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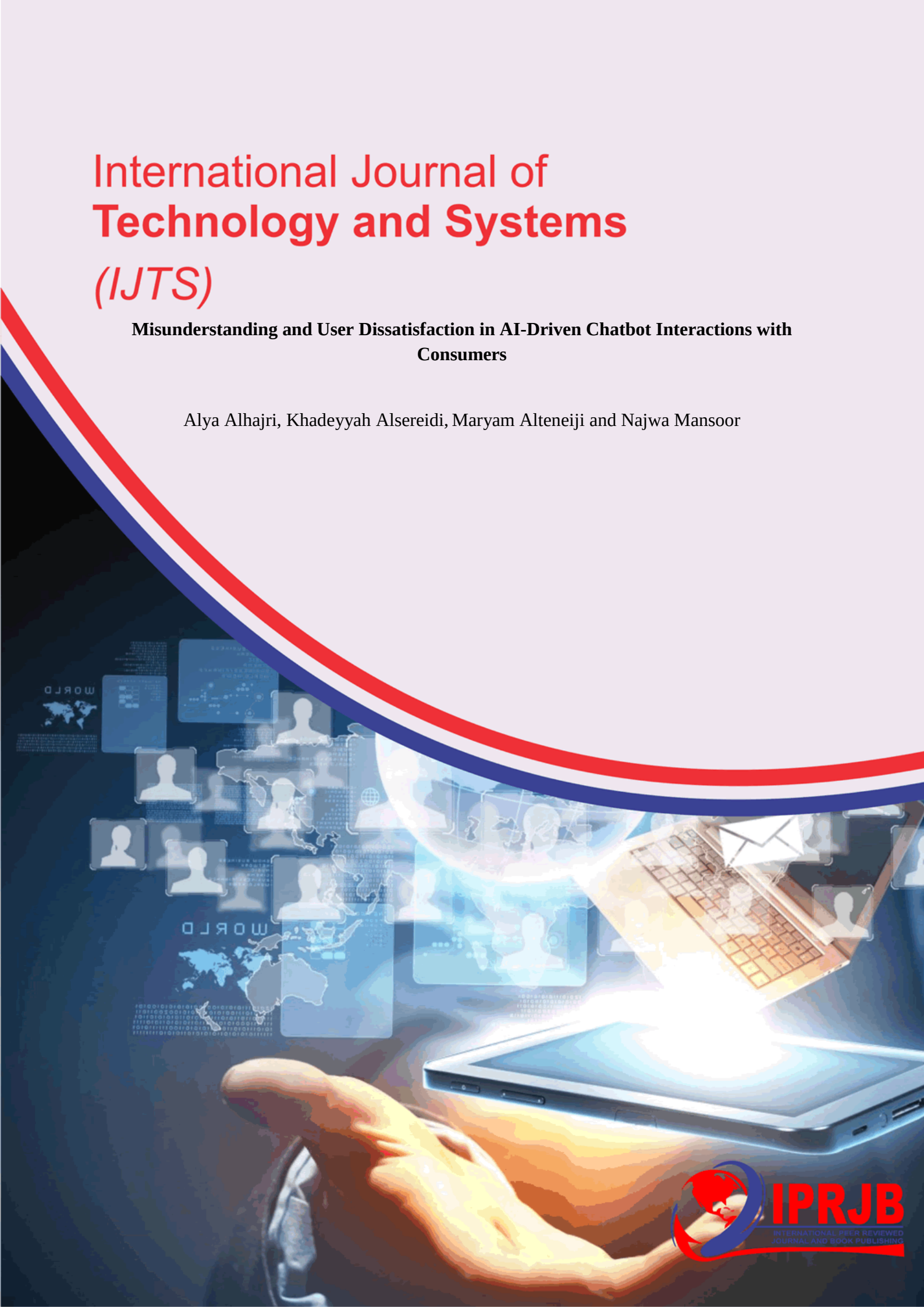

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Misunderstanding and User Dissatisfaction in AI-Driven Chatbot Interactions with Consumers

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Abstract

Purpose: This study examines the key factors contributing to misunderstanding and user dissatisfaction in AI-driven chatbot interactions, with a focus on intent misinterpretation, emotional responsiveness, personalization, and privacy concerns across multiple service sectors.

Methodology: A qualitative research design was adopted using semi-structured interviews with twelve participants from e-commerce, banking, education, and customer service sectors. Thematic analysis was applied to identify recurring patterns and user perceptions related to chatbot performance and experience.

Findings: Findings revealed four dominant sources of dissatisfaction: misunderstanding user queries, inaccurate or incomplete responses, lack of emotional intelligence and personalization, and concerns regarding data security and privacy. While chatbots were effective for routine inquiries, they were perceived as inadequate for complex or emotionally sensitive interactions.

Unique Contribution to Theory, Practice, and Policy: The study contributes theoretically by extending human–AI interaction literature through a user-centered, qualitative perspective. Practically, it offers actionable design recommendations for improving chatbot empathy, accuracy, and trustworthiness. From a policy perspective, it highlights the importance of transparent data governance and regulatory compliance in AI-driven service systems.

Keywords: *AI Chatbots, User Dissatisfaction, Customer Experience, Personalization, Emotional Intelligence, Data Privacy*

JEL Classification Codes: *C83, M15, O33*

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INTRODUCTION

Artificial intelligence chatbots have transformed customer service by providing instant message responses 24/7, automating FAQ inquiries, and enhancing user engagement (Adamopoulou & Moussiades, 2020). AI chatbot is used in many sectors to give greater operational efficiency, lower costs, greater productivity, and to provide seamless support. In a study published by Markets Insider (2021), the global chatbot market was valued at $2.9 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 23.5% to $10.5 billion by 2026.

