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Wilson Ozuem
University of Cumbria
Silvia Ranfagni
University of Florence
Michelle Willis
michelle.willis@roehampton.ac.uk
University of Roehampton

Research Article

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Posted Date: November 12th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11401350/v1

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Additional Declarations: No competing interests reported.

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Professor Wilson Ozuem, University of Cumbria, UK

wilson.ozuem@cumbria.ac.uk

Professor Silvia Ranfagni, University of Florence, Italy

silvia.ranfagni@unifi.it

Dr Michelle Willis **

University of Roehampton

Michelle.willis@roehampton.ac.uk

**Corresponding author

Funding declaration: No funding to be declared

Clinical trial number: not applicable

Informed Consent Declaration: Informed consent was obtained from all participants before data collection. Participants received information about the study's purpose, procedures, voluntary nature and intended use of the findings in academic publications. They were informed of their right to decline questions and withdraw in accordance with the conditions outlined in the participant information sheet. Participants' identities were protected through anonymisation, and any quotations included in the article were presented without identifying information.

Data Availability: The interview data that support the findings of this study are available upon reasonable request from the authors. However, restrictions apply to the availability of these data because they contain potentially identifiable participant information and were collected under ethical approval conditions that do not permit public disclosure. Access to the data is therefore subject to approval by the relevant institutional ethics requirements and the informed consent of the participants. The data may be made available upon request and with the permission of the participants and the relevant university ethics committee(s).

Ethical Approval and Accordance: The study protocol was approved by the UK Management College Ethics Committee (Reference: UKMC-ETH-2023-0004). The research was conducted in accordance with the ethical guidelines and regulations of UK Management College and in compliance with the requirements specified by the approving ethics committee.

Consent to Publish: Informed consent to participate and consent to publish were obtained from all participants prior to data collection. Participants were informed that anonymised findings and non-identifiable quotations may be used in academic publications. All figures and tables are authors own work and did not require third-party permission and had received permission from study participants to publish collected data.

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Abstract

Prior research on chatbot-enabled service recovery offers limited insight into how managerial practices and customer emotions contribute to disengagement. Drawing on 55 semi-structured interviews with managers, frontline personnel, and customers across multiple service sectors, this interpretive study identifies four constructs: conscious dual perception, cognitive offloading, technological embodiment of social presence, and sentiment misalignment. These constructs inform three managerial archetypes: efficiency-focused, risk-averse, and synergy-focused. The findings suggest that disengagement becomes more likely when recovery practices prioritise efficiency, control, or technological capability over customers' expectations for empathy, responsiveness, and social presence. Synergy-focused practices accommodate technological efficiency and relational needs. The study extends AI-mediated service recovery research by explaining how managerial cognitive orientations translate into recovery practices and identifying sentiment misalignment as a mechanism linking these practices to customer disengagement. Effective chatbot-led recovery therefore depends on how managerial practices respond to customers' emotional and relational expectations alongside the technology's capacity to resolve failures.

Keywords: Chatbots, Artificial intelligence (AI), Customer disengagement, Service failure recovery, Managerial cognition, Emotional alignment

INTRODUCTION

Customer engagement underpins firms' efforts to develop, sustain, and deepen meaningful customer relationships in digital service environments (Ozuem & Willis, 2025; Brodie et al., 2011; Hollebeek et al., 2014). As firms embed artificial intelligence (AI) within service delivery, chatbots have become key interfaces for automating customer interactions. These conversational agents simulate human dialogue through text or voice, responding to enquiries with varying personalisation and contextual awareness (Zhang et al., 2024; Ozuem et al., 2024a). Their adoption offers continuous availability, reduced labour costs, and faster responses (Kumar and Kotler, 2024). Yet operational efficiencies coexist with a potentially damaging relational outcome: customer disengagement (Johnson, 2024; Abboud et al., 2023).

Customer disengagement involves emotional, cognitive, and behavioural withdrawal from previously engaged brand relationships (Brodie et al., 2019; Verhoef et al., 2009). Unlike overt dissatisfaction or defection, customers may remain within a service ecosystem while reducing attention, emotional investment, and behavioural resources. Withdrawal can develop gradually through declining responsiveness and diminished involvement, making it difficult to detect. AI-mediated encounters may intensify these tendencies when customers perceive insufficient empathy, contextual sensitivity, or social nuance (Nguyen et al., 2022). Chatbots can therefore deliver functional efficiency while weakening the relational value that engagement sustains.

These limitations become especially important during service failure recovery. Chatbots may struggle to interpret affective cues, resolve ambiguity, or accommodate conversational and emotional expectations. Encounters experienced as impersonal, scripted, or incapable of meaningful dialogue can weaken customer relationships (Pizzi et al., 2023; Ozuem et al., 2025). Mechanistic, repetitive, or insufficiently responsive recovery may extend frustration beyond the immediate encounter, creating emotional distance from the brand (Abboud et al.,

2023; Pillai et al., 2024). However, research provides limited understanding of how managerial cognitive orientations and customer emotional responses jointly contribute to this withdrawal. Disengagement encompasses observable behaviour and less visible emotional and cognitive processes (Meier et al., 2024; Choi and Zhou, 2023). Customers may withhold feedback and advocacy when AI-mediated interactions leave them feeling ignored, undervalued, or disempowered (Abboud et al., 2023). Brodie et al. (2019) distinguish negative engagement, expressed through active dissatisfaction, from negative valence, involving internalised negative affect and cognitive dissonance. In chatbot encounters, responses include emotional withdrawal, digital expressions of dissatisfaction, and interaction termination (Ozuem et al., 2024a). Affective disengagement may also develop when warmth, clarity, or responsiveness is absent without an immediately observable service failure (Meier et al., 2024; Choi and Zhou, 2023).

Existing research can be organised into two broad streams. One examines antecedents and technological conditions, identifying service failures, impersonal communication, limited personalisation, and diminished customer agency as conditions associated with adverse customer responses and potential withdrawal (Tripathi et al., 2022; Johnson, 2024; Adam et al., 2021; Pavone et al., 2023). Constraints in natural language comprehension, user intent interpretation, and rigid decision structures restrict responses to complex or emotionally nuanced problems (Ozuem et al., 2024a; Rese et al., 2020). Huang and Rust (2018) provide a theoretical basis for distinguishing mechanical and analytical capabilities from the intuitive and empathetic capabilities required in emotionally demanding service encounters. Functional competence alone may therefore be insufficient to secure favourable customer responses. Crolic et al. (2022) demonstrate that, among customers entering an encounter in an angry state, chatbot anthropomorphism can heighten expectations and reduce satisfaction, firm evaluations, and purchase intentions. Pavone et al. (2023) further show that customers experiencing chatbot

service failures attribute greater responsibility to the company than those interacting with human agents. These findings suggest that technological shortcomings can acquire relational meaning, with adverse responses extending beyond the immediate interaction to evaluations of the firm.

The other stream examines psychological and relational mechanisms, emphasising empathy, human warmth, and conversational authenticity in shaping customer responses (Nguyen et al., 2022; Pizzi et al., 2023; Araujo, 2018). Research on automated social presence explains why customers' service experiences depend partly on whether technology creates a sense of interacting with another social entity (van Doorn et al., 2017). Adam et al. (2021) further demonstrate that social presence mediates the effect of verbal anthropomorphic cues on customers' compliance with chatbot requests for feedback. Complementing these findings, Luo et al. (2019) show that disclosing chatbot identity can reduce conversational participation and purchases because customers perceive the chatbot as less knowledgeable and less empathetic, despite its objective competence. Customer withdrawal may thus reflect perceived relational inadequacy as well as functional limitations, supporting examination of its emotional and cognitive dimensions (Meier et al., 2024; Choi and Zhou, 2023). These streams inform our examination of disengagement, while leaving open how managerial assumptions about chatbot effectiveness correspond with customers' recovery expectations.

Managers may prioritise efficiency, risk reduction, consistency, or technological integration; customers may seek recognition, emotional understanding, responsiveness, fairness, and social presence. A recovery system can meet managerial expectations while failing customers' emotional and relational requirements. Research nevertheless remains divided between customer evaluations (Crolic et al., 2022; Zhang et al., 2024) and organisational perspectives on AI implementation (Ding et al., 2025; Siaw and Ali, 2024). Although organisational

adoption is increasingly recognised as complex (Manresa et al., 2024), its implications for divergent recovery expectations remain insufficiently understood.

We address two research questions: (1) How does sentiment misalignment between managerial expectations and customer emotional responses contribute to customer disengagement in AI-mediated service recovery interactions? (2) To what extent do managerial cognitive orientations influence chatbot-led service interactions and subsequent customer disengagement during service failure recovery?

The study examines sentiment misalignment as a mechanism linking managerial recovery practices to disengagement. It also explains how efficiency-focused, risk-averse, and synergy-focused managerial cognitive orientations shape chatbot deployment and customer interpretations. This account contributes to debates about AI autonomy, task allocation, and human–AI collaboration (Kumar and Kotler, 2024; Huang and Rust, 2018; Davenport et al., 2020; Raisch and Krakowski, 2021) by examining how technological capacity and managerial reasoning accommodate customers' emotional and relational expectations.

