Exploring the Relationship Between Chatbots, Service Failure Recovery and Customer Loyalty: A Frustration–Aggression Perspective

Ozuem, W, Ranfagni, S, Willis, M, Salvietti, G and Howell K

Abstract

An increasing number of companies are introducing chatbot-led contexts in service failure recovery. Existing studies are inconclusive on whether humanlike chatbot-driven service failure recovery enhances customer loyalty. Grounding our work in phenomenological hermeneutics and utilizing frustration–aggression theory, we concentrate on the historical circumstance and the participatory nature of understanding customers' chatbot-driven interactions and loyalty. We conducted 47 in-depth interviews with millennials from four countries (USA, France, Italy and the UK). By analyzing interview data through thematic analysis, our study offers two significant contributions. First, through thematic analysis we define the dynamics occurring between customers and chatbots in a service recovery journey, such as customers' priorities and expectations. Second, we present a chatbot-led service failure recovery typology framework that identifies four types of customers based on their interactions with a chatbot and their emotions, specifically frustration and aggression, and the effects of the interactions on their brand loyalty and intention to use chatbots. The identification of four customer types can help managers shape strategies to effectively turn negative customer experiences into opportunities to strengthen their loyalty, such as making more than one touchpoint available (human and chatbot). Our study shows that customers' emotions, specifically frustration and aggression, affect not only customer loyalty but also technology adoption. The concluding section suggests future avenues for research in the service recovery literature.

Keywords: Chatbots, service failure recovery, ChatGPT, artificial intelligence, customer loyalty, frustration–aggression theory, qualitative research

1. Introduction

Conversational artificial intelligence (AI) agents and chatbots are rapidly transforming customer–brand relationships (Olmez, 2018). Chatbots are expected to alter how customers and brands interact in the service delivery process (Araujo et al., 2022). According to Forbes, the use of AI-powered chatbots increased by 190% between 2018 and 2020, which led to the substitution of standard chatbots with new versions integrated with social media and messaging apps. These responsive and enhanced technologies have shown a major potential to replace human service agents in many of their daily inquiries. A study by Deloitte reported that between 50% and 80% of organizations' contacts with customers will be automated through self-service channels by 2025; Deloitte also reported that the global conversational AI market is expected to reach 14 billion USD by 2025 (Comes et al., 2021). Several industries are exploring these new technologies, each at a different pace and with differing degrees of investment in AI and chatbots. A McKinsey & Company 2022 report on the state of fashion technology revealed that the fashion industry is actively working toward integrating AI technologies and is expected to double its investment to up to 3.5% of its revenue by 2030 (Amed et al., 2022).

The relationship between customer and chatbot seems predictably complex. Customer familiarity with technology is one of the main reasons for the adoption of conversational agents (Pillai & Sivathanu, 2020; Melián-González et al., 2021; Ozuem & Willis, 2024). Some scholars have noted that initial trust in chatbots is shown to mitigate perceived risk related to the interaction and service delivery process (Huang & Dootson, 2022). Mostafa and Kasamani (2022) showed that initial trust in chatbots has a positive effect on customer engagement and can significantly increase customers' future adoption of chatbots. However, Rajaobelina et al. (2021) found that privacy concerns and consumer traits, such as technology anxiety, frustration and the need for human interaction, increased consumers' perceptions of

their interactions with chatbots as "creepy," which in turn may decrease customer loyalty and indirectly foster negative emotions.

Prior research offers limited understanding of how chatbot-led service failure recovery may drive customer loyalty in the luxury fashion industry. The exceptions are Zhu et al. (2022) and Silva et al. (2023) who argued that chatbot adoption might be influenced by customers' state at the moment of the interaction. For example, Zhu et al. (2022) showed that customers are more likely to adopt chatbots in the online pre-purchase stage when their needs are certain. Customers, therefore, seem to identify chatbots as more reliable when they have specific questions relating to a product or service; this effect is stronger, and moderated by product type, when customers are searching for products.