The rapid growth of the global chatbot market increases the importance of studying user dissatisfaction, as dissatisfaction at scale can significantly damage customer trust, brand reputation, and service adoption. As chatbot deployment expands across industries and customer touchpoints, even minor usability flaws or emotional disconnects can affect millions of users, amplify negative experiences and increase customer churn. Understanding dissatisfaction at this stage is therefore critical to ensuring sustainable, responsible, and user-centered AI adoption.

However, even if such AI chatbots are widely used nowadays, many customers find frustration and still feel dissatisfied because of misunderstanding with how they addressed their problem via the chatbot. These issues come from its limitations in natural language processing (NLP), lack of contextual understanding, and inability to handle complex or emotional inquiries effectively (Brandtzaeg & Følstad, 2018). In addition, studies have highlighted that users often feel unheard or misunderstood when chatbot fails to interpret queries accurately or provide generic, irrelevant or repetitive responses, which leads to consumers' frustration, increase customer churn rate and preferences for human assistant support (Press, 2023).

The goal of this study is to examine the main challenges that consumers face in communication with the AI chatbot and lead to misunderstanding and user dissatisfaction, how it impacts on consumers' perception, in addition, propose recommendations for improving the AI chatbot to increase its effectiveness and users' satisfaction. Understanding these issues is important for businesses that are looking for optimizing AI chatbot customer service, enhancing their users' experience, and satisfaction.

This study positions misunderstandings as the central phenomena driving user dissatisfaction in interactions with AI-driven chatbots. Such misunderstandings emerge primarily from three interconnected mechanisms: limitations in natural language processing (NLP) that hinder accurate intent recognition, insufficient emotional responsiveness that reduces perceived empathy, and a lack of personalization that weakens contextual relevance. Rather than treating these factors independently, this research conceptualizes them as interrelated processes through which chatbot systems fail to interpret user needs effectively, resulting in frustration, disengagement, and diminished trust. This framing enables a more integrated understanding of how technical and relational deficiencies collectively shape negative user experiences.

Research Gap and Study Objectives

Despite the rapid adoption of AI-driven chatbots across customer service sectors, existing research has predominantly focused on their technical efficiency, adoption rates, and cost-reduction benefits. While prior studies acknowledge issues such as misunderstanding user queries, lack of empathy, and trust concerns, much of the literature relies on quantitative surveys or experimental designs that capture surface-level satisfaction metrics. Consequently, there

remains a limited in-depth understanding of how users interpret, experience, and make sense of chatbot failures during real service interactions, particularly across different service sectors.

Moreover, existing studies often examine these challenges in isolation, rather than exploring how misinterpretation, emotional disconnect, response accuracy, and privacy concerns collectively shape user dissatisfaction. This creates a gap in understanding the holistic user experience and the underlying reasons that drive frustration and preference for human agents.

To address this gap, the present study adopts a qualitative, user-centered perspective to explore the lived experiences of consumers interacting with AI-driven chatbots across multiple sectors. By capturing rich narratives from users, the study aims to uncover nuanced insights into the sources of misunderstanding and dissatisfaction that are not fully explained through quantitative measures alone.

Accordingly, the study is guided by the following research questions:

RQ1: How do users experience and interpret misunderstandings during interactions with AI-driven chatbots?

RQ2: What factors contribute most significantly to user dissatisfaction with chatbot-based customer service?

RQ3: How do emotional responsiveness, personalization, and privacy concerns independently influence users' perceptions of chatbot effectiveness?

RQ4: How do users compare AI chatbot interactions with traditional human-based customer support?

The findings of this study aim to inform the design of more empathetic, accurate, and trustworthy AI chatbot systems that align with evolving user expectations.

Problem Statement

Despite the widespread implementation of AI-driven chatbots in customer service ecosystems, substantial user dissatisfaction persists due to persistent miscommunication, emotional disengagement, and privacy concerns during automated interactions. While the extant literature has thoroughly examined chatbot efficiency, adoption metrics, and cost-benefit analyses, a critical conceptual gap remains: limited empirical exploration of how users experience and interpret chatbot failures within real-world service contexts, particularly regarding the interplay between emotional responsiveness, contextual personalization, and data privacy. Prior research predominantly relies on quantitative satisfaction metrics that capture surface-level outcomes while neglecting the underlying cognitive-affective processes that shape user trust, engagement, and system acceptance. Furthermore, existing studies frequently treat technical limitations, emotional disconnect, and privacy risks as isolated phenomena, thereby obscuring the synergistic mechanisms through which these interconnected factors collectively drive user frustration and preference for human agents. This study addresses these gaps through a qualitative, user-centered methodology, systematically investigating cross-sector consumer experiences with AI chatbots. The findings will advance theoretical understanding of human-AI interaction by revealing experiential dimensions of failure; inform practical design

frameworks for developing more accurate, empathetic, and trustworthy conversational agents; and support policy development for ethical, transparent, and user-centric AI governance.

LITERATURE REVIEW

The growing integration of AI-driven chatbots into customer service has attracted significant academic attention, particularly regarding their efficiency, scalability, and ability to deliver continuous support. However, despite their operational advantages, a growing body of literature highlights persistent challenges that negatively affect user experience and satisfaction. This review is organized around four key themes that dominate current debates on chatbot effectiveness: (1) misunderstanding and intent recognition, (2) response accuracy and reliability, (3) emotional intelligence and personalization, and (4) privacy and data security concerns.

Misunderstanding User Intent and Contextual Limitations

A central theme in chatbot research is the system's limited ability to accurately interpret with a user intent. Many chatbots rely heavily on keyword matching and predefined dialogue flows, which restrict their capacity to understand non-standard phrasing or complex queries. Zhang et al. (2024) argue that such limitations frequently result in chatbot-induced service failures, leading to user frustration and disengagement. Similarly, Brandtzaeg and Følstad (2018) emphasize that evolving user expectations increasingly expose the gap between human conversational norms and chatbot capabilities.