We review customer disengagement and service failure recovery research, then describe the fieldwork and analytical procedures. The findings explain how the three managerial orientations influence chatbot integration and customer responses. We conclude with theoretical contributions, managerial implications, limitations, and future research opportunities.

CONCEPTUAL BACKGROUND

Customer disengagement and chatbots

Customer disengagement is a multidimensional psychological process through which previously engaged customers withdraw emotionally, cognitively, and behaviourally from brand interactions (Brodie et al., 2019; Verhoef et al., 2009). Rather than overt exit, it involves diminishing affective connection, participation, and attention. Antecedents include poor service quality (Johnson, 2024; Abboud et al., 2023), ineffective digital communication (Tripathi et al., 2022; Keeling et al., 2019), and erosion of meaningful interaction. Negative emotional and cognitive responses can precede complaints, negative word-of-mouth, and formal escalation (Ozuem et al., 2024b; Bougie et al., 2003; van Doorn et al., 2010). These responses represent adverse engagement rather than withdrawal alone; covert disengagement includes unsubscribing, terminating chatbot conversations, or abandoning interactive platforms.

Distinguishing adversarial engagement from internalised negative affect helps explain why dissatisfaction does not always produce immediate relationship termination (Brodie et al., 2019). Unresolved cognitive dissonance and emotional disconnection may precede overt withdrawal (Hajli, 2020; Abboud et al., 2023). Vatavwala et al. (2022) identify negative engagement, relationship termination, and psychological distancing. In chatbot encounters, latent disengagement may emerge from limited empathy, warmth, or interpersonal presence (Meier et al., 2024; Choi and Zhou, 2023).

Behavioural disengagement includes withholding feedback, advocacy, and co-creation participation (Vatavwala et al., 2022; Katsifaraki and Theodosiou, 2024). Customers may avoid disclosure or terminate conversations because they question chatbot competence, trustworthiness, or emotional intelligence (Pizzi et al., 2023; Ozuem et al., 2024a). Such responses can reflect unmet psychological contract expectations that erode emotional affiliation (Abboud et al., 2023; Kumar et al., 2010). Although chatbots offer continuous

availability and rapid responses (Ozuem et al., 2024a), impersonal exchanges may create psychological strain. Algorithmic rigidity, privacy concerns, and limited cultural or linguistic sensitivity inhibit trust and engagement (Pillai et al., 2024; Urbani et al., 2024; Pinochet et al., 2024). Inadequate contextual understanding can generate frustration and alienation (Rese et al., 2020; Ozuem et al., 2024a).

Personalised, context-aware responses may reinforce relational value and perceived service quality (Pillai et al., 2024). However, emotional withdrawal may persist when interactions lack warmth, empathy, or social presence (Nguyen et al., 2022). These deficiencies become especially important during service failure recovery, when expectations for affective recognition intensify (Mittal and Singh, 2000). Diminished customer power, opaque decisions, and restricted agency can encourage withdrawal (Abboud et al., 2023). Chatbot encounters may also weaken psychological ownership by reducing belonging, self-efficacy, and control (Scarpi, 2024).

Cognitive effort contributes to disengagement (Verhoef et al., 2023; Abboud et al., 2023). Difficulties interpreting complex queries and emotional subtleties can leave customers feeling misunderstood. Because engagement encompasses psychological investment and behaviour beyond purchase, continued usage alone may conceal declining attention, participation, or emotional connection (Bowden et al., 2015; Brodie et al., 2011; Hollebeek et al., 2014). This is an implication of these conceptual accounts rather than a directly tested detection claim. Customer withdrawal may reflect functional difficulties alongside unmet relational expectations, as evidence on perceived competence, empathy, expectancy violations, and responsibility attribution suggests (Luo et al., 2019; Crolic et al., 2022; Pavone et al., 2023). Effective chatbot interactions therefore require operational efficiency alongside psychological responsiveness.

Chatbot-induced service failure and customer disengagement

The literature on chatbot-induced service failure and recovery highlights several critical domains where chatbots frequently fall short of user expectations, leading to breakdowns in service delivery (Chen et al., 2024; Yu et al., 2024). Zhang et al. (2024) identified a range of recurrent issues, including chatbots' limited capacity to comprehend and accurately respond to user queries, excessive requests for personal or sensitive information, superficial human-like behaviour ("fake humanity"), poor integration with human agents, and an inability to resolve complex or emotionally charged issues. These deficiencies are especially problematic given the growing reliance on service robots across various sectors to deliver frontline customer support.

Service failures involving chatbots are often perceived differently from those involving human agents. Ryoo et al. (2024) found that customers tend to assign less responsibility to service robots for failures, because of perceptions that such technologies have limited autonomy or control. However, this effect is not uniform. As Choi et al. (2021) observed, chatbot failures may evoke greater dissatisfaction when the chatbot demonstrates human-like characteristics. Anthropomorphism, while intended to increase trust and engagement, can paradoxically intensify negative emotional responses to failure. Lteif and Valenzuela (2022) found that failures by anthropomorphised technology provoke stronger feelings of rejection and a heightened desire for human connection, as users interpret such interactions as more intentional and socially meaningful (Choi et al., 2021). Research also recorded that chatbot anthropomorphism may lose its positive mediating effect when customers hold negative cognitive predispositions towards automated agents, and ultimately lower satisfaction and trust in the firm (Sheehan et al., 2020; Crolic et al., 2022).

Chatbots, as automated conversational agents, now play a prominent role in shaping customer engagement and disengagement in digital service environments (Ozuem et al., 2024a). Their widespread adoption has been driven by the promise of operational efficiency, natural language processing capabilities, and cost-effectiveness (Kumar and Kotler, 2024; Chen et al., 2023). In practice, chatbots contribute significantly to streamlining service operations and enhancing routine customer interactions. However, when errors occur, such as providing inaccurate information, misinterpreting user intent, or failing to escalate issues appropriately, these missteps can undermine customer engagement and trigger disengagement (Pillai et al., 2024). To foster employee and customer acceptance of chatbot use, Pillai et al. (2024) stressed the importance of perceived informational accuracy and authentic conversational quality. Operational issues such as inadequate system integration, failure to resolve non-routine queries, and poor alignment with broader service workflows further exacerbate customers' negative evaluations (Chen et al., 2024; Yu et al., 2024). Lee et al. (2023) identified that technical integration challenges, including interoperability issues, data privacy concerns, and biased algorithmic outputs, can also disrupt seamless user experiences and increase frustration.

Pavone et al. (2023) argued that when AI-based chatbots are tasked with managing complex service failures, they can elicit negative affective responses, such as anger and frustration, which often result in customers directing blame towards the firm. Yu et al. (2024) further explained that service request rejections by chatbots are interpreted by users as a lack of effort or concern, which contributes to perceived service indifference. Ozuem et al. (2024a) linked chatbot-induced failures to reductions in customer loyalty, noting that emotional responses such as frustration and aggression critically shape both customer satisfaction and technology adoption intentions. In service recovery contexts, in particular, customers may interpret chatbot use as a depersonalised cost-saving measure that signals low relational investment from the firm. In addition, Huang and Dootson (2022) found that delayed disclosure of the availability

of human assistance can intensify customer aggression, especially when users realise that chatbots serve as the default first point of contact in failure recovery (Ozuem et al., 2024a). Collectively, these findings illuminate the complex emotional and cognitive dynamics underlying chatbot adoption and service failure evaluation, from both customer and managerial perspectives.

We summarise these key contributions in Table 1, situating them within the broader context of chatbot-induced disengagement and the evolving discourse on service automation in digitally mediated service environments.

[Insert Table 1 here]

Expectation confirmation theory and frustration–aggression theory

Expectation confirmation theory (ECT) and frustration–aggression theory (FAT) provide a complementary theoretical framework for examining customer disengagement during chatbot-led service failures and recovery interactions. ECT posits that customer satisfaction is shaped by the extent to which post-purchase experiences confirm or disconfirm pre-purchase expectations (Lin et al., 2009). Disconfirmation occurs when service performance fails to meet expectations, thereby triggering dissatisfaction (Ozuem et al., 2024b). Within chatbot-mediated interactions, customers often hold specific expectations concerning responsiveness, empathy, and problem-solving competence. When the actual service experience fails to align with these expectations – for instance, when chatbots misunderstand user intent, offer irrelevant responses, or demonstrate a lack of contextual awareness – customers may interpret the interaction as a service failure (Gelbrich, 2010). This perceived disconfirmation frequently provokes negative emotional responses, including anger, frustration, and helplessness, which in turn activate coping behaviours such as complaints, retaliatory word-of-mouth, or customer revenge (Bougie et al., 2003; Strizhakova et al., 2012; Gregoire et al., 2010).

