



The role of Ai chatbots in enhancing customer statisfication in based on business service

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Abstract

The rapid advancement of Artificial Intelligence (AI) has transformed customer service practices across service-based businesses. AI chatbots, powered by technologies such as Natural Language Processing (NLP) and machine learning, enable organizations to provide instant, automated, and personalized responses to customer queries. This study examines the role of AI chatbots in enhancing customer satisfaction within service-oriented industries. The research explores how chatbot functionalities, including 24/7 availability, quick response time, and consistent service delivery, contribute to improving the overall customer experience. By reducing response delays and handling high volumes of customer interactions efficiently, AI chatbots help businesses maintain service quality while lowering operational costs. The study also analyzes customer perceptions regarding chatbot effectiveness, usability, and reliability in addressing service-related concerns. Although AI chatbots offer numerous benefits, challenges such as limited emotional intelligence and difficulties in handling complex queries remain important considerations. The findings suggest that the integration of AI chatbots with human support systems can significantly improve service efficiency and customer satisfaction. Therefore, service-based organizations are encouraged to adopt AI-driven chatbot technologies as a strategic tool to strengthen customer engagement and enhance service quality in an increasingly digital business environment.

Keywords: Artificial intelligence, AI chatbots, customer satisfaction, service-based businesses, customer experience and digital customer service etc

Introduction

In today's competitive business environment, customer satisfaction has become a key factor for the success of service-based businesses. Companies continuously look for innovative ways to improve customer experience and provide quick and efficient support. With the advancement of Artificial Intelligence (AI), many organizations have started using AI-powered chatbots to interact with customers and handle their queries. AI chatbots are computer programs designed to simulate human conversation through text or voice. They use technologies such as natural language processing and machine learning to understand customer questions and provide appropriate responses. These chatbots are widely used in industries such as banking, e-commerce, healthcare, hospitality, and telecommunications to assist customers in real time.

One of the major benefits of AI chatbots is their ability to provide instant responses and 24/7 customer support. This helps reduce waiting time and improves service efficiency. Additionally, chatbots can handle multiple customer queries simultaneously, ensuring that customers receive prompt assistance even during peak hours. Therefore, the use of AI chatbots has become an important strategy for service-based businesses to enhance customer satisfaction, improve service quality, and reduce operational costs. This study aims to explore the role of AI chatbots in improving customer satisfaction and their impact on the overall service experience.

Review of Literature

The studies undertaken earlier with regard to the role of AI chatbots in enhancing customer Satisfaction in service - based business of are reviewed in the following paragraph. Mubasher Rasheed, Iqra Sami & Aliza Tabassam (2025) "The Impact of AI-Powered Chatbots on Customer Satisfaction and Business Performance in E-Commerce." They showed that chatbots offering quick, accurate, and

personalized responses significantly improve satisfaction, retention, and overall business performance.

Xu, Y., Zhang, J., Chi, R., & Deng, G. (2023) "Enhancing customer satisfaction with chatbots: the influence of anthropomorphic communication styles and anthropomorphised roles." This work demonstrates that using a social-oriented anthropomorphic style (making chatbots seem more human) leads to higher satisfaction; the perceived warmth of the chatbot mediates this effect, and whether the bot is framed as a partner vs servant moderates it.

Johnson Lathe & Gaurav (2025) "AI-Driven Chatbots in Customer Service: An Effective Evaluation." They identify improvements in response times, cost efficiency, first contact resolution, and user experience from integrating AI chatbots, especially when linked CRM systems. Real-world cases (e.g. bank, restaurant, telecom bots) exemplify these effects.

Ruan (2022) also highlights the importance of task-technology fit in chatbot design. Customers are more likely to perceive chatbots positively when the technology aligns well with the task requirements, whereas a poor fit leads to dissatisfaction and abandonment. Another key insight is the role of handoff mechanisms. The study shows that satisfaction decreases sharply when users feel "trapped" in a chatbot loop. To counter this, Ruan recommends seamless escalation to human agents when the chatbot cannot resolve an issue, arguing that hybrid models combining automation and human support consistently yield better satisfaction outcomes.

Mariani (2023) also examines the role of personalization and adaptability. The study shows that chatbots capable of tailoring responses to individual preferences and past interactions are more likely to generate positive experiences. For example, remembering customer history, offering product recommendations, or adjusting tone and language to suit the user can significantly enhance satisfaction.

Conversely, generic or repetitive responses create frustration and reduce the overall perception of service quality.