Fan et al. (2023) further highlight that inadequate escalation mechanisms exacerbate this issue, as users are often unable to transition smoothly to human agents when misunderstandings occur. This body of research underscores the importance of contextual awareness and adaptive dialogue management in reducing service breakdowns.

Response Accuracy, Reliability, and Trust

Beyond intent recognition, the accuracy and reliability of chatbot responses constitute a critical determinant of user satisfaction. While chatbots perform effectively in handling routine inquiries, studies consistently show their limitations in addressing complex, domain-specific requests. Sun (2017) reported a 70% failure rate in early chatbot implementations, raising concerns about reliability and user trust.

More recent research by Graham et al. (2025) demonstrates that inaccuracies in chatbot responses, particularly in financial and banking services, significantly erode consumer confidence. When users perceive chatbot information as unreliable, they are more likely to abandon automated services in favor of human support. This theme reflects an ongoing debate regarding whether current AI capabilities can meet the accuracy demands of high-stakes service environments.

Emotional Intelligence, Empathy, and Personalization

Another prominent debate in chatbot literature concerns the lack of emotional intelligence and personalized interaction. Users increasingly expect service technologies to demonstrate empathy, especially during complaint handling and service recovery scenarios. Hlee et al. (2022) found that when chatbots attempt to mimic human conversation without genuine emotional understanding, users experience disappointment and reduced engagement.

Similarly, Purington et al. (2019) emphasize that trust in chatbots is closely tied to their ability to respond in a socially appropriate and emotionally sensitive manner. Generic, scripted responses contribute to perceptions of chatbots as impersonal and robotic, limiting their effectiveness in customer relationship management (Zhang et al., 2024). This debate highlights the tension between automation efficiency and the human need for emotional connection.

Privacy, Data Security, and Regulatory Concerns

Privacy and data security represent a critical and increasingly debated theme in AI-driven service interactions. Scott (2023) reports that a majority of users express concern over how chatbots collect, store, and utilize personal data, particularly in sensitive contexts such as banking and healthcare. High-profile data breaches, such as the Tesco Bank cyber incident (Arthur, 2016), have intensified public skepticism toward automated systems.

In response, regulatory frameworks such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) impose strict requirements on transparency, consent, and data protection (Jha et al., 2025). Veale and Zuiderveen Borgesius (2021) argue that compliance with these regulations is not only a legal necessity but also a foundational element in building user trust. This literature emphasizes that privacy safeguards are integral to the long-term adoption of chatbot technologies

Synthesis and Research Gap

Collectively, the literature reveals that user dissatisfaction with AI-driven chatbots arises from an interconnected set of technical, emotional, and ethical challenges. While prior studies have examined these issues individually, there is limited qualitative research that explores how users experience and interpret these challenges holistically across different service sectors.

Most existing research relies on quantitative measures of satisfaction or performance metrics, leaving a gap in understanding the lived experiences, emotional responses, and sense-making processes that shape user perceptions of chatbot effectiveness. Addressing this gap, the present study adopts a qualitative, interpretivist approach to examine user dissatisfaction through in-depth interviews, offering a richer, user-centered perspective that extends current chatbot research.

Collectively, the reviewed studies converge in identifying misunderstanding, limited emotional responsiveness, and concerns over accuracy and privacy as central determinants of user dissatisfaction with AI-driven chatbots. However, notable contradictions and unresolved tensions remain within this body of literature. For instance, while Zhang et al. (2024) and

Brandtzaeg and Følstad (2018) emphasize technical limitations in intent recognition as the primary source of service failure, Hlee et al. (2022) and Purington et al. (2019) argue that even technically accurate responses may be evaluated negatively when emotional cues and social appropriateness are lacking. This divergence suggests an unresolved tension between functional performance and affective expectations, indicating that technical accuracy alone may be insufficient to ensure positive user experiences.

Similarly, the literature presents conflicting views on the extent to which personalization can compensate for automation. Whereas some studies propose that adaptive and context-aware dialogue systems can narrow the gap between human and machine interaction (Fan et al., 2023), others contend that simulated empathy may heighten user disappointment by creating unrealistic expectations of human-like understanding (Hlee et al., 2022). This contradiction reflects an ongoing debate regarding whether anthropomorphic design enhances trust or, conversely, amplifies perceptions of failure when emotional authenticity is absent.

Further tension is evident in the relationship between efficiency and trust. Graham et al. (2025) and Sun (2017) document significant declines in user confidence when response accuracy falters, particularly in high-stakes domains, whereas regulatory-focused studies (Veale & Zuiderveen Borgesius, 2021; Jha et al., 2025) suggest that transparency and compliance may partially offset technical shortcomings by reinforcing institutional trust. Yet, empirical evidence remains limited regarding how users reconcile regulatory assurances with lived experiences of error, misinterpretation, and privacy vulnerability during real-time interactions.

These contradictions indicate that existing research has not fully resolved how technical competence, emotional engagement, personalization, and ethical assurance interact dynamically in shaping user evaluations of chatbot systems. Most studies isolate individual variables, thereby obscuring the complex trade-offs and synergies among them. The present study addresses this unresolved tension by examining how users simultaneously interpret functional breakdowns, emotional disconnect, and privacy concerns, offering an integrated, experiential account of how these factors collectively construct dissatisfaction and preference for human agents across service contexts.

Early chatbot systems such as ELIZA (Weizenbaum, 1966) and PARRY (Colby, 1975) relied on rule-based pattern matching and scripted responses, offering only the illusion of understanding and little capacity for contextual or semantic interpretation. Since then, advances in natural language processing and machine learning—particularly the development of statistical dialogue systems and, more recently, deep neural and transformer-based architectures—have substantially improved linguistic fluency, domain coverage, and scalability (Jurafsky et al., 2008; Radford et al., 2019). Contemporary chatbots can generate coherent, contextually appropriate utterances and handle a wide range of user inputs, representing a significant departure from the brittle, surface-level interactions of early systems.