A growing body of research suggests that the intensity of negative reactions to chatbot failures may be shaped by users' pre-existing expectations (Abboud et al., 2023; Garvey et al., 2023). For instance, Garvey et al. (2023) argued that when users hold low expectations of chatbot performance, they tend to exhibit greater tolerance towards negative outcomes, thereby mitigating adverse evaluations. This position aligns with ECT by suggesting that well-managed expectations can buffer emotional disconfirmation. However, this mitigating effect is contested. Studies by Rajaobelina et al. (2021) and Ozuem et al. (2024a) argued that reduced expectations do not necessarily insulate customers from dissatisfaction or loyalty erosion. Wolverton et al. (2020), in the context of outsourced digital services, highlighted the concept of anticipatory disconfirmation – where users' prior scepticism about the reliability of outsourced or AI-based systems negatively shapes their evaluations from the outset. Given that chatbot deployment often relies on outsourced IT infrastructures and system integrations (Kot and Leszczyński, 2022), such anticipatory beliefs may further intensify perceived service inadequacy and disengagement when expectations remain unmet.

FAT deepens this understanding by focusing on the emotional consequences of goal obstruction. According to FAT, frustration arises when individuals are blocked from achieving desired outcomes, which may escalate into aggression if no effective resolution is perceived (Berkowitz, 1989). In chatbot contexts, failed service interactions prevent customers from achieving core service goals, such as issue resolution, emotional recognition, or reciprocal dialogue; this leads to frustration that may manifest through hostility, complaints, or brand aversion (Azemi et al., 2020). Ozuem et al. (2024a) showed that when chatbot performance falls short of expectations, customers not only experience heightened frustration but also exhibit weakened loyalty and resistance to future chatbot use. Similarly, Zhang et al. (2024) reported that emotional responses, such as anger and helplessness, are prevalent following

chatbot-induced service failures, and serve as precursors to both affective disengagement and negative behavioural intentions.

The integration of ECT and FAT provides a valuable sequential framework for interpreting customer disengagement in AI-mediated environments. Unmet expectations (disconfirmation) lead to frustration, which, if unaddressed, may escalate into aggressive behaviours and eventual disengagement (Crolic et al., 2022). Proactively managing customer expectations, including transparent communication about chatbot limitations, escalation protocols, and the availability of human assistance, can reduce the risk of emotional escalation and reinforce service credibility. Moreover, it is important to extend this lens beyond the customer to include frontline employees. Pillai et al. (2024) emphasised that poorly functioning chatbot systems can also generate frustration among service employees, particularly when staff are expected to compensate for chatbot shortcomings. Such frustration may reduce employee satisfaction and engagement, further undermining the effectiveness of chatbot integration within service ecosystems. Collectively, ECT and FAT offer a robust dual-theoretical lens to understand the cognitive and emotional mechanisms underpinning both customer and employee disengagement. This integrated framework advances theoretical and practical insights into how chatbot-enabled service systems can be designed to align with human expectations, manage emotional responses, and foster sustained engagement in digitally mediated service environments.

RESEARCH DESIGN AND METHODOLOGY

The current study adopted an interpretive qualitative approach to examine how managerial cognitive orientations and customer emotional responses shape chatbot-led service failure recovery and disengagement. Interpretivism treats reality as socially constructed, contextually dependent, and shaped through interaction and discourse (Pernecky, 2016). It examines participants' meanings rather than seeking universal truths (Denzin and Lincoln, 2000; Tracy,

2013). Caputo's (2018) account of cultural plurality and interpretation supports examining how technological transformation reshapes understandings of self, others, and human existence while keeping interpretations open to reconsideration. Reflexivity enables researchers to examine these meanings through introspective lenses and interacting levels of interpretation (Howell, 2013).

Participants' narratives were interpreted within their sociocultural, institutional, and organisational contexts, attending to language, symbolism, power, and situated knowledge (Maxwell, 2013; Van de Ven, 2007). This approach suited emotionally nuanced, technology-mediated service relationships involving customers, managers, and frontline personnel (Ozuem et al., 2024a). Participants' accounts formed the analytical foundation; the research team drew on disciplinary knowledge and contextual awareness to co-construct meaning through reflexive interpretation (Tracy, 2013; Denzin and Lincoln, 2000).

Purposive sampling identified information-rich participants with direct experience of chatbot-led service failure or responsibility for chatbot deployment and recovery (Patton, 2015). Recruitment covered the United States, United Kingdom, Italy, and China, reflecting the research team's university affiliations. Participants represented retail, banking, telecommunications, and healthcare, enabling examination of diverse service expectations, organisational practices, and technological settings. Customers contributed accounts of chatbot encounters, while organisational participants explained strategic reasoning and operational oversight.

Pilot questions were distributed to prospective participants to assess familiarity with AI-enabled service systems and confirm relevant experience (Guba and Lincoln, 1989). These preliminary exchanges informed refinement of the interview protocol, ensuring questions reflected participants' contextual knowledge. The design connected customer interpretations

with organisational perspectives to examine how recovery practices and emotional expectations contribute to customer disengagement across different service environments.

Semi-structured interviews were employed as the primary data collection method, a technique widely recognised for its ability to elicit detailed, experience-based narratives while offering flexibility to follow emerging lines of enquiry (Bryman and Bell, 2015). This format enabled participants to share first-hand experiences with chatbot systems, reflect on customer behaviours, and provide in-depth insights into the affordances and limitations of chatbot technologies from an organisational standpoint. It was particularly effective for generating contextually grounded data that reflected the points of convergence and divergence between managerial reasoning and customer sentiment within AI-mediated service failure and recovery scenarios.

Interviews were conducted by four members of the research team, each meeting participants separately across the four countries. Interviews were recorded using either virtual platforms or digital recorders, with consent, and subsequently transcribed for analysis. The interview process followed two structured protocols. The first, directed at customers, explored emotional responses to chatbot-led service failure and recovery, with a focus on drivers of customer disengagement. The second, aimed at managers and frontline personnel, examined three core domains: strategic intent, emotional positioning, and cognitive orientations towards chatbot integration. Both interview protocols incorporated a mix of open-ended, closed, and prompt questions designed to elicit responses across various thematic categories (Flick, 2006). A total of 55 semi-structured interviews were conducted, each lasting between 40 and 55 minutes, although in two cases with managers, interviews extended to over 1.5 hours (participants' profiles are given in Table 2).

The use of purposive sampling in this context was instrumental in achieving both sectoral breadth and experiential relevance. It enabled the study to incorporate diverse organisational perspectives on chatbot deployment, while also foregrounding the emotional and cognitive responses of customers who had encountered service failures in AI-mediated settings. The interview protocols were informed by an extensive literature review covering chatbot-induced service failure, customer disengagement, and AI integration in service recovery (e.g., Ozuem et al., 2024a; Zhang et al., 2024). The questions were designed to elicit detailed, experience-based narratives that explored participants' perceptions of chatbot effectiveness, emotional reactions to service breakdowns, and strategic responses to chatbot-related disruptions. This interpretive and narrative-oriented methodology offered deep insight into the socially situated, emotionally charged, and context-dependent realities of chatbot engagement in contemporary service environments.

[Insert Table 2 here]

Data analysis and findings

Thematic analysis was conducted using the established method developed by Gioia et al. (2013), which provided a systematic framework for developing codes and themes grounded in participants' lived experiences. This approach is particularly well-suited to exploring cognitive and behavioural responses to chatbot integration during service failure and recovery, from both customer and organisational perspectives. The analysis drew upon semi-structured interviews conducted with three primary participant groups: customers who had experienced chatbot interactions during service disruptions; managers responsible for the strategic implementation of chatbot technologies; and frontline personnel involved in their operational deployment. These individuals offered insights not only into internal decision-making processes but also into customer-facing interactions, thus enabling the study to capture both company-led strategies and observable customer reactions. This dual lens supported a comprehensive

exploration of the interactions between organisational practices and customer expectations in AI-mediated service encounters.

Following an inductive, data-driven process, the analysis began by identifying first-order concepts using the expressed language and meanings shared by participants. These concepts were then systematically grouped into second-order themes that captured recurring patterns in how individuals interpreted and responded to chatbot-led service failures and recovery efforts. These themes were further abstracted into aggregate dimensions, which reflected core constructs that represent company and customer processes within the chatbot recovery context. The results of this analytical procedure are presented in Table 3, which defines the four emergent themes (aggregate dimensions) – conscious dual perception, cognitive offloading, technological embodiment of social presence, and sentiment misalignment – and lists the concepts for each theme. These themes served as the foundation for developing a conceptual framework of the diverse cognitive and behavioural dynamics at play in chatbot-led service failure recovery (**Figure 1)** and informed the classification of distinct managerial orientations, which are examined in the Discussion section.

By employing Gioia et al.'s (2013) approach, this study produced a robust and empirically grounded interpretation of how chatbot technologies are perceived and experienced in service failure settings. The framework developed through this analysis offers valuable insights into the cognitive, emotional, and strategic dynamics that shape both customer disengagement and managerial responses in digitally mediated service environments. Thematic analysis involves reflexivity as well as coding, theming, and interpretation. As with the interpretive approach identified above, reflective “evaluation aligns with inductive research where themes are developed from the data” (Naeem et al., 2023, p. 2). Researchers investigate and explore “patterns and connections between emerging themes in order to reach saturation” (Naeem et al., 2024, p. 12). In this study, through reflective interpretation, four themes emerged

inductively through data analysis in relation to pre-existing theoretical frameworks, which were included in the analysis through coding procedures.

