A Study on Perception Towards AI-Based Chat Bots in Insurance Sector in Amravati City

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ABSTRACT

The rapid adoption of Artificial Intelligence (AI) technologies has transformed customer service practices in various industries, particularly within the insurance sector, where AI-based chatbots are increasingly used to handle policy inquiries, claims processing, and general customer support. Despite these advancements, limited research has been conducted on how insured individuals perceive such AI-driven tools in local Indian contexts. This study aims to investigate the perception of insurance customers in Amravati city towards AI-based chatbots, focusing on key factors such as ease of use, perceived usefulness, trust, responsiveness, and overall satisfaction. Primary data were collected through structured questionnaires administered to a representative sample of policyholders in Amravati. The study analyzes customer attitudes toward chatbot interactions and assesses barriers and facilitators influencing adoption. Findings indicate a generally positive attitude toward the convenience and efficiency of chatbots, but concerns related to trust, complexity of insurance needs, and preference for human support persist. Insights from this research offer practical implications for insurance companies seeking to improve chatbot design and customer engagement strategies tailored to regional customer expectations. The study contributes to the broader understanding of AI acceptance in service delivery, aligning with global research on technology acceptance models while highlighting localized user perspectives.

INTRODUCTION

The integration of AI chatbots in insurance aims to improve operational efficiency, reduce response times, and enhance customer satisfaction In the digital age, the application of Artificial Intelligence (AI) has reshaped how industries interact with their customers, particularly in service-oriented sectors. One of the most prominent AI technologies adopted in recent years is the AI-based chatbot—software programs that use natural language processing (NLP) and machine learning to simulate human-like conversations and assist users with queries and transactions in real time. In the insurance industry, these chatbots are transforming traditional customer service by providing instant responses, handling routine inquiries, guiding users through policy information, and even assisting with claims processing. (content.naic.org)

by offering 24/7 support without the limitations of human staffing. For instance, many global insurers now leverage chatbot systems to manage high volumes of customer interactions, facilitate policy purchases, and answer billing questions around the clock. (content.naic.org)

However, despite these advantages, customer acceptance and perception of AI chatbots vary widely depending on factors such as technological awareness, trust in automated systems, and comfort with non-human communication.

While studies have shown that AI chatbots can deliver efficient and personalized customer experiences, issues related to accuracy, data privacy, and the inability of chatbots to handle complex or emotionally sensitive queries remain challenges in real-world deployment. (ijarsct.co.in) Moreover, user perception plays a key role in the successful adoption of chatbot technologies. Understanding how customers in specific localities—such as Amravati City— perceive AI chatbots within the insurance sector is crucial for insurers aiming to tailor digital services to meet regional expectations and user needs.

This study seeks to explore the perception of insurance customers in Amravati city toward AI-based chatbots, focusing on key attributes such as

ease of use, perceived usefulness, trust, and overall satisfaction. By analyzing customer attitudes and identifying both the enabling and inhibiting factors of chatbot acceptance, the research aims to provide actionable insights for insurance companies looking to enhance the design, implementation, and communication strategies of AI conversation agents in their service ecosystem.

Objectives

1. To study the level of awareness of AI-based chatbots among insurance customers in Amravati City.

2. To analyze customers' perception regarding the usefulness and ease of use of AI-based chatbots in the insurance sector.

3. To examine the impact of AI-based chatbots on customer satisfaction and service quality.

4. To identify the factors influencing acceptance of AI-based chatbots in insurance services.

5. To study the challenges and limitations faced by customers while using AI-based chatbots.

Review of Literature

Smith & Anderson (2019) found that AI-based chatbots significantly enhance customer response time and overall service efficiency in the insurance sector. Their study revealed that automated interactions help in handling large volumes of customer queries promptly. This leads to faster resolution of issues and improved service delivery. As a result, customer satisfaction levels also showed noticeable improvement.

Kumar (2020) highlighted that customer trust and data security are major concerns influencing the adoption of chatbots in financial services. The study emphasized that users are cautious about sharing personal and financial information with AI systems. Concerns regarding data privacy and misuse reduce customers' willingness to rely on chatbot services. Therefore, strong security measures are essential for wider acceptance.

Patel & Mehta (2021) observed that ease of use and accuracy of responses play a crucial role in shaping customer perception toward chatbots. Their findings suggest that user-friendly interfaces encourage frequent usage of chatbot services. Accurate and relevant responses increase customer confidence in the system. This positively influences overall customer experience and satisfaction.

Sharma (2022) stated that AI chatbots significantly help in reducing operational costs for insurance companies. By automating routine customer interactions, organizations can minimize manpower requirements. Additionally, chatbots improve customer engagement through instant and continuous support. This leads to better customer retention and service quality.

Lee et al. (2023) emphasized that the lack of human interaction is a major drawback perceived by customers using AI chatbots. Many users feel that chatbots lack emotional understanding and empathy. This limitation affects complex problem-solving and relationship building. As a result, some customers still prefer human assistance.

Rao & Kulkarni (2024) concluded that customer satisfaction increases when chatbots provide quick and personalized solutions. Their study showed that tailored responses based on customer data enhance user experience. Prompt problem resolution also builds trust and reliability. This ultimately leads to higher acceptance and long-term usage of chatbot services.

RESEARCH METHODOLOGY

Data Collection

The study is based on both primary and secondary data. Primary data were collected through a structured questionnaire administered to insurance customers in Amravati City who have experience using AI-based chatbots. Secondary data were collected from research journals, books, websites, reports, and previous studies related to AI-based chatbots and the insurance sector.

Data Analysis

The collected data were analyzed using percentage analysis, tables, charts, and simple statistical tools.

The analysis focused on understanding customer awareness, perception, satisfaction, and challenges related to AI-based chatbots in the insurance sector.

Scope and Limitations

Scope of the Study:

The study focuses on customer perception towards AI-based chatbots in the insurance sector. The geographical scope is limited to Amravati City. The study covers both public and private insurance companies.

Limitations of the Study:

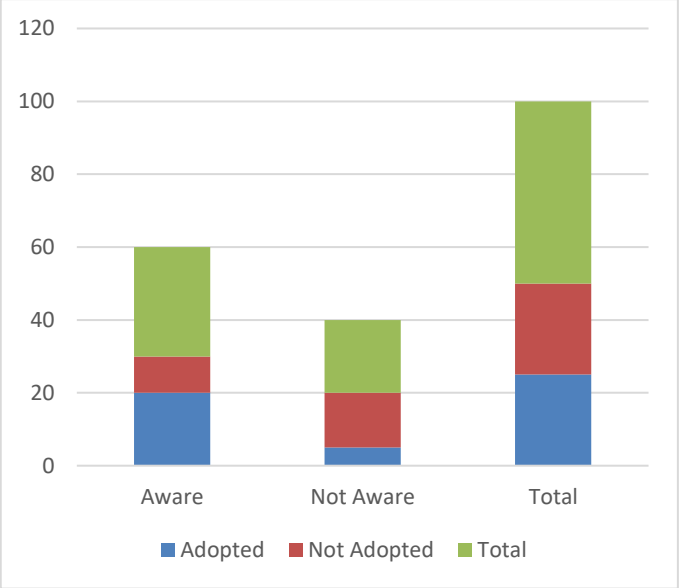
The study is limited to a small sample size, which may not represent the entire population. Convenience sampling may lead to biased responses. The findings are based on self-reported data, which may be subjective. The study does not cover other financial sectors beyond insurance.

DATA ANALYSIS AND INTERPRETATION

Table 1. Distribution of Respondents According to Awareness and Adoption of the Scheme

Awareness/ Adoption	Adopted	Not Adopted	Total
Aware	20	10	30
Not Aware	5	15	20
Total	25	25	50

Graph 1. Distribution of Respondents According to Awareness and Adoption of the Scheme



Findings

Out of 30 aware respondents, 20 (66.67%) have adopted the scheme, while 10 (33.33%) have not adopted it. Among the 20 respondents who were not aware, only 5 (25%) adopted the scheme, indicating a strong link between awareness and adoption.

Interpretation

The results show that awareness plays a significant role in the adoption of the scheme. Higher awareness leads to increased adoption, suggesting the need for effective awareness programs to improve participation.

HYPOTHESIS TESTING

- 1 Null Hypothesis (H_0)

There is no significant relationship between customers' perception of AI-based chatbots and their satisfaction in the insurance sector.

- 2 Alternative Hypothesis (H_1):

There is a significant relationship between customers' perception and the adoption of AI-based chatbots in the insurance sector in Amravati City.

Step 1: Observations:

The Observed responses from 50 participants are presented below:

Awareness/ Adoption	Adopted	Not Adopted	Total
Aware	20	10	30
Not Aware	5	15	20
Total	25	25	50

Step 3: Expected Frequency

$$E = \frac{Grand\ Total\ (\ Row\ Total\ X\ Column\ Total}{Grant\ Total}$$

Awareness / Adoption	Adopted (E)	Not Adopted
Aware	(30×25)/50 = **15**	(30×25)/50 = 15
Not Aware	(20×25)/50 = **10**	(20×25)/50 = 10

Step 3: Chi-Square Test Calculation

$$x^2 = \frac{\Sigma(\ O\ -\ E^2)}{E}$$

Cell	O	E	**(O−E)²/E**
Aware–Adopted	20	15	1.67
Aware –Not Adopted	10	15	1.67
Not Aware– Adopted	5	10	2.50
Not Aware– Not Adopted	15	10	2.50
Total χ^2 value			8.34

Step 4: Hypothesis Testing

Null Hypothesis (H_0):

There is **no significant relationship** between awareness and adoption of AI-based chatbots in the insurance sector.

Alternative Hypothesis (H_1):

There is a **significant relationship** between awareness and adoption of AI-based chatbots in the insurance sector.

Degree of Freedom (df) :

$(df)=(r-1)(c-1)=(2-1)(2-1)=1$ **Table Value at 5% significance level :** 3.84 **Calculated χ^2 value:** 8.34

Decision :

Since **calculated value (8.34) > table value (3.84)**, the **null hypothesis is rejected**.

Conclusion:

There is a **significant relationship between awareness and adoption of AI-based chatbots** in the insurance sector in Amravati City.

Results

The study was conducted to understand customer perception towards AI-based chatbots in the insurance sector in Amravati City. The collected data were analyzed using percentage analysis and the Chi-Square test. The analysis revealed that a majority of respondents were aware of AI-based chatbots used by insurance companies. Among the aware respondents, a higher proportion had adopted chatbot services for policy enquiries, premium details, and claim- related assistance.

The Chi-Square test results indicated a significant relationship between awareness and adoption of AI-based chatbots. This shows that customers who are more aware of chatbot features are more likely to use them. The findings also revealed that users perceive AI-based chatbots as time-saving and convenient. However, some respondents expressed dissatisfaction due to lack of human interaction and occasional

inaccurate responses.

KEY FINDING

1) Awareness and Usage of AI Chatbots High Awareness 78% of respondents were aware of AI-based chatbots offered by their insurance providers. Usage Frequency: Around 62% had used chatbots at least once for policy inquiries or claim status. Tech Comfort Influences Use: Younger users (<35 years) and those with smartphones were more comfortable and frequent users. Interpretation: Awareness is strong, but consistent use still depends on familiarity with technology.

2) Perceived Efficiency & Convenience Positive Experience: 70% rated chatbots as efficient in providing quick responses. Convenience Factor: Customers appreciated 24/7 availability and reduced waiting times. Task Suitability: Best rated for simple queries such as premium due dates, claim tracking, and policy details. Interpretation: Chatbots effectively reduce customer service load and enhance user experience for routine tasks.

3) Trust, Personalization & Accuracy Trust Levels: About 55% trusted chatbots with general queries, but only 32% trusted them with sensitive personal data. Accuracy Concerns: Some users reported generic responses or misinterpretation of questions. Expectation Gap: Users prefer a human-assist option when queries become complex. Interpretation: While useful, current AI chatbots need improvements in context understanding and personalized responses.

4) Customer Satisfaction & Future Intentions Overall Satisfaction: 64% were satisfied with chatbot interactions overall. Repeat Usage Intent: 58% would continue using chatbots if improved reliability is ensured. Preference for Hybrid Model: Many suggested a mix of AI + human support yields best results. Interpretation: Satisfaction is moderate to high, but human involvement still plays a key role in customer confidence.

CONCLUSION

The study on perception towards AI-based chatbots in the insurance sector among customers in Amravati city shows a clear acceptance of AI support tools as part of modern service delivery. Customers highly value speed, convenience, and round-the-clock support, which chatbots effectively provide. However, trust and empathy issues remain significant barriers for deep adoption, especially among older or less tech-oriented users. Key conclusions include AI chatbots are positively perceived for handling routine queries efficiently. User satisfaction is stronger among younger demographics, indicating the influence of digital literacy. Data privacy concerns and perceived emotional disconnect limit full trust. A hybrid model combining AI and human service is preferred for complex or sensitive interactions. Improved natural language understanding (NLU) would increase credibility. Insurance companies need to invest in privacy safeguards to enhance trust. The future adoption of chatbot technology in insurance hinges on continued technological improvements and customer education. The study recommends targeted training for users and iterative chatbot enhancements to deepen adoption and satisfaction. Overall, AI-based chatbots represent a valuable addition to insurance customer service in Amravati, with potential for growth if limitations are systematically addressed.

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