Nevertheless, empirical research demonstrates that despite these technological advances, fundamental challenges persist. Modern conversational agents still struggle with robust intent recognition, deep contextual understanding, emotional attunement, and trustworthiness, particularly in complex or high-stakes domains (Brandtzaeg & Følstad, 2017; Luger & Sellen, 2016; Araujo, 2018). Thus, while current systems surpass early chatbots in fluency and flexibility, the present findings must be understood as part of a longer historical trajectory in which improvements in surface-level language generation have not fully resolved enduring limitations in pragmatic understanding, social intelligence, and user trust.

Critically, scholars argue that while AI systems can simulate empathetic communication, they cannot possess genuine empathy because they lack consciousness, subjective experience, and affective states. Empathy in humans involves both cognitive perspective-taking and affective resonance, grounded in lived emotional experience and moral agency (Decety & Jackson, 2004). In contrast, AI models identify emotional patterns in data and generate contextually appropriate responses without feeling or understanding emotions in any phenomenological sense (Boden, 2016). This has led to the notion of "simulated empathy" or the "empathy illusion," whereby users may perceive warmth and understanding despite the absence of genuine emotional concern (Araujo, 2018; Luger & Sellen, 2016). Empirical studies show that although empathetic language in chatbots can increase perceived social presence and trust, users often question its authenticity once they reflect on the system's non-sentient nature (Følstad & Skjuve, 2019). Ethical critiques further warn that presenting simulated empathy as equivalent to human care may foster emotional over-reliance and mislead users in sensitive contexts such as mental health and crisis support (Bickmore et al., 2018). Thus, while advances in affective computing enable increasingly sophisticated emotional simulation, the absence of intentionality and experiential feeling marks a fundamental boundary between artificial and genuine empathy.

Beyond addressing the lack of holistic, qualitative accounts in prior research, the present study extends the literature in three important ways. First, rather than treating intent recognition, response accuracy, emotional responsiveness, personalization, and privacy as separate determinants of satisfaction, this study theories user dissatisfaction as an emergent, integrated experience produced by their dynamic interaction within real service encounters. By adopting a qualitative, cross-sector perspective, it demonstrates how breakdowns in one dimension (e.g., misinterpretation of intent) intensify perceived failures in others (e.g., emotional inauthenticity or trust erosion), thereby advancing existing variable-based models toward an experiential, process-oriented framework.

Second, the study extends debates on simulated versus genuine empathy by showing how users actively interpret and evaluate emotional cues in relation to task complexity, sectoral risk (e.g., banking versus e-commerce), and expectations of moral and institutional responsibility. This moves beyond binary distinctions between technical performance and affective display,

revealing how perceived inauthenticity of empathy contributes to dissatisfaction even when informational accuracy is achieved.

Third, by situating contemporary user experiences within a historical trajectory from rule-based to neural conversational agents, the study offers a longitudinal, sense-making perspective that explains why improvements in linguistic fluency and personalization have not resolved enduring tensions between efficiency, emotional credibility, and trust. In doing so, the research reframes chatbot evaluation from a purely technological problem to a socio-technical and ethical one, thereby extending human–AI interaction theory and service automation research with a user-centered, interpretivist model of dissatisfaction formation.

METHODOLOGY

Research Design and Paradigm

This study is grounded in an interpretivist research paradigm, which assumes that reality is socially constructed and that meaning emerges through individuals' subjective experiences. Given that user dissatisfaction with AI chatbots is shaped by personal expectations, emotions, prior experiences, and contextual factors, an interpretivist approach is particularly appropriate for capturing these complex and nuanced perceptions.

A qualitative methodology was selected to align with the study's aim of understanding how and why users experience misunderstanding and dissatisfaction during chatbot interactions, rather than measuring the frequency of predefined variables. Qualitative methods enable participants to articulate their experiences, frustrations, and expectations in their own words, providing deeper insight into emotional responses, trust concerns, and contextual interpretations that cannot be fully captured through quantitative surveys.

Semi-structured interviews were therefore employed to allow flexibility while maintaining consistency across participants. This approach supports exploratory inquiry and enables the identification of recurring themes across diverse service contexts. By adopting a qualitative, interpretivist lens, the study is able to generate rich, context-sensitive insights that directly inform user-centered chatbot design and service improvement strategies (Creswell & Poth, 2017; Denzin & Lincoln, 2018).

Sampling Strategy and Participant Selection

This study employed purposive sampling to ensure the selection of participants with relevant and direct experience using AI-driven chatbots in customer service contexts. Purposive sampling is appropriate for qualitative, interpretivist research as it enables the deliberate selection of information-rich cases that can provide deep insight into the phenomenon under investigation (Creswell & Poth, 2017).

Participants were required to have prior experience interacting with chatbots in at least one service domain, including e-commerce, banking, education, travel, or general customer service. This criterion ensured that participants could reflect meaningfully on chatbot performance,

limitations, and user experience. A total of twelve participants were recruited, which is consistent with qualitative research standards aimed at achieving depth of understanding rather than statistical generalization.

The sample size was determined based on data saturation, whereby no substantially new themes emerged during later interviews. Including participants from multiple sectors enhanced the diversity of perspectives and increased the transferability of the findings across different service contexts.

Data Collection Methods

Data was collected through semi-structured, in-depth interviews, which are well suited for exploring personal experiences, perceptions, and emotional responses. This method allowed participants to express their views freely while ensuring that key topics related to chatbot misunderstanding, response accuracy, emotional engagement, and privacy concerns were consistently addressed across interviews.

Each interview lasted approximately 30 minutes and was conducted individually to promote openness and minimize peer influence. A predefined interview guide consisting of open-ended questions was used, while allowing flexibility for probing and follow-up questions based on participant responses. This approach enabled the exploration of unanticipated issues and deeper clarification of participant experiences.