[Insert Table 3 here]

As outlined, this section presents the core themes that emerged from the analysis, which focused on participants' experiences within AI-mediated service failure and recovery contexts. The data yielded insightful findings across two principal areas. First, it revealed how managers and frontline personnel perceive and respond to chatbot-led interactions during service failure recovery, including how such technologies are strategically implemented and managed in practice. Second, the analysis provided rich insights into customers' lived experiences of chatbot-mediated service failures, with a particular focus on the emotional and behavioural dimensions of customer disengagement. The discussion below explores each of the main themes in detail.

Conscious dual perception

Conscious dual perception describes the cognitive capacity to concurrently process and hold two distinct perspectives or evaluative frames within one's conscious awareness. Among managerial participants, this theme emerged as particularly salient in contexts where emotionally charged service failures required a balance between internal emotional responses and externally oriented rational analysis. Managers were often required to make quick yet strategic decisions while simultaneously negotiating personal values, institutional constraints, and the expectations of both customers and team members. This dual awareness was not only cognitive but also affective, involving a dynamic interplay between empathy for customer dissatisfaction and adherence to organisational protocols. Managers frequently described being "torn" between recognising the emotional validity of customer complaints and remaining aligned with procedural guidelines or resource limitations. The tension between emotional responsiveness and operational rationality required a high level of reflexivity and professional

judgement. As Misra et al. (2024) noted, such complexity is intensified in AI-enabled service environments, where automated systems mediate the initial stages of customer engagement, thereby distancing human agents from early emotional cues. One manager reflected on this organisational challenge:

"The theme that emerges in practically all companies is that they do not have a well-structured database. So, you find information distributed across different systems – partial, unstructured – which ultimately makes the system underperform."

Managers' subjective views on chatbots often originate from their personal encounters with the technology. Like consumers, managers have interacted with chatbot services in non-professional contexts and may have found them frustrating, inflexible, or ineffective. These experiences can influence their perspectives when evaluating chatbot adoption within an industry setting. One manager stated:

"The experiences I as a user have had with chatbots have always been extremely frustrating. Airlines or whatever."

Despite such experiences, managerial discourse tends to emphasise the perceived objective benefits of AI technologies, such as improved employee efficiency and cost reduction (Savastano et al., 2024). Consequently, managers are likely to position their decision making around influencing technology adoption and ensuring that chatbot solutions are effectively integrated into existing organisational structures (Urbani et al., 2024). At the same time, managers must also consider that discrepancies in chatbot performance may reduce customer engagement and lead to perceptions that service procedures are inadequate. One manager highlighted this concern:

"*A customer still recognises the added value in the human support they get from our assistance… so we will never replace it, precisely because it is one of the things that customers pay for."*

In many cases, managers draw upon their own personal experiences to assess whether chatbot technologies are aligned with customer expectations and whether they enhance or detract from the overall service experience (Vorobeva et al., 2025). This is illustrated by another manager who contrasted earlier frustrations with more recent generative AI models:

"*The experiences I've had of interacting with artificial intelligence – in the sense of generative models, ChatGPT, which I've also used for professional reasons – are completely different. So, the expectation that I could have something that generates that kind of interaction and content makes me think differently."*

The integration of AI chatbots requires careful strategic planning, particularly in terms of anticipating both the risks and the benefits. New chatbot features must be supported by adequate training and upskilling that allow employees to adapt to evolving technologies – an essential factor in fostering their willingness to adopt and engage with these tools (Urbani et al., 2024). These preparatory actions are critical in ensuring that chatbot platforms are perceived as reliable and are capable of managing complex customer interactions. One manager expressed concern over the inherent unpredictability of large language models (LLMs):

"*With a LLM, unfortunately I don't even know what it looks like on the inside, so I can never 100% guarantee that if you did a test of 1,000 questions, that the 1,001st might mess it up."*

Integrating AI into team-based decision making introduces both challenges and opportunities. Managers and employees are likely to hold differing views on chatbots that reflect varying levels of comfort, trust, and readiness to collaborate with AI systems (Carter and Wynne, 2024). Reskilling and upskilling are necessary to address the emerging demands of human–AI

collaboration (Bresciani et al., 2021). Consequently, managers must navigate differing levels of digital fluency, evolving role identities, and emotional responses towards automation. Their ability to guide transitions and shape effective AI–human team dynamics is crucial (Manresa et al., 2024). One manager articulated this challenge:

"So there's this kind of dualism – in the sense that you appreciate it – but depending on the type of company, putting it into production has to go through a series of steps that, AI or no AI, you have to do every time you introduce new software."

This observation highlights how the introduction of AI into team settings can expose asymmetries in cognition, preparedness, and organisational readiness. These asymmetries can influence team processes, psychological states, and decision-making outcomes in chatbot-enabled service environments. Thus, the most pressing challenges of AI integration are often not technological in nature, but rather human – rooted in how organisations manage change, expectations, and the evolving relationship between people and machines.

Cognitive offloading

Cognitive offloading refers to the process of transferring mental tasks to external tools or environments to reduce cognitive load on the individual. It is broadly recognised as a strategy for minimising mental effort by relying on external aids (Gilbert, 2024). In the context of AI-driven customer service, chatbots that leverage natural language processing and machine learning to simulate human-like interactions and automate repetitive tasks exemplify this principle. Such tools allow human service agents to focus on more complex, high-value activities (Mariani and Dwivedi, 2024). One manager described how their company's chatbots were integrated throughout the customer service process:

“The autonomous agents here do more inward, or just the end-customer experience … on the site the agent autonomously entertains a relationship with my customer ... And I, who have created that agent, am not required to stand there and monitor the conversation.”

However, despite these operational efficiencies, the integration of AI chatbots presents challenges at both managerial and policy levels. Misra et al. (2024) discussed the tension between the inherently rigid structures of public organisations and the dynamic, adaptive environment required for AI innovation. A conflict often arises from concerns about system reliability, service sufficiency, and the misalignment between expectations and chatbot performance, as one participant noted:

“The main problem with chatbots is that people thought it could do everything when it couldn't.”

Despite such concerns, some managers exhibit resilience in adapting to technological change. Resilient managers are more likely to reframe technological disruption as an opportunity rather than a threat and proactively engage in optimising chatbot utility (Sofyan et al., 2024). For instance, one participant acknowledged the chatbot’s capacity to reduce call volumes while also highlighting their effort to complement it with existing digital resources:

“*We activated [the chatbot] basically to try to drastically lower the calls more than anything else ... we had already implemented a FAQ section in all four sites and already calls had lowered a little bit.”*

A key issue raised by managers was the cautious stance towards generative AI, particularly regarding the level of control that should be delegated to autonomous agents. Some participants expressed hesitance to implement generative features due to the perceived risks involved. One manager stated:

"The limits of the chatbot … ours today is not generative and to make it generative today, however, could be risky and complex."

This highlights a broader concern regarding the stability, transparency, and predictability of advanced AI technologies. While generative AI may increase the chatbot's capability and human-like interaction (Mariani and Dwivedi, 2024), it also introduces the potential for blame being attributed to a human agent when errors occur (Arnestad et al., 2024). Such tensions are reflected in another participant's remark, which indicated a preference for external tool integration over full reliance on generative chatbots:

"Generative chatbots – there's no point anyway … we saw so much value in integrating external tools, so enterprise tools, right? Which then allow a continuity of data, which is the important one."

This comment illustrates a key managerial consideration: maintaining stability and control in an increasingly AI-driven service environment. While chatbots are widely seen as effective in optimising customer-facing processes, many managers remain committed to preserving human oversight, particularly when it comes to decision making and service quality assurance:

"*We will still need people who have the knowledge and who can still supervise and manage these systems … if 100 people were needed before, maybe 10 will be needed now. But I don't think they will be zero."*

These statements suggest that managers view human intervention as essential to the ongoing monitoring, governance, and ethical use of AI chatbots. The issue extends beyond internal decision making to concerns about the wider social and regulatory implications of AI in service environments. One participant reflected on this broader dilemma:

"How do you regulate a world where actually humans are sidelined and there are machines that relate to each other? They've already done some experiments just on LLMs and they've

shown, for example, models driven on data that come from a world made purely of data generated by these models themselves is a world that leads to instability."

Such reflections emphasise the importance of balancing efficiency with governance in AI integration. While cognitive offloading can reduce effort for both employees and customers, the overreliance on AI systems as external scaffolding – without adequate planning or alignment with organisational values – can result in disengaged customer experiences and diminished service quality (Wenzl and Schultheis, 2024). Therefore, strategic planning, ethical reflection, and sustained human oversight are essential to ensuring that AI chatbot deployment not only reduces cognitive burden but also maintains trust, transparency, and organisational integrity.