Statement of the problem

In today’s fast-paced digital environment, customers expect quick, efficient, and reliable service from businesses. Service-based industries such as banking, retail, healthcare, and telecommunications receive a large number of customer inquiries every day. Traditional customer service methods, which rely mainly on human agents, often face challenges such as long waiting times, high operational costs, and limited availability. To overcome these challenges, many businesses have started implementing Artificial Intelligence (AI) chatbots to handle customer interactions. These chatbots are designed to provide instant responses, assist customers with common queries, and improve service efficiency. Although AI chatbots offer several advantages, their effectiveness in enhancing customer satisfaction is still a topic of discussion.

Some customers appreciate the speed and convenience provided by chatbots, while others may experience difficulties when dealing with complex queries or when the chatbot fails to understand their requests. This creates uncertainty about how effective AI chatbots are in delivering high-quality customer service. Therefore, the problem addressed in this study is to examine the role of AI chatbots in service-based businesses and to understand how their use influences customer satisfaction. The study aims to analyze whether AI chatbots effectively improve customer experience and identify the factors that affect customer satisfaction when interacting with chatbot-based services.

Objectives of the study

- To understand how AI chatbots improve customer satisfaction in service-based businesses.
- To identify challenges in using AI chatbots for customer service.

Research methodology

This study employs a descriptive research design to assess the role of AI chatbots in enhancing customer Satisfaction in service -based business. The study aims to collect qualitative and quantitative data to understand user perceptions, experiences, and concerns. A random sampling technique will be used to ensure diversity in age, gender, education, and frequency of AI Chatbots use. A sample size of 114 respondents will be selected to provide reliable and generalizable findings.

Findings of the study

1. Relationship between the age and satisfaction level on AI Chatbots used in business service

Ho: There is no significant association between age of the respondents and satisfaction level on AI Chatbots used in business service.

Age	Level of Satisfaction			Total
	Low	Moderate	High	
Up to 30 Years	23 (27.06%)	52 (61.12%)	16 (18.82%)	85 (100 %)
31 to 50 Years	10 (45.45%)	6 (27.27%)	6 (27.28%)	22 (100 %)
50 to 64 Years	1 (25%)	1 (25%)	2 (50%)	4 (100 %)
Above 65 Years	2 (66.67%)	1 (33.33%)	0	3 (100 %)
Total	36	60	24	114

df = 6

Chi-Square Value = 50.667

Table value at five per cent level = 12.592

Since the calculated χ^2 value (50.667) is greater than the table value (12.592).Therefore it is concluded that there is a significant association between age of the respondents and satisfaction level. Hence, Null hypothesis is rejected.

2. Relationship between the Occupation and Satisfaction level on AI Chat bots used in business service

Ho: There is no significant association between occupation of the respondents and satisfaction level on AI Chatbots used in business service.

Occupation	Level of Satisfaction			Total
	Low	Moderate	High	
Business	6 (50%)	0	6 (50%)	12 (100 %)
Employee	10 (41.67%)	12 (50%)	2 (8.33%)	24 (100 %)
Agriculture	4 (50%)	3 (37.5%)	1 (12.5%)	8 (100 %)
Student	15 (21.43%)	40 (57.14%)	15 (21.43%)	70 (100 %)
Total	35	58	21	114

df = 2

Chi-Square Value = 22.857

Table value at five per cent level = 5.991

Since the calculated χ^2 value (22.857) is greater than the table value (5.991).Therefore it is concluded that there is a significant association between occupation of the respondents and satisfaction level. Hence, Null hypothesis is rejected.

Conclusion

This study examined the role of artificial intelligence (AI) and social media in strengthening relationship marketing and enhancing customer satisfaction among small and medium-sized enterprises (SMEs). The results of the statistical analysis indicated a significant effect; therefore, the null hypothesis (H₀) was accepted and the alternative hypothesis (H₁) was rejected. The findings highlight that relationship marketing plays a critical role in creating customer value, fostering meaningful interactions, and promoting customer engagement. Integrating AI and social media into relationship marketing strategies further amplifies these outcomes, leading to higher customer retention and improved satisfaction levels. Relationship marketing shifts the focus from price-based competition to delivering value through customer experience.

Moreover, the analysis revealed that AI-powered personalization significantly enhances customer satisfaction by offering tailored experiences and facilitating efficient feedback mechanisms. This not only strengthens customer relationships but also provides businesses with a competitive advantage. In addition, effective social media engagement strategies were found to reinforce customer connections and contribute to long-term relationship building.

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