Prior to data collection, participants were informed of the study's purpose and provided verbal consent. Ethical considerations were addressed by ensuring participant anonymity, secure data storage, and the use of anonymized identifiers (e.g., P1–P12) in transcripts and reporting. All interviews were transcribed verbatim to ensure accuracy and to support rigorous qualitative analysis.

Ethical Considerations

Ethical considerations were carefully addressed throughout all stages of the research process in accordance with qualitative research ethics. Prior to participation, all participants were informed about the purpose of the study, the nature of their involvement, and their right to withdraw at any time without consequence. Verbal informed consent was obtained from all participants before conducting the interviews.

Participant confidentiality and anonymity were strictly maintained. No personally identifiable information was collected, and participants were assigned anonymized identifiers (P1–P12) to protect their identities in transcripts and reported findings. All interview data were securely stored and accessed only by the researchers.

Given the study's focus on AI chatbots and potential privacy concerns, particular care was taken to ensure that participants were not asked to disclose sensitive personal, financial, or organizational information. Any examples shared by participants were treated with discretion and reported in a generalized manner.

The study adhered to principles of voluntary participation, confidentiality, and data protection, ensuring that the research posed no foreseeable risk or harm to participants. These measures support the credibility, integrity, and ethical rigor of the study (Creswell & Poth, 2017; Denzin & Lincoln, 2018).

Data Analysis

This study adopts a qualitative approach, utilizing semi-structured interviews to gain in-depth insights into user experience with the chatbots through doing interviews. Twelve participants were selected through purposive sampling to ensure they had prior experience using chatbots in customer service settings. The sample included diverse users across various sectors (e-commerce, banking, travel, and student) to capture a range of perspectives. The interviews were conducted individually to guarantee consistency in topic coverage while preserving the individuality of participants' experiences, each lasting 30 minutes. The time the participants took allowed them to hear the questions and respond to them very carefully. The participants were provided with a set of guided, open-ended questions designed to explore their experiences, challenges & perceptions of the chatbots. Additionally, participants were informed, ensured confidentiality, anonymized in transcripts, data securely stored, and verbal content was collected and transcribed for accuracy. Thematic analysis was used to identify recurring patterns & themes in the collected data. The process involved manually coding transcripts, grouping similar codes into themes & reviewing these themes to ensure they accurately reflected the data. This approach allowed for the extraction of meaningful insights related to user frustrations, expectations & preferences in chatbot interactions. Qualitative analysis is highly appropriate for this study because it concentrates on user experiences, emotional reactions and perceptions. These elements are captured through exploratory methods and open-ended, rather than having a quantitative analysis. This study aims to understand "how" and "why" users are dissatisfied, using qualitative methods offer the flexibility to dig into areas participants find most important (Denzin & Lincoln, 2018). Qualitative interviews allow participants to express expectations, frustrations and nuanced feedback in their own words (Creswell & Poth, 2017). This approach identifies issues such as data privacy fears, lack of empathy and misinterpretation of queries, which may not apply for structured questionnaires.

The following questions were used in interviewing the participants:

1. Can you describe a situation where the chatbot did not understand your question?
2. How effectively does the chatbot communicate its responses?
3. Can you provide an example of when the chatbot's response felt unnatural or confusing?
4. How do you feel about using an AI chatbot instead of speaking with a human?
5. Do you have any concerns regarding the privacy and confidentiality of your conversations with the chatbot?
6. How satisfied are you with your overall experience using the chatbot?
7. Have you ever felt frustrated with the chatbot's responses?
8. What is one improvement you would like to see in the chatbot's performance?
9. How would you compare your satisfaction with AI chatbot interactions to traditional customer support methods?

Having participants from different sectors (e-commerce, education banking) enhances the richness of the data and transferability. Identifying recurring issues across sectors, such as poor context recognition or lack of empathy, supports the notion that these problems are not specific to any one sector (Graham et al. 2025). Sector-Specific Needs: Chatbot expectations differ by sector. Retail users prefer fast, personalized answers, while banking customers prioritize security. Each sector presents unique user expectations and challenges (Fan et al., 2023). The varied sections reveal common patterns and unique issues, enhancing the practical value of recommendations.

RESULTS

12 interviews were conducted to examine customer experiences, challenges, and perceptions about AI chatbots. Analysis of the interviews revealed four dominant themes contributing to user dissatisfaction:

Theme	Description	Number of Codes	Examples
Misunderstanding Customer Queries	Chatbots frequently fail to grasp the intent behind customer queries, especially when phrased in non-standard ways.	12	1. P6: "Instead of helping me track my order, the chatbot kept telling me to go to the FAQ section which made tracking my order on a shopping site impossible. I kept rephrasing my question, but it still didn't understand that I needed specific delivery details." 2. P1: "The chatbot was asked a question about a service that wasn't covered by the chatbot scope. The chatbot answered with a default answer stating that I should contact the customer services agent, and they shall provide me further details as chatbot doesn't have any information." 3. P5: "I inquired, "Why was my latest transaction rejected?" The chatbot kept telling me, "There are a number of reasons why a transaction may be declined. Please verify your balance or contact the support." But I wanted to understand why my transaction failed."
Inaccurate or Incomplete Responses	Responses are often vague, generic, or unrelated, leading to confusion and lack of problem resolution.	12	1. P2: "Yes, I recently asked the chatbot about countries listed with letters V, the prompt response was correct and mentiome,4 countries, I replied to the prompt that how many words are mentioned in your response and chatbot got confused and mentioned the wrong numbers. I replied that your answer is incorrect and chatbot response was confusing and response was "you are right to challenge me, let me count again carefully" and the response was again wrong, I pushed the challenge