Technological embodiment of social presence

The concept of technological embodiment of social presence explores how technology, particularly AI-driven chatbots, can simulate and integrate elements of human presence within service interactions. Social presence refers to the degree to which users experience a sense of sociability, interpersonal connection, and emotional resonance during interaction with a technological agent (Wang et al., 2025). However, these perceptions shift significantly in contexts involving service failure and recovery, where the limitations of chatbot systems become more apparent.

When chatbots fail to comprehend or resolve complex issues, especially those involving emotionally or commercially sensitive matters, users may experience increased frustration and disappointment. Such scenarios reveal the limitations of AI in replicating the relational nuances of human communication (Zhang et al., 2024). One participant described this shortcoming in the context of complex business-to-business interactions:

"Making it available and obvious that a similar request, if not the same one, has already been made would be useful from a technical point of view … but also from a commercial point of view … we today are not able to connect the dots … the only way we can know this is by sending out big e-mail."

Service failures involving chatbots are often perceived differently from those involving human agents. According to Ryoo et al. (2024), users tend to attribute less responsibility to chatbots for service breakdowns because they perceive chatbots as having limited control over their actions. However, this leniency diminishes when chatbot interactions obscure the availability of human support. For instance, delayed disclosure of the option to escalate to a human agent can provoke customer aggression, thus reinforcing the need for transparency and seamless escalation protocols (Huang and Dootson, 2022). As one participant emphasised:

"If the agent is in difficulty, let's say, it can decide to have a human intervene, as can happen classically in chat rooms where you press 9 to talk to Manuel. Then depending on the issue, the agent might say, OK, this is an administrative issue, I'll pass it on to the agent who is an expert in administration – the agent that is the human being."

Rather than positioning AI as a substitute for human labour, several participants advocated for a collaborative model that integrates human and chatbot agents. This hybrid approach can improve efficiency while preserving the relational strengths of human agents. Research by Le et al. (2025) supports this view, showing that visible collaboration between digital and human employees can enhance customer perceptions of teamwork and increase satisfaction. One participant reflected on this potential:

"We have people who are very qualified … but who often answer questions that are perhaps trivial, simple, that in any case require an answer from an engineer … I see high potential for a tool that can at least collect requests … I think that a tool such as a chatbot could be of help

in filtering, skimming the questions and giving a first-level answer, possibly referring the requests that inevitably have to be handled by a technician or a qualified person."

Yet, promoting AI capabilities too aggressively can elevate consumer expectations to unsustainable levels, especially when it comes at the expense of human capital investment. Vorobeva et al. (2025) noted that excessive emphasis on technological innovation can lead to customer disengagement if human touchpoints are perceived to be devalued or removed. This concern was echoed by a manager who questioned the sustainability of large-scale AI investments:

"At the moment we are talking about crazy investments, not sustainable for a structure like ours. On the other hand, I would never see a total replacement for, I don't know, reception, things like that, on the service side anyway. I always see a human figure."

In service recovery contexts, integrating chatbot systems within a human–digital collaborative framework – where service tasks are intelligently distributed between AI and human agents – can help mitigate customer frustration and disengagement. One manager recounted a successful implementation in a hospital setting:

"The end customer finds that they can have round-the-clock, professional, empathetic answers … not tied to the mood of the service rep … In America we did an implementation in a hospital, and there was a very high satisfaction rate … it took away bureaucracy from the doctors, the doctors had more time to be with the patients, and the patients were therefore happier. So it created this virtuous circle just in helping the doctors with the agentification part."

This account illustrates how chatbots can complement human service providers by managing routine and administrative tasks, thereby enabling human agents to focus on emotionally demanding or high-stakes service interactions. Ultimately, this theme underscores the importance of strategic integration, where chatbot technologies enhance – not replace – human

strengths, thus contributing to reduced customer disengagement and more resilient service systems.

Sentiment misalignment

Sentiment misalignment refers to the discrepancy between managerial and customer perceptions of chatbot functionality and effectiveness. This divergence significantly influences expectations, emotional responses, and satisfaction across both groups (Tremblay and Parent-Rocheleau, 2025). While managers and customers may both value certain chatbot functions, their prioritisation often differs, which contributes to a mismatch in anticipated and actual experiences. When chatbots fail to meet customers' expectations, especially in service recovery contexts, the customers may perceive the organisation as failing to deliver core service promises. One participant articulated the range of conflicting user sentiments:

"There are people who argue that, actually, the humanity of the chatbot sometimes can even annoy the customer, and others who argue that it's almost essential for the customer to accept and also be satisfied post-interaction with the chatbot."

While chatbots can satisfy users' desire for immediacy and convenience (Fotheringham and Wiles, 2023), failure to address queries effectively can lead to frustration and emotional disengagement. Such negative valence contributes to a growing misalignment between user expectations and service experiences. In time-sensitive or emotionally charged interactions, customers may find overly empathetic or human-like chatbot behaviour unhelpful, especially if it delays access to practical solutions. One participant described their frustration with generic, standardised chatbot interactions:

"I think it would irritate a lot, I mean if the only channel was to go on our site, report the issue, then see a chatbot answering, 'yes, ok, you're in the queue, in a few moments maybe we'll consider it.'"

Overhumanising chatbots can also elevate user expectations to unrealistic levels, thereby creating dissatisfaction when the technology fails to resolve complex issues. One participant reflected on the risk of misrepresentation:

"I wouldn't want to create the illusion that they are talking to a human operator, but that they are using a service that will try to have the best possible response – possibly from a human operator."

This illustrates how sentiment misalignment may stem from a perceived organisational overpromise, where the sophistication of the chatbot's presentation is not matched by its problem-solving capabilities. As one manager succinctly noted:

"Empathy is important, but only if it is combined with solving the customer's problem. If [the bot] can't solve it, it has to defer to a human. Otherwise, the bot's empathy could be almost counterproductive."

A critical aspect of addressing sentiment misalignment lies in detecting and responding to negative emotional cues that emerge during chatbot interactions. Sentiment analysis tools can support this process by flagging emotionally charged language and facilitating timely escalation. One participant explained how such tools were deployed in their organisation:

"*With sentiment analysis, we tried to prioritise the requests where we saw the slightly more negative mood. We prioritised them and passed them on to the operator … you hardly solve it automatically anyway, so you need that human touch."*

This example underscores the value of hybrid approaches that integrate automated detection with human empathy to minimise frustration and aggression. Another participant noted that customers often express more negativity during chatbot interactions than they would with a human agent:

"They also write those things that maybe they wouldn't write to a person, or they complain maybe about the behaviour of people – with the chatbot."

The perceived anonymity of interactions with chatbots and chatbots' lack of judgement may make users more candid; this could offer rich insights into pain points and service gaps. These interactions can inform service improvement efforts if effectively monitored. One participant described the importance of escalation pathways and social integration features to maintain positive user experiences:

"Provide escalation to the human operator because it's important precisely not to make the experience worse ... there was a whole series of features to the social integrations that were important ... one thing and another that obviously multiplied the customer service touchpoints."

Another participant highlighted the analytical value of tracking chatbot interactions as a tool for agent training and system optimisation:

"Certainly, one thing we do is still allow you to verify these patterns – in the sense that we have the tools to keep track of the conversations that have taken place internally ... One can go and see, for example, how many times customers got angry rather than how many times they asked a question that was not covered by the agent. This helps you a lot to reskill the agent or to increase their capabilities ..."

Monitoring customer–chatbot exchanges is thus essential not only for identifying patterns of disengagement and dissatisfaction but also for improving chatbots' capabilities and performance. These data-driven insights can help organisations recalibrate chatbot functions, refine escalation processes, and train systems to better respond to users' evolving needs. Ultimately, minimising sentiment misalignment requires aligning chatbot design with both

emotional intelligence and technical competence to ensure that customer expectations are met while enhancing overall satisfaction and engagement.

DISCUSSION

Building upon the thematic analysis outlined above, a further interpretive layer of analysis was conducted to explore the underlying psychological orientations and behavioural dispositions of managers embedded in the interview data. This stage of analysis aimed to go beyond surface-level coding by identifying patterns in managerial reasoning, emotional positioning, and strategic intent that shape their responses to chatbot integration in service failure and recovery contexts. The analysis revisited the four emergent themes – conscious dual perception, cognitive offloading, technological embodiment of social presence, and sentiment misalignment – to identify consistent patterns across participants. These patterns were coded and clustered based on recurring expressions of strategic priorities, emotional attitudes, and managerial concerns. Through this inductive process, three distinct managerial categories were constructed: efficiency-focused, risk-averse, and synergy-focused managers (see **Table 4**).