Scholars have begun to acknowledge that chatbot-led customer service provision is inevitable in companies and that it influences user engagement and customer satisfaction in various ways. Unlike other prior technological systems, chatbots can meet some of the unique needs of customers through hyper information provision (i.e., relatedness of the information) and reliability (Melián-González et al., 2021; Silva et al., 2023; Kull et al., 2021). For example, Chen, Le, and Florence (2021) argued that chatbot responsiveness influences the intrinsic value of a customer's experience, whereas chatbot usability influences its extrinsic value. Relatedly, Magno and Dossena (2023) argued that both the utilitarian and hedonic attributes of e-agents, such as chatbots, strengthen consumer–brand relationships. Drawing on cognitive fit theory, Chen, Le, and Tran (2021, p. 1376) argued that chatbots may promote a seamless customer experience if they provide customers "with suggestive guidance and communicate in a friendly style especially when they perform a search task''. Chatbots, while widely used in customer service for automating routine tasks (Silva et al., 2023), struggle with complex language and unexpected situations, hindering service failure recovery. Large language

models (LLMs) like ChatGPT, with their advanced natural language processing capabilities, offer a potential solution (Carvalho and Ivanov2023).

Despite the potential of chatbots, there exists some doubt about whether chatbot-led service failure recovery improves customer loyalty among the demographic cohort of millennials. A growing body of studies has presented varying perspectives on millennials (Helal et al., 2018; Smola & Sutton, 2002). Not only is there a plethora of information available, but there is also inconsistency among scholars and practitioners in their definitions and characterizations of millennials. The popular press and extant literature indicate that millennials are comfortable with new interactive platforms and exhibit a heightened tendency to engage in social interaction (Dimock, 2019; Ozuem et al., 2021). Compared to other generations, millennials display a higher perception of themselves as individuals and as customers, and this narrative determines different social norms as well as unique loyalty dynamics toward brands and companies (Lazarevic, 2012; Agrawal, 2022). Purani et al. (2019) pointed out that innovativeness, usefulness and ease of use of the technologies offered by e-tailers are important antecedents of millennials' loyalty toward the brand or the retailer.

The current study aims to address the following research question: When and why do chatbot-led service failure recovery strategies facilitate customer loyalty? Our study aims to examine how chatbot-led service failure recovery processes facilitate or inhibit customer loyalty in the luxury fashion industry. In order to gain leverage for this study, we draw on frustration–aggression theory to examine the dynamics of the phenomena of interest.

Although chatbot-led service provision is expected to enhance user engagement, uncertainty related to the impact of the effectiveness and particularities of chatbot-led service failure recovery on customer loyalty remains. For example, Blut et al. (2021) challenged the

assumption that conversational agents, such as chatbots, enhance customer engagement; they argued for a more nuanced understanding of how chatbot use leads to customer loyalty.

Scholars have noted that consumers' perceptions of chatbot-led service recovery may differ from their perceptions of human-led service recovery (Song et al., 2022; Blut et al., 2021). In contrast to human-led recovery, chatbot self-recovery leads to a higher perceived functional value and lower perceived privacy risk among consumers and it increases recovery satisfaction. However, customers interacting with chatbots are more likely to blame the company for a negative outcome when frustrated compared to when they interact with a human agent; they blame the company because they do not perceive chatbots as having intentions or control over them and therefore do not consider them responsible for poor service performance.

Esmark Jones et al. (2022) showed that the use of online chatbots for service recovery is effective as long as the customer experience is genuine and authentic, and that such authenticity is related to anthropomorphism (Melián-González et al., 2021). In this study, anthropomorphism refers to customers' perceptions of conversational agents as humanlike rather than the way in which a company designs chatbots as humanlike (Blut et al., 2021). As Epley et al. (2007, p. 865) noted, this perception comes from "the attribution of human characteristics or traits to non-human agents." The authenticity of the chatbot might drive higher engagement and satisfaction in service recovery journeys. Anthropomorphic visual cues might help mitigate negative attributions to the company in a service recovery journey (Pavone et al., 2023).

Miscommunication with a chatbot, such as requests being mistakenly rejected or being ignored, is perceived as a major service failure. Drawing on the need-threat model, Lv et al. (2022) found that a service failure is more easily forgotten when requests are rejected, rather

than ignored. The study noted the communication style in recovery messages and reported that expressing gratitude was more effective than expressing an apology. Yu et al. (2024) investigated the very specific case of a service failure when a service request by a customer was correctly denied (so-called "request rejection"), and compared cases where chatbots and human agents handled this matter. They showed that service request rejection leads to less negative customer evaluations if the service request is handled by a chatbot; this is because customers' expectations of flexibility in service provision are lower when they are consciously interacting with a chatbot rather than with a human.