			further and replied your response is incorrect. Kindly go through the screenshots for details." 2. P10: "Yes, one time I asked, "Can I return this if it was a gift?" and the chatbot responded with "We appreciate your interest in returns. Here is our return policy…" It didn't actually address my specific situation." 3. P4: "I was trying to see what the last day is for withdrawing from a course without penalty, and the chatbot was sending me to a generic academic calendar instead of providing me with the exact date for my program."
Lack of Emotional & Personalization	Chatbots often deliver robotic and non-customized replies, lacking human warmth or sensitivity.	11	1. P3: "An example of a chatbot's response feeling unnatural or confusing could occur if it uses technical language when responding to a simple question. For instance, if a user asks, "What's the weather like today?" and the chatbot responds with, "According to the meteorological data, atmospheric conditions indicate a likelihood of precipitation accompanied by a significant drop in temperature," the user might find that response unnecessarily complicated and confusing. A more natural and effective would be, "It's rainy today."" 2. P11: "I once asked, "Can I talk to an agent?" and the chatbot responded, "I can help you with that!" but then didn't give me an option to connect with a human. It felt misleading." 3. P6: "Although the chatbot's answers were polite and well-organized, it sometimes gave unspecific responses unhelpful answers. Rather, it felt like reading a machine-generated text instead of engaging in an actual communication."
Security and Privacy Concerns	Users express distrust regarding how chatbots handle, store, or use personal and sensitive data.	10	1. P1: "Yes, I do have serious reservations and concerns. Using an online or third-party chatbot for helping in my personal professional day-to-day activities enables the chatbot platform to have in depth knowledge about my business, operations, my challenges etc and that can be a serious threat in terms of security and data and information privacy and security. Localized AI chatbots can answer that

			but a huge investment Is needed in this regard for an individual." 2. P5: "Yup. What worries me most is how safe the chatbot system is and whether my chat history is saved because this is my financial data." 3. P12: "Yes, I'd like to know how my data is being stored and whether it's used to improve AI models."

These answerers highlight chatbot issues like inaccurate and incomplete responses, misunderstanding the context, and unhelpful responses. Additionally, many participants have expressed frustration with the chatbot due to lack of customization and disability to handle specific queries. Security and privacy are also important aspects to the users, specifically financial information and transactions. On the other hand, participants confirmed that chatbot has some advantages basically in simple inquiries, however, participants prefer human agents rather than chatbots in problem-solving issues, highlighting the need to enhance AI comprehension, contextual issues, and stronger data privacy protection.

Recommendations Based on Findings

Based on the study findings, the following are practical steps to enhance AI-powered chatbot engagement and customer service satisfaction:

Enhancing Contextual Understanding and Response Accuracy

Building expert systems requires detailed understanding of the user's intention, which can be handled through advanced Natural Language Processing (NLP) and AI technologies. By employing these techniques, chatbots can grasp user inputs, resulting in better interactions. Also, real-life conversations should be used instead of predefined datasets to improve the effectiveness of chatbots. This ensures that the bots reduce repetitive phrases and become more attentive. In addition, chatbots should be more proactive and avoid responding to anything and everything with irrelevant or generic phrases. Doing so greatly enhances the accuracy of operational responses, in addition to making the conversation more enjoyable and user centric (Adamopoulou & Moussiades, 2020).

Enhance Personalization and Emotional Intelligence

Providing chatbots with access to specific customer information such as their past interactions and preferences is necessary for further chatbot personalization and effectiveness. Using these databases, chatbots can respond more efficiently and improve overall customer satisfaction and user experience. Additionally, the use of emotion detection algorithms can improve chatbot communication effectiveness as well. By using this technology, a bot's speech can be altered to match the user's emotional state and make interaction appear more sincere and warm. This strategy ultimately will enhance trust in AI customer support systems (Purington et al., 2019).

Ensure a Smooth Handoff to Human Agents

To increase the efficiency of customer service, chatbots must allow users to easily transition to human agents so that users are not left waiting and becoming annoyed. Also, human workers must be able to view previous interactions with the chatbots to facilitate the flow of conversation. This way, users do not need to be asked the same questions multiple times, which makes service better. There also needs to be an appropriate division of labor between chatbots and human agents. Chatbots should handle basic queries and simple transactions, whereas complex issues and complex decision-making should be reserved for human agents. With this logical division of responsibilities, businesses can be as efficient as they desire and keep customers satisfied (Poser et al., 2021).

Strengthen Security and Privacy Measures

Clear communication about how a user's data is being handled is key to obtaining trust for chatbots. Every business needs to be clear regarding how they collect, save, and use customer information. They are also expected to assure the users that strong privacy measures are put into safeguarding their information. Moreover, the option to remove chat history should be made available to users to enhance their control over their data with the intent of improving privacy. In addition, chatbots must improve the AI model's answers based on actual human interaction on a regular basis. This allows the resolution of routine issues and many important disputes. All these improvements not only enhance the security surrounding data, but trust the use of ethics in AI technology, thus improving confidence in automated customer service systems (Kausar, 2024).

Continuous Improvement through User Feedback

To boost the performance of chatbots and customer experience, companies have to embed feedback mechanisms that allow users to interact with the chatbot while giving feedback during the interaction. The design and functionality of the chatbot can be improved with the collection of user feedback. In addition, the AI models need to be refreshed often so the AI-driven chatbots can generate better answers to especially troublesome questions that customers have. By analyzing repeated issues, modifying their dialogue control systems, and establishing new "problem-solving" skills, chatbots can improve not just in finding solutions, but in providing accurate answers. Moreover, routine tests and audits are essential for detecting performance issues, complying with quality benchmarks, and enhancing the general precision of the bots. All these measures are particularly useful since they improve the performance of customer support based on artificial intelligence, which makes systems more efficient and increases customer satisfaction (Pum, 2022).

If companies apply these recommendations, they will enhance the effectiveness, usability, and trustworthiness of the AI chatbot, which will increase customer satisfaction and engagement.