These categories capture the varying orientations through which managers assess and respond to chatbot implementation. The efficiency-focused manager typically prioritises automation, cost-effectiveness, and speed; they often champion chatbots as tools for streamlining operations. The risk-averse manager is marked by caution; they express concerns about technological reliability, reputational risk, and customer dissatisfaction. Meanwhile, the synergy-focused manager adopts a more integrative stance; they view chatbot technologies as augmentative tools that can work alongside human agents to enhance both operational capacity and customer experience. The conceptual framework presented in **Figure 1** illustrates how these managerial categories relate to the four themes and highlights the diverse cognitive and behavioural dynamics at play in chatbot-led service recovery. The model captures how managers construct meaning from their experiences with chatbot systems, balancing

organisational imperatives with perceived customer needs, emotional cues, and prior experiences with AI technologies.

This framework challenges traditional linear conceptions of chatbot deployment, which often assume homogeneity in managerial intent or customer response. Instead, it highlights the complex, emotionally influenced, and context-dependent nature of decision making in AI-mediated service environments. The model demonstrates that successful chatbot integration depends not only on technological capability but also on how organisations manage internal expectations, emotional reactions, and the relational consequences of chatbot-led interactions. By foregrounding the diversity in managerial cognition and customer interpretation, this framework contributes to a more comprehensive understanding of how chatbot systems are embedded within the social, emotional, and strategic dimensions of service delivery. It provides critical insights into how managers navigate the intersection of technology, organisational practice, and customer engagement under conditions of service disruption and recovery.

Efficiency-focused manager

Efficiency-focused managers (EF) adopt a forward-looking, strategic stance towards chatbot integration; they view AI implementation as a means of achieving long-term operational transformation, particularly in the context of service failure and recovery. These managers plan proactively for future organisational gains, while recognising the immediate technical, emotional, and institutional challenges that chatbot deployment may entail. Acknowledging integration complexities, such as language misalignment, system incompatibility, and customers' evolving expectations (Lee et al., 2023; Pillai et al., 2024; Ozuem et al., 2024a), EF managers work to embed chatbots sustainably within service recovery processes. They prioritise effective employee training and organisational adaptation to ensure that chatbot adoption is not perceived as a temporary fix but as a long-term value-adding solution. As noted by Urbani et al. (2024), such efforts contribute to building internal support and technological

readiness across departments. Central to this orientation is the strategic use of cognitive offloading. EF managers actively delegate repetitive or high-volume interpersonal service tasks to chatbots, thereby enabling human employees to focus on functions that require critical thinking, empathy, or creativity. They are particularly receptive to chatbots with advanced natural language processing and machine learning capabilities (Kumar and Kotler, 2024), which can automate first-tier recovery tasks and improve responsiveness. This reduces customer cognitive strain and improves perceived service quality (Ryoo et al., 2024), while also enhancing the efficiency of back-end service teams.

Despite a strong emphasis on automation, EF managers value humanised chatbot interactions; they expect AI systems to mimic human conversational patterns while delivering effective resolution. They are acutely aware of the reputational and emotional risks associated with poorly implemented human-like bots, especially in emotionally charged service recovery scenarios (Lteif and Valenzuela, 2022). To mitigate such risks, EF managers endorse the use of advanced sentiment detection systems to pre-empt customer frustration and trigger escalation pathways when needed. This helps maintain a careful equilibrium between operational efficiency and customer satisfaction. Moreover, EF managers are proactive in managing customer expectations. They recognise that misaligned perceptions of chatbot capabilities can lead to dissatisfaction and disengagement. To address this, they focus on transparent communication – clearly articulating what chatbots can and cannot do. Where necessary, they adapt customer messaging strategies to ensure that interactions align with users' emotional and functional expectations. This approach underscores their commitment to balancing technological scalability with meaningful customer outcomes.

Risk-averse manager

Risk-averse managers (RA) adopt a cautious, analytical approach to chatbot deployment; they are driven by a need to minimise uncertainty and ensure alignment with established service

protocols. Their scepticism often stems from personal experience or observed limitations of chatbot performance, which mirrors concerns voiced by customers and employees (Ding et al., 2025). Nevertheless, RA managers acknowledge the potential of chatbots to optimise specific aspects of service delivery, especially when supported by robust data. Their decisions are typically guided by empirical evidence, regulatory compliance, and performance benchmarks, rather than speculative benefits. RA managers emphasise rigorous testing, validation, and gradual implementation. They are particularly attentive to the regulatory and ethical implications of chatbot usage; they seek to minimise risk through alignment with data protection laws, cybersecurity standards, and internal policy frameworks. According to Sofyan et al. (2024), such managers demonstrate resilience when institutional constraints are addressed and confidence in technological control is established. Selective adoption is a hallmark of RA managerial practice. These managers often favour low-risk, high-certainty chatbot applications for predictable, policy-bound tasks where customer expectations are clearly defined and escalation pathways are minimal. They are less likely to embrace generative or human-like chatbot features, which are perceived as increasing the potential for miscommunication, service errors, or reputational damage.

Emotional considerations also shape RA managers' approach. While they may focus on short-term benefits, such as cost savings, faster response times, and automation of basic queries, they remain acutely aware of the emotional cost of poor chatbot performance. Studies show that customers may attribute errors in AI systems to human oversight or managerial negligence, particularly when chatbots are anthropomorphised (Arnestad et al., 2024; Wang et al., 2025). To avoid such a backlash, RA managers prefer chatbot systems that clearly differentiate automated and human responses, thus protecting customer trust and organisational legitimacy. RA managers favour conservative, well-regulated chatbot implementation strategies that limit exposure to service failure risks, avoid overpromising technological capabilities, and maintain

compliance with institutional expectations. Their focus is on minimising disengagement through predictability and transparency, rather than maximising innovation.

Synergy-focused manager

Synergy-focused managers (SF) operate from an empathetic and collaborative perspective; they prioritise social presence, emotional intelligence, and the humanisation of service experiences in AI-mediated environments. Unlike EF and RA managers, SF managers do not view chatbots as replacements for human agents, but as complementary tools that support service delivery while preserving human oversight. This perspective aligns with findings by Le et al. (2025), who noted that customer satisfaction increases when AI–human collaboration is visible and well-integrated. SF managers are particularly sensitive to the interpersonal limitations of chatbots, especially in emotionally complex service recovery situations. They exhibit a cautious attitude towards generative AI, given its potential for unintended bias and opaque decision making (Asante et al., 2024). Rather than fully automating service encounters, SF managers advocate for co-deployment, where chatbots handle routine tasks but escalate sensitive issues to trained human agents. This mitigates the risk of customer alienation and ensures that critical moments are managed with empathy and discretion. Their decision making reflects a commitment to safeguarding customer expectations. SF managers anticipate that customers may seek real-time access to human support during emotionally charged exchanges, and they structure service flows accordingly. They also prioritise emotional continuity – ensuring that customers feel supported throughout the service journey, even when transitioning from chatbot to human agent.

Furthermore, SF managers promote digital–human collaboration within internal teams. They facilitate role clarity, coordination protocols, and shared accountability between digital tools and human agents. This synergy enables adaptive service recovery practices where chatbots manage information flow and triage tasks, while humans provide judgement, empathy, and

resolution. As research shows, this kind of collaboration reduces customer frustration, enhances perception of competence, and limits sentiment misalignment (Lee et al., 2025). SF managers are also attuned to the dangers of overpromising AI capabilities. When chatbot functions are oversold, customers may develop unrealistic expectations that result in greater disappointment and disengagement if those expectations are unmet. To counter this, SF managers prioritise clear, honest communication and ensure that the strengths and limitations of chatbot systems are transparently conveyed. Their approach focuses on balancing empathy with realism, thereby promoting sustainable and trust-based customer relationships.

The main focus of our study was to extend existing research on how managerial cognitive orientations and customer emotional responses influence chatbot-led service failure recovery and contribute to customer disengagement. Our findings revealed three distinct levels of managerial engagement with chatbot-led interactions during service failure recovery. **Table 4** provides a critical synthesis of these managerial archetypes – efficiency-focused, risk-averse, and synergy-focused – which emerged from the interpretive analysis. These categories illustrate how different cognitive orientations shape chatbot deployment strategies in service failure and recovery contexts. **Table 4** serves as a comparative framework that outlines the facilitating factors, key challenges, and outcomes associated with each managerial type; it offers insight into the strategic reasoning that underpins chatbot adoption and implementation. The value of the table lies in its ability to challenge a one-size-fits-all approach to AI integration. It demonstrates that chatbot deployment is influenced by a combination of organisational priorities and emotional dispositions, rather than technological readiness alone. For example, EF managers pursue high levels of automation and invest in sentiment analysis tools to enhance autonomous chatbot performance. Risk-averse managers, on the other hand, prefer solutions that minimise disruption to existing systems and rely on data-driven justifications to mitigate perceived risks. In contrast, synergy-focused managers favour a

collaborative human–AI model that maintains empathy and social presence during recovery interactions.

THEORETICAL CONTRIBUTIONS

This study offers three key theoretical contributions to the literature on AI-mediated service interactions, customer engagement, and managerial cognition. First, the study extends existing research by foregrounding the convergence and divergence between managerial cognitive orientations and customer emotional responses within the emotionally heightened context of service failure and recovery. Much of the prior literature tends to isolate either the technical affordances of chatbots or the affective experiences of customers (e.g., Crolic et al., 2022; Zhang et al., 2024). In contrast, this research highlights how misalignments between what managers believe chatbots can achieve and what customers emotionally expect, particularly regarding empathy, responsiveness, and social presence, can significantly influence customer disengagement. This insight addresses the first guiding question of the study by demonstrating that sentiment misalignment is not simply a byproduct of chatbot limitations, but a dynamic and reciprocal disconnection between managerial intent and customer affective needs.

Second, the study introduces a novel typology of managerial cognitive orientations – efficiency-focused, risk-averse, and synergy-focused – which offers a more granular understanding of how managers strategically reason, emotionally position themselves, and act upon chatbot integration during service disruptions. These archetypes reveal how cognitive framing influences decisions around chatbot functionality, escalation protocols, and emotional risk management. In addressing the second research question, the study shows that managerial cognition is not monolithic: it is shaped by institutional context, experiential reflexivity, and perceived customer expectations. This contribution deepens the literature on managerial decision making in digital environments (e.g., Manresa et al., 2024; Ding et al., 2025), where

technology adoption is often influenced by competing imperatives of control, customer satisfaction, and strategic innovation.

Third, by identifying and theorising four interrelated constructs – conscious dual perception, cognitive offloading, technological embodiment of social presence, and sentiment misalignment – the study presents a multidimensional framework that bridges the psychological and operational domains of chatbot-led service recovery. This framework advances understanding of how chatbot systems are interpreted not merely as tools of efficiency, but as emotionally and symbolically charged interfaces that shape both internal (managerial) and external (customer) experiences. In doing so, it challenges deterministic narratives of full AI autonomy (e.g., Kumar and Kotler, 2024) by evidencing that chatbot deployment must be context-sensitive, emotionally calibrated, and strategically positioned within human–technology relationships.

Collectively, these contributions offer a reconfiguration of how AI-enabled service systems should be conceptualised – not as linear progressions towards automation, but as interactive ecosystems shaped by affective dissonance, managerial reasoning, and customer expectations. By bridging emotional, cognitive, and strategic considerations, the study opens new theoretical ground for understanding how human and digital agents co-create service experiences in emotionally complex environments.

MANAGERIAL IMPLICATIONS

Managerial decisions regarding chatbot deployment should be evaluated through a multidimensional lens that incorporates both organisational priorities and customer experience expectations. By synthesising insights from internal strategic objectives and external emotional responses, managers can more effectively align chatbot functionalities with evolving service recovery goals, ultimately mitigating the risk of customer disengagement. This study highlights that managerial decisions do not operate in a vacuum; rather, they are shaped by contextual

variations across industries, organisational structures, and digital capabilities. Consequently, chatbot strategies must be adapted to reflect the complexity and variability of service environments. While the specifics of organisational context will differ, managers are likely to exhibit patterns aligned with one of the three managerial orientations identified in this study: efficiency-focused (EF), risk-averse (RA), or synergy-focused (SF). Recognising and aligning chatbot implementation strategies with these cognitive orientations enables organisations to tailor service recovery initiatives in ways that are both strategically consistent and emotionally responsive. In doing so, companies can advance digital transformation agendas while preserving the relational quality of customer service.

From a broader organisational standpoint, managers across all archetypes must ensure that chatbot deployment strategies remain aligned with brand values, service culture, and customer expectations, particularly in the emotionally charged context of service failure and recovery. A critical implication lies in addressing sentiment misalignment – the disconnect between managerial expectations of chatbot performance and customers' emotional needs. To address this, organisations should implement continuous monitoring mechanisms to assess customer journeys involving chatbot interactions. This may involve selecting chatbot platforms with built-in sentiment analysis, behavioural tracking, and customer feedback loops, which allow managers to refine chatbot scripts, recalibrate escalation protocols, and adjust recovery strategies in real time.

Such dynamic monitoring not only enhances responsiveness but also contributes to the long-term sustainability of chatbot technologies. As customer expectations evolve, particularly in relation to empathy, social presence, and service immediacy, chatbot systems must be periodically re-evaluated to ensure continued alignment with both strategic intent and relational service outcomes. This adaptive approach is essential for maintaining customer trust and preventing disengagement across the customer lifecycle.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

While this study offers valuable insights into the multidimensional constructs that inform managerial orientations towards chatbot integration, several limitations must be acknowledged. First, the study does not differentiate between industry-specific contexts. Sectors such as healthcare, finance, and retail often operate under distinct service failure protocols, regulatory environments, and customer expectations, which may influence both the strategic rationale and emotional considerations behind chatbot adoption. Future studies should explore how the EF, RA, and SF managerial orientations manifest within sector-specific operational realities, thereby enabling more nuanced, context-sensitive applications of the framework. Second, the research does not explicitly examine how organisational size, digital maturity, or structural complexity impact managerial decision making. Larger organisations with mature digital infrastructures may approach chatbot adoption with greater strategic confidence and scalability, while smaller firms or early digital adopters may face resource limitations or implementation hesitancy. Similarly, decentralised organisations may experience fragmented chatbot integration across departments, in contrast to centralised models with unified decision-making processes. These structural distinctions merit further investigation to refine the generalisability of the managerial archetypes.

Third, the study captures managerial orientations at a specific point in time. Given the rapid evolution of AI technologies and shifting customer expectations, longitudinal research is needed to track how managerial attitudes adapt over time in response to emerging challenges, technological maturity, and real-world performance outcomes. Such studies could reveal how managerial orientations transition or converge as firms progress along the digital transformation curve. Finally, future research would benefit from incorporating a multi-stakeholder perspective, encompassing managerial, employee, and customer viewpoints. This would provide a more holistic understanding of the emotional, strategic, and operational

dynamics that shape chatbot effectiveness in service recovery contexts. By examining how different organisational actors interpret, support, or resist chatbot adoption, researchers can generate richer insights into the interpersonal and systemic conditions necessary for successful AI integration in service ecosystems.

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Table 1: Variables of studies of users' negative chatbot evaluations and disengagement: customer and company perspectives

Research stream 1: Company – chatbot integration within service ecosystem						
	Users' negative cognitive evaluation of chatbot	Users' behavioural disengagement	Users' reaction to chatbot communication style	Technical barriers in existing chatbot systems	Users' reaction to chatbot in service failure context	Customer or company perspective
Pillai et al. (2024)	No	Yes	No	Yes	No	Company
Sheehan et al. (2020)	No	Yes	Yes	No	No	Customer
Chen et al. (2023)	No	No	Yes	No	No	Customer
Chen et al. (2024)	Yes	No	Yes	Yes	No	Company
Lee et al. (2023)	No	No	No	Yes	No	Company
Choi and Zhou (2023)	No	No	Yes	No	No	Customer
Meier et al. (2024)	Yes	Yes	Yes	No	No	Customer
Savastano et al. (2024)	Yes	No	No	Yes	No	Company
Ryoo et al. (2024)	Yes	No	Yes	Yes	Yes	Customer
Rese et al. (2020)	No	Yes	Yes	No	No	Customer
Kot and Leszczyński (2022)	No	No	No	Yes	No	Company
Urbani et al. (2024)	No	No	No	Yes	No	Company
Research stream 2: Customer – limitations to customers' interaction with chatbots						
Scarpi (2024)	Yes	No	No	No	No	Customer
Zhang et al. (2024) Ozuem et al. (2024a)	Yes	Yes	Yes	No	Yes	Customer
Crolic et al. (2022)	No	No	Yes	No	No	Customer
Lteif and Valenzuela (2022)	Yes	No	Yes	No	No	Customer
Pavone et al. (2023)	Yes	No	Yes	No	Yes	Customer
Yu et al. (2024)	Yes	No	Yes	No	Yes	Customer
Choi et al. (2021)	Yes	No	Yes	No	Yes	Customer
Pizzi et al. (2023)	Yes	Yes	Yes	No	No	Customer

Table 2: Participants' profiles

Customer participant details				
Participant number	**Age range (years)**	**Job title**	**Experience using chatbots**	**Country**
1	50+	IT consultant	3–4 years	UK
2	36–45	Events coordinator	3–4 years	Italy
3	26–35	Administrative assistant	2–3 years	USA
4	50+	Primary school teacher	2–3 years	UK
5	26–35	Engineer	More than 4 years	USA
6	18–25	Editorial assistant	2–3 years	UK
7	50+	Healthcare consultant	3–4 years	USA
8	36–45	Clinical educator	3–4 years	USA
9	46–50	Office support specialist	More than 4 years	Italy
10	46–50	Art sales specialist	2–3 years	Italy
11	50+	Retired professional	Less than 1 year	UK
12	26–35	Engineer	More than 4 years	China
13	36–45	Exhibition coordinator	2–3 years	Italy
14	50+	School teacher	1–2 years	USA
15	18–25	University student	More than 4 years	China
16	36–45	Paediatrician	2–3 years	USA
17	18–25	Junior project coordinator	2–3 years	US
18	50+	Special education teacher	Less than 1 year	Italy
19	36–45	Psychiatrist	More than 4 years	China
20	50+	Education partner facilitator	1–2 years	Italy
21	26–35	Engineer	More than 4 years	Italy
22	18–25	University student	2–3 years	UK
23	50+	IT consultant	More than 4 years	USA
24	50+	Retired professional	2–3 years	China
25	26–35	Nurse	1–2 years	UK
26	46–50	Accountant	3–4 years	China
27	18–25	Team support officer	2–3 years	UK
28	18–25	Nurse	Less than 1 year	UK
29	26–35	Engineer	2–3 years	China
30	18–25	Social media freelancer	2–3 years	USA
31	18–25	University student	3–4 years	Italy
32	50+	University lecturer	1–2 years	UK
33	26–35	Human resource assistant	3–4 years	Italy
34	50+	Workforce development trainer	3–4 years	UK
35	18–25	Operations assistant	Less than 1 year	UK
Managerial participant details				
Participant number	**Age range**	**Job role**	**Chatbot experience or responsibilities**	**Country**
1	50+	Company owner	3–4 years	Italy
2	26–35	Digital marketing manager	3–4 years	Italy
3	26–35	Communication manager	More than 4 years	Italy
4	26–35	Marketing manager	1–2 years	Italy
5	50+	General director	1–2 years	Italy
6	18–25	Digital marketing manager	3–4 years	Italy
7	46–50	Company owner	1–2 years	Italy
8	50+	Social media manager	3–4 years	Italy
9	46–50	Company owner	3–4 years	UK
10	18–25	Web analyst	3–4 years	UK
11	26–35	Marketing executive	3–4 years	UK
12	50+	Brand manager	More than 4 years	UK
13	26–35	Growth marketing manager	More than 4 years	UK

14	18–25	SEO specialist	1–2 years	USA
15	46–50	Marketing manager	1–2 years	USA
16	26–35	Performance marketing manager	More than 4 years	USA
17	26–35	Digital marketing manager	3–4 years	China
18	50+	Company owner	More than 4 years	China
19	26–35	Marketing manager	More than 4 years	China
20	26–35	Social media manager	More than 4	China

Table 3: Thematic categories

Theme	Definition	Concepts
Conscious dual perception	Conscious dual perception comprises managers' personal experiences with chatbots, including frustration with chatbot limitations, and their evaluations of applying chatbots within a service context. This cognitive process can lead managers to anticipate their customers' chatbot expectations, which may influence managers' expectations of chatbots' service performance	Emotional reflexivity Rational analysis Internal emotional responses External logical analyses Policy and institutional barriers Personal biases Customer and employee expectations Objective advantages
Cognitive offloading	Reflects the cognitive reasoning to delegate service-related tasks to chatbots to optimise mental and operational resources, including human personnel and digital capabilities. Managers assess the potential of chatbots to reduce employee workload and enhance service efficiency, while critically evaluating the risks of overreliance on automation in service failure and recovery contexts	Automate routine tasks Human oversight Natural language processing Machine learning Repetitive tasks Value-added activities Service sufficiency Manager and employee resilience Digital resources and capabilities Organisational readiness
Technological embodiment of social presence	Managers critically assess the level of necessity and impact of embedding human-like qualities into chatbot exchanges. This evaluation involves perspectives on whether anthropomorphic features mitigate negative stimuli or may lead to greater customer frustration	Human-like interaction Empathy Anthropomorphism Complex issues Chatbot transparency Human intervention Human–chatbot collaboration
Sentiment misalignment	Exchanges between customers and chatbots can lead to emotional disconnections. Managers seek to capture customer expectations of chatbots, such as empathy, responsiveness, or problem solving, and critically assess the chatbot's design and capabilities to meet those expectations and reduce potential frustration	Customer frustration Expectation management Standardised interactions Problem solving Sentiment analysis Negative valence

Figure 1: Managerial sensemaking in artificial intelligence-based service recovery

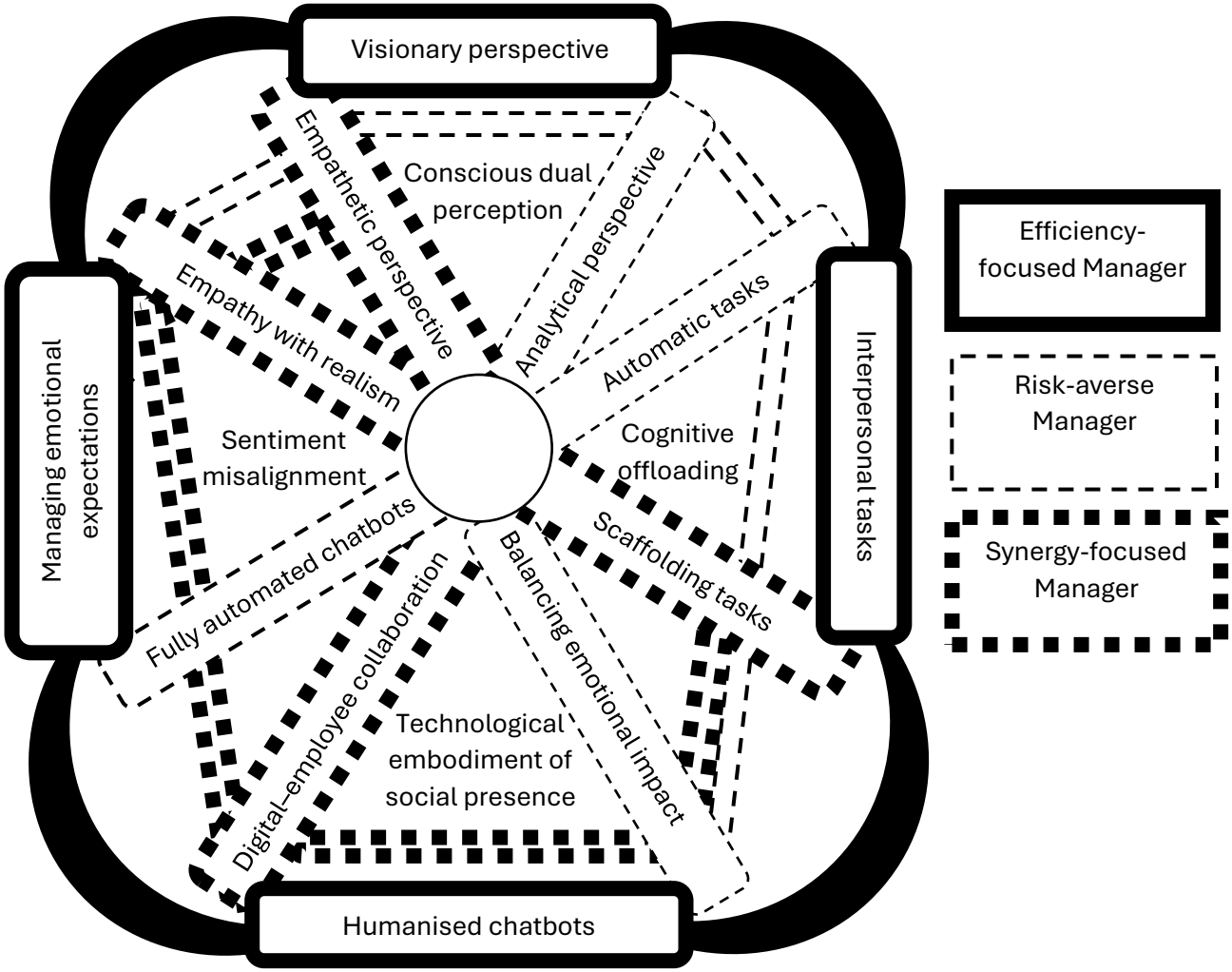


Table 4: Summary of efficiency-focused, risk-averse, and synergy-focused managers

Manager category	Efficiency-focused managers	Risk-averse managers	Synergy-focused managers
Facilitating factors	Motivated by long-term goals; perceive chatbots as a tool to optimise service efficiency and reduce significant reliance on human agents	Have a preference for chatbots that align with existing policies and current organisational infrastructure	Emphasise a need for human involvement throughout chatbot recovery process to portray social presence and emotional intelligence through chatbot-mediated exchanges
Key challenges	Ensuring effective integration of chatbots into service system in relation to natural language alignment, system compatibility, and customers' evolving expectations	Highly sceptical of AI capabilities and will rely on data-driven evidence to justify chatbot selection. Are concerned customers will assign blame to human agents or departments when humanised chatbot errors occur	Highly sensitive to chatbots' ability to handle complex and interpersonal customer exchanges, and cautious of generative AI that is associated with biased algorithmic outputs that create negative impressions
Outcomes	Apply sentiment analysis tools to pre-empt customer frustration, which allows a chatbot to manage service failure and recovery processes with high autonomy	Select chatbots with AI systems that have minimal risk and integration requirements and display more automative responses to reduce perceived humanised presence. Apply chatbots to manage service enquiries with low risk of customer disengagement	Implement a human–chatbot collaborative approach, with distinct service recovery tasks scaffolded across human and chatbot agents