Huang and Dootson (2022) focused on customers' emotions, specifically, aggression, following a service failure. They found that after a service failure, late disclosure by a chatbot that there is a possibility to receive help from a human employee is likely to result in customer aggression. Crolic et al. (2022) showed that customer satisfaction is reduced if customers in an angry emotional state enter a service interaction with a chatbot.

Research on chatbots has highlighted that technology is based on instrumental value, however, emerging technologies such as chatbots have deeper humanlike interactional competences and provide interactional experiences and instrumental value (Mozafari et al., 2022).

AI adoption and usage varies across service tasks (Xu et al., 2020); the degree of task complexity is a discriminant because customers prefer human agents in high-complexity tasks (Zhu et al., 2022), whereas they prefer chatbots, rather than human agents, when the product attribute type is functional rather than emotional (Ruan & Mezei, 2022).

Prior studies have not explored how chatbot-led service failure recovery processes influence customer loyalty. This gap in the literature may exist partly because current understanding of chatbot–customer interactions masks how an individual's adoption of chatbot-led service

failure recovery shapes their loyalties. It is consequently relevant to uncover to what extent chatbot-led service failure recovery drives customer loyalty. Our work is among the first to link chatbot-led service failure recovery with customer loyalty, which may have significant practical implications for managers. In this sense, our study contributes to the nascent literature on chatbots in service failure recovery and customer loyalty, and it offers insights for managers on how to optimally utilize chatbot-led service failure recovery to facilitate customer loyalty and invigorate conversational agent initiatives.

This paper is organized as follows. The following section reviews the literature. Section 3 discusses the methodological orientation. The fourth and fifth sections present data analysis, findings and discussions. The sixth and seventh sections discuss implications for theory and implications for practice, respectively. The last section discusses limitations of the study and offers recommendations for further research.

2. Literature Review

2.1 Service failure

Scholars of services marketing and information systems have devoted much attention to the relationship between customers and chatbots in service provision. Customers' expectations, and the arousal of negative emotions prior to and during service provision, are the fundamental attributes that result in service failure (Zeithaml et al., 1993). The service failure literature has offered various conceptual models of relationships among individual constructs, including the stability and control of the failure and continued patronization (Choi & Mattila, 2008; Smith & Bolton, 1998), emotional responses in the context of service experiences and the status of customers' relationships with companies (Tax et al., 1998; Ozuem et al., 2021). The scholarly work examining online service failure has evolved into three main streams.

The first research stream addresses the differences between online service failures and traditional service failures. Some researchers' studies have examined service failures that arise during processes that occur in channels with online and offline touchpoints (Hess et al., 2003; Gerrath et al., 2023; McColl-Kennedy & Sparks, 2003). These studies addressed failures related to product defects, inconsistent performance of services, and service employees' performance when they are in contact with customers, which can arguably influence customers' later interactions in the form of electronic word of mouth (eWOM) through additional online environments. Other researchers examined customers' dissatisfactory encounters with technology-based services, known as self-service technologies (SSTs) (Meuter et al., 2000; Hall & Hyodo, 2022; Zhu et al., 2013). SSTs are internet-based electronic services (e-services) that allow customers access to services without direct employee assistance (Zhu et al., 2013). SST failures include failure of e-service delivery (Holloway & Beatty, 2003), and poor technology system and service designs (Meuter et al., 2000). These types of service failures can be said to differ from traditional service failures because of their promoted role as systems of enhancements to existing service encounters (Holloway & Beatty, 2003).

The second stream of studies emphasizes the impact of the omnipresence of customers, businesses and observers on online and SST failures and on individuals' online engagement following service failures. Some researchers have examined the antecedents that motivate customers to produce negative eWOM about service failure experiences through online interfaces (Grégoire et al., 2015; Gerrath et al., 2023; Azemi et al., 2019). Online environments with social networking structures have less censorship intervention from companies, which can influence the depth of negative expressions customers may generate through their eWOM (Christodoulides et al., 2021). Consequently, the advancement of omnichannel environments extends the number of parties engaging with service failures

reported online. Researchers revealed that the increased presence of customers, company employees and observing individuals can enhance the level of engagement with, and reaction to, service failures and reports on social media of companies' responses (Grégoire & Mattila, 2021; Javornik et al., 2020).

The third stream extends the previous stream by examining the non-human parties involved in online service failures. Chatbot service failures are an emerging component of the service failure literature; studies are investigating how chatbot performance impacts adoption and usage experience. Some researchers examined customers' emotional reactions to chatbot failures (Choi et al., 2021; Sheehan et al., 2020; de Visser et al., 2016); they reported that chatbot failures reduced customers' motivation to continue chatbot adoption and usage. These findings reveal that the failure of chatbots to accomplish complex tasks reduces customers' expectations of the system's ability to resolve other online service failures. Other researchers highlighted chatbots' lack of humanlike responses to customers' reported inquiries, which causes customers to reject chatbots in favor of human-to-human interactions (Lteif & Valenzuela, 2022; Huang & Dootson, 2022; Pavone et al., 2023). These constraints influenced the redevelopment of chatbots to include anthropomorphic conversational system features (de Visser et al., 2016) to enhance chatbots' analytical, intuitive and empathetic task delivery intelligence. However, anthropomorphic advances in chatbots led researchers to identify a failure to establish attachment between customers and chatbots (Rajaobelina et al., 2021; Kipnis et al., 2022). Collectively, these studies contribute to advancing the discourse on chatbot-led service failure and its broader consequences; they provide valuable guidance for both practitioners and researchers in this rapidly evolving field. We summarize these contributing studies in Table 1 and position them in the landscape of chatbot-led service failure research.

<Please place Table 1 here>

2.2 Antecedents of service failure recovery

Service recovery is the outcome of the delivery of several interconnecting processes that address service failures, including acknowledgment, response and the provision of solutions to reported service failures that meet customers' expectations (Azemi et al., 2019). Successful service recoveries may trigger the so-called "service recovery paradox" in which customers are more satisfied with companies after a service failure than they were before the service failure (Maxham III & Netemeyer, 2002), whereas double deviation refers to customers' perception that responses to a service failure were inadequate (Basso & Pizzutti, 2016). The service recovery paradox is key to understanding the relationship between service failure, service recovery and customer loyalty. Satisfaction is one of the main antecedents of customer loyalty; customer satisfaction is affected and reduced by service failures, which leads to lower customer retention (Sousa & Voss, 2009). Buttle and Burton (2002) argued that the recovery process has an even greater impact on loyalty than the experience of a service failure. On the one hand, if the service recovery is positively managed, the service recovery paradox will be activated and customers will renew their satisfaction with, and trust in, the company. In this sense, service recovery is an opportunity to preserve customer loyalty by offering additional value that differentiates the brand from its competitors.

2.3 Frustration–aggression theory and chatbots

Frustration–aggression theory proposes that aggression stems from the frustration of goals (Azemi et al., 2020). Frustration is argued to have a stronger influence than other negative emotions because of its association with events that reflect losses, which can stimulate behavioral outcomes and reactions (Banik et al., 2019). Aggression is viewed as the behavioral outcome that arises when an individual's frustration at events and situations is intensified; this can lead the individual to take revenge-based actions against the perceived

initiators of negative experiences (Azemi et al., 2020). Research has revealed how frustration and aggression can be differentiated based on the affective and behavioral responses conducted by individuals influenced by these psychological stances.

Extant research supports the view that negative emotions can have an impact on customers' attitudes and behaviors (DeWitt et al., 2008; Nazifi et al., 2020; Azemi et al., 2019), and result in decreased loyalty and decreased positive eWOM. For example, Danatzis and Möller-Herm (2023) applied attribution theory in their examination of whether customers blamed frontline employees for customer-to-customer (C2C) misbehavior. Their study argued that the severity of C2C misbehavior in service settings can impact observing customers' negative emotions, which might result in them blaming the service provider and increased intention to participate in C2C misbehavior themselves. Several researchers have applied attribution theory to examine the relationship between customer frustration and blame in relation to service providers (Gelbrich, 2010; Pavone et al., 2023; Wetzer et al., 2007). Their findings indicate that although customers may become frustrated from negative service experiences, they will not necessarily assign blame to the service provider if it was not responsible.

Some studies directly applied the frustration–aggression concept to categorize customers by the diverse retaliation behaviors they conducted, which were influenced by varying levels of expressed frustration and aggression (Ozuem et al., 2021; Azemi et al., 2019). For example, Azemi et al. (2020) revealed that frustrated customers created less aggressive eWOM than customers who were severely angry with providers; severely angry customers directed aggressive eWOM at the provider and engaged others in their negative eWOM. Scholarly work has noted that customers' negative emotions toward advanced technologies, because of their complexity and inability to adapt to customer frustration, are increasing (Kumar et al., 2022; Ozuem et al., 2021). Frustrated customers are less likely to favor technology-based services to manage a complaint, which would cause their anger to persist longer during their

service experience (Tsai et al., 2021). Despite the objective capabilities of technology-based services, consumers' subjective perceptions, including prior frustration and anger toward technology experiences, may negatively impact technology usage intention in specific service contexts (Longoni et al., 2019).

3. Methodology and Methods

3.1 Paradigm of inquiry

In this study, we concentrate on the idea of hermeneutical phenomenology and develop a methodological approach that recognizes the researcher and researched as not only being-in-the-world but "becoming" in relation to the investigation and research process. This of course incorporates the idea of AI and, for this paper, chatbots. AI continues to develop in relation to human consciousness and behaves in wonderous ways. However, once the inner workings are explained and understood as a collection of procedures AI is recognized as a program rather than intelligence (Weizenbaum, 1966). Hermeneutics involves interpretive understanding through critical analysis and explanation of text or human activity. "Understanding is perceived as interpretation and the basis of the human condition rather than an outcome of procedural processes" (Howell, 2013, p. 157). As with phenomenology, understanding is ground in life experience through interaction in communities rather than humans acting in isolation. In this study we approach AI and chatbots with intuition, empathy and self-consciousness; we amalgamate self and other to enhance our interpretation and understanding of the data (*ibid*.). What is important for phenomenological hermeneutics is the study of individuals, and, in this paper, interaction with technological transformation through "becoming" in the lifeworld or concrete lived-in situations. In line with this understanding, our study develops a process through theoretical sampling to comprehend the development of chatbots in relation to service failure recovery strategies from a frustration and aggression

perspective. Through our personal histories, culture, language and environment, individuals are provided with an understanding of the world through which reality is identified. In this paper we analyze the notion of becoming in relation to human experience, interpretations of this experience with emerging AI, and how technological transformation enables understanding of internal and external existence.

3.2 Data collection technique and sampling method

The current study is exploratory in nature; it focuses on the relationship between chatbot-led service failure recovery and the level of loyalty from a consumer perspective, as there is limited research in this field. Extant studies on chatbots predominantly examine service provision (Blut et al., 2021) and negative opinions (Chandra et al., 2022); they ignore consumers' levels of receptiveness and loyalty. In order to overcome the shortcomings of existing studies, which were discussed in Section 2, and to gain a broader view of millennials' perspectives, we conducted 47 in-depth interviews with millennials from four countries (USA, Italy, France and the UK). A theoretical purposive sampling technique was adopted to ensure that all participants held the minimum desired characteristics (Morse & Clark, 2019) in order to contribute to the study. This is consistent with the need to obtain relevant insights about real experiences (Roulston, 2010). Since the study focuses on service recovery journeys using chatbots in the luxury fashion sector and millennials, we established four main selection criteria for the participants: (1) individuals of different backgrounds and ages between 18 and 39 years; (2) experience of service failure recovery through any conversational agent, such as chatbots; (3) individuals who have had two or more chatbot-led service failure recovery experiences in the luxury fashion industry; (4) participants who voluntarily agreed to participate in the study. Table 2 summarizes the sample's demographic characteristics.

<Please place Table 2 here>

Phenomenological hermeneutics allowed the opportunity to merge criterion sampling and theoretical sampling. Criterion sampