisfaction	3.9	0.69

Results indicate that there is a mean of 3.82 for chatbot efficiency, reflecting that users are of the opinion that chatbots play an important role in helping enhance service efficiency. For service quality, the mean value is 3.65, revealing that the effectiveness of chatbots in offering services is moderately high according to user perceptions. Customer satisfaction attains the highest mean value of 3.90

Table 4: Reliability Statistics

Variable	Number of Items	Cronbach Alpha
Chatbot Efficiency	5	0.82
Customer Satisfaction	5	0.85

From the analysis, the reliability values for chatbot efficiency are 0.82, while the customer satisfaction reliability score is 0.85. Both scores are above the acceptable limit of 0.70, which makes the items used in this research reliable.

Table 5: Hypothesis Testing Results

T Hypothesis Testing Results				
Relationship	Beta (β)	t-value	p-value	Result
Chatbot Efficiency → Customer Satisfaction	0.52	4.18	0.001	Supported

The results indicate that the beta value is 0.52, which shows a positive relationship between chatbot efficiency and customer satisfaction. The p-value is 0.001, which is less than the significance level of 0.05. Therefore, the hypothesis is supported, indicating that improved efficiency of AI chatbots is associated with higher customer satisfaction

Findings

- Positive Impact on customer satisfaction:

The results indicate that AI chatbots have a clear positive impact on overall customer satisfaction. Many respondents appreciated the quick and helpful responses provided by chatbots.

- Faster response time:

Chatbots help reduce the time customers spend waiting compared to traditional human-only support. The speed of response is one of the main reasons why customers feel more satisfied with the service.

- 24/7 availability and convenience

Customers value the fact that they can get support at any time of the day, without needing to follow office hours. This round-the-clock availability increases convenience and improves the overall experience.

- Improved operational efficiency

From an organizational point of view, chatbots allow companies to handle many queries at once. This reduces the workload of human agents and helps them focus on more complex tasks, making operations more efficient.

- Cost reduction for organizations

By automating routine and repetitive tasks, chatbots help reduce the cost of customer service. Companies can manage simpler queries with fewer human resources, which contributes to cost savings.

Discussion

The findings of the study show that AI chatbots are playing an increasingly important role in reshaping customer service. One of the most noticeable benefits is the ability of chatbots to provide instant responses, which significantly cuts down waiting time and improves the user experience. In many day-to-day situations, customers mainly want quick answers, and chatbots are well suited for these kinds of queries.

Another key advantage is 24/7 availability. Unlike human agents, chatbots do not require breaks or fixed working hours. Customers can therefore seek support whenever they face an issue, which is especially valuable in online services that operate across different time zones. This continuous availability adds to customer satisfaction and convenience.

The study also indicates that AI chatbots can improve operational efficiency and cost-effectiveness for organizations. Since chatbots can manage multiple conversations simultaneously, they help companies deal with peak loads without proportionally increasing staff. Over time, this can lead to better resource allocation and lower operating costs.

At the same time, the research highlights important limitations. Chatbots often find it difficult to handle complex, unusual or emotionally charged queries. They may misunderstand context or fail to recognise customer emotions such as frustration or anxiety. Additionally, concerns about data privacy and security can affect how much users trust chatbot-based services.

Because of these strengths and weaknesses, the discussion supports a hybrid model in which chatbots manage routine issues and human agents step in for more complicated or sensitive cases. This approach attempts to combine the efficiency of AI with the empathy and judgment of human staff, creating a more balanced customer service system.

Conclusion

In conclusion, the study finds that AI chatbots have become an important tool for improving customer service and customer satisfaction. They offer several benefits, including faster response times, 24/7 availability, better handling of large volumes of queries and reduced operational costs. These advantages contribute to improved customer experiences and help organizations manage their resources more effectively.

However, the research also shows that chatbots have certain limitations, especially when dealing with complex problems or when customers expect human-like understanding and emotional support. Relying only on chatbots may therefore not fully meet all customer needs.

The most effective strategy appears to be a combination of AI chatbots and human agents, where chatbots handle simple, repetitive tasks and humans manage complex or sensitive issues. As AI technology continues to evolve, chatbots are likely to become more advanced.

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