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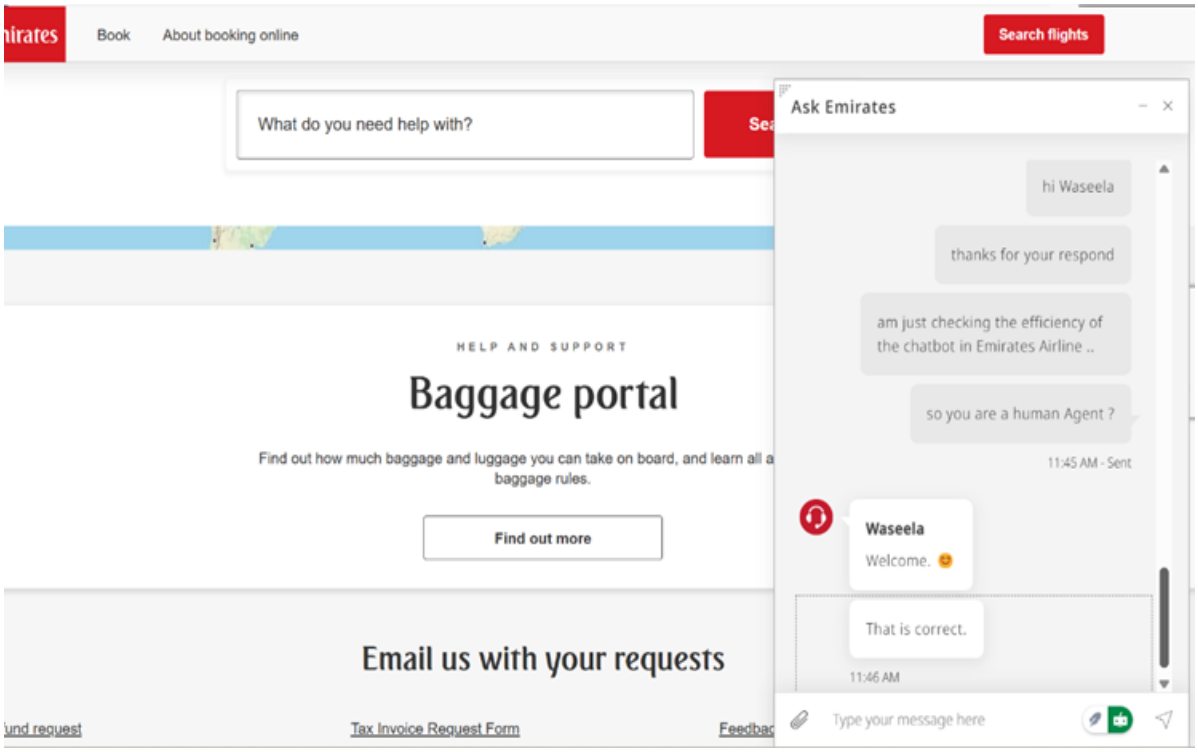
Case Example (Good Implementation):

For example, Emirates Airlines demonstrates the use of the study's findings on their website. Emirates implemented chatbot system supports a variety of languages and provides real-time updates on flights, demonstrating theme 1 accuracy Misunderstanding Customer Queries: Emirates clearly understands "input" user queries. It gives Theme 2 accurate context, trustworthy information, and personalization with respect to the profiles of the passengers (Theme 3). It also tells users how their information is used and how their privacy is safeguarded (Theme 4). These are the very changes participants in our study, particularly the elements of compassion, precision, and data protection in chatbot design. Therefore, Emirates Airlines aligns the airline's practical operations and the themes from the study. (Help | Emirates, 2025).



Limitation and Future Research

We recognize the limitation of this case study due to the small sample size of 12 participants. Nonetheless, the aim was to extract rich narratives from knowledgeable participants from different industries. Qualitative approaches emphasize exploring issues in detail over their representativeness. Future studies should investigate enhancing this research by employing larger samples and mixed methodology to corroborate the qualitative findings.

Conclusion

Overall, the research in this work uncovered four principal reasons for user dissatisfaction, misperception of questions, wrong responses, lack of emotional engagement, and privacy concerns. These findings, based on real user experience, guided our recommendations for AI chatbot corrections. Organizations that want to achieve maximum customer service based on chatbots must address these specific issues to achieve maximum user satisfaction and trust.

AI-powered chatbots offer a great value to organizations in terms of maximizing customer service efficiency; however, to effectively serve the expectations of users, companies must invest to enhance the 'intelligence' of their chatbots, personalize the interactions, and implement secure CRM systems. With automation maximized at operational efficiency, customer-centric activities such as empathetic communication and seamless handover to human representatives shall become essential for long-term user trust and satisfaction.

By pinpointing gaps in the emotionally sensitive and security-critical areas of chatbot communication, this study contributes to the human-AI interaction domain. Through gathering qualitative feedback from various sectors, the study provides framework-based practical recommendations for redesigning chatbots which are more useful, actionable due to their tangible nature. The proposed changes not only fill existing gaps but also bring ethics and user-centric AI development into focus. In the end, the research outcomes help businesses and developers build effective, reliable, empathetic, and user-oriented AI customer support systems which is what adds value to this research.

REFERENCES

Adamopoulou, E., & Moussiades, L. (2020). An Overview of Chatbot Technology. *IFIP Advances in Information and Communication Technology*, *584*(1), 373–383. https://doi.org/10.1007/978-3-030-49186-4_31

Araujo, T. (2018). Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. Computers in Human Behavior, 85(85), 183–189. https://doi.org/10.1016/j.chb.2018.03.051

Arthur. (2016, November 12). Tesco cyber-raid raises serious questions over UK banks' security. The Guardian. https://www.theguardian.com/business/2016/nov/12/tesco-cyber-theft-serious-questions-bank-security

Bickmore, T., Trinh, H., Asadi, R., & Olafsson, S. (2018). Safety First: Conversational Agents for Health Care. Human–Computer Interaction Series, 33–57. https://doi.org/10.1007/978-3-319-95579-7_3

Boden, M. A. (2016). *AI: Its Nature and Future*. Oxford University Press.

Brandtzaeg, P. B., & Følstad, A. (2017). Why People Use Chatbots. Internet Science, 10673(1), 377–392. https://doi.org/10.1007/978-3-319-70284-1_30

Brandtzaeg, P. B., & Følstad, A. (2018). Chatbots: Changing User Needs and Motivations. *Interactions*, *25*(5), 38–43. https://doi.org/10.1145/3236669

Creswell, J. W., & Poth, C. N. (2017). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). SAGE Publications.

Decety, J., & Jackson, P. L. (2004). The Functional Architecture of Human Empathy. *Behavioral and Cognitive Neuroscience Reviews*, *3*(2), 71–100. https://doi.org/10.1177/1534582304267187

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). The SAGE handbook of qualitative research (5th ed.). SAGE Publications.

Fan, H., Han, B., & Wang, W. (2023). Aligning (In)Congruent Chatbot–Employee Empathic Responses with Service-Recovery Contexts for Customer Retention. *Journal of Travel Research*. https://doi.org/10.1177/00472875231201505

Følstad, A., & Skjuve, M. (2019). Chatbots for customer service. *Proceedings of the 1st International Conference on Conversational User Interfaces - CUI '19*, 1–9. https://doi.org/10.1145/3342775.3342784

Global Chatbot Market (2020 to 2026) - Rise in Demand for AI-Based Chatbots to Deliver Enhanced Customer Experience Presents Opportunities | Markets Insider. (n.d.). Markets.businessinsider.com. https://markets.businessinsider.com/news/stocks/global-chatbot-market-2020-to-2026-rise-in-demand-for-ai-based-chatbots-to-deliver-enhanced-customer-experience-presents-opportunities-1030269345

Graham, G., Nisar, T. M., Prabhakar, G., Meriton, R., & Malik, S. (2025). Chatbots in Customer Service within Banking and Finance: Do Chatbots Herald the Start of an AI Revolution in the Corporate World? *Computers in Human Behavior*, *165*, 108570. https://doi.org/10.1016/j.chb.2025.108570

Help |Emirates. (2025). Global. https://www.emirates.com/english/help/?utm_source=chatgpt.com

Hlee, S., Park, J., Park, H., Koo, C., & Chang, Y. (2022). Understanding customer's meaningful engagement with AI-powered service robots. *Information Technology & People*, *36*(3), 1020–1047. https://doi.org/10.1108/itp-10-2020-0740

Jha, N., Trevisan, M., Mellia, M., Fernandez, D., & Irarrazaval, R. (2025). Privacy Policies and Consent Management Platforms: Growth and Users' Interactions over Time. *ACM Transactions on the Web*. https://doi.org/10.1145/3725737

Jurafsky, D., Martin, J. H., Kehler, A., Keith Vander Linden, & Ward, N. (2008). Speech and language processing : an introduction to natural language processing, computational linguistics, and speech recognition. Pearson Education.

Kausar, S. (2024, September 16). *How to Handle Data Privacy Concerns with AI Chat Agents*. Servquik.com; ServQuik Technologies. https://blog.servquik.com/how-to-handle-data-privacy-concerns-with-ai-chat-agents?utm_source=chatgpt.com

Kenneth Mark Colby. (1975). Artificial paranoia; a computer simulation of paranoid processes. New York, Pergamon Press.

Luger, E., & Sellen, A. (2016). "Like Having a Really bad PA": The Gulf between User Expectation and Experience of Conversational Agents. *"Like Having a Really Bad PA": The Gulf between User Expectation and Experience of Conversational Agents*, 5286–5297. https://doi.org/10.1145/2858036.2858288

Poser, M., Singh, S., & Eva. (2021). Hybrid Service Recovery: Design for Seamless Inquiry Handovers between Conversational Agents and Human Service Agents. https://doi.org/10.24251/hicss.2021.144

Press, G. (2023, February 1). *One Negative Chatbot Experience Drives Away 30% of Customers*. Forbes. https://www.forbes.com/sites/gilpress/2023/02/01/one-negative-chatbot-experience-drives-away-30-of-customers/

Pum, M. (2022, June 23). *User Feedback Integration in Chatbot Improvement*. Https://Www.researchgate.net/Publication/387663981_User_Feedback_Integration_in_Chatbot_Improvement.

Purington, A., Taft, J. G., & Ahn, J. (2019). Designing for trust in chatbot interactions. ACM Transactions on Internet Technology, 19(4), Article 43, 1–23. https://doi.org/10.1145/3342558

Radford, A., Wu, J., Child, R., Luan, D., Amodei, D., & Sutskever, I. (2019). Language Models are Unsupervised Multitask Learners. https://cdn.openai.com/better-language-models/language_models_are_unsupervised_multitask_learners.pdf

Scott, R. (2023, October 19). *The Importance of Privacy Considerations in AI Chatbots*. Contact Fusion. https://www.contactfusion.co.uk/the-importance-of-privacy-considerations-in-ai-chatbots-protecting-user-data/

Sun, L. (2017, February 28). *Facebook Inc's Chatbots Hit a 70% Failure Rate*. The Motley Fool. https://www.fool.com/investing/2017/02/28/facebook-incs-chatbots-hit-a-70-failure-rate.aspx

Veale, M., & Zuiderveen Borgesius, F. (2021, July 31). *Demystifying the Draft EU Artificial Intelligence Act*. Social Science Research Network. https://ssrn.com/abstract=3896852

Weizenbaum, J. (1966). ELIZA - a computer program for the study of natural language communication between man and machine. *Communications of the ACM*, *9*(1), 36–45. https://doi.org/10.1145/365153.365168

Zhang, R. W., Liang, X., & Wu, S.-H. (2024). When chatbots fail: exploring user coping following a chatbots-induced service failure. *Information Technology & People*, *37*(8), 175–195. https://doi.org/10.1108/itp-08-2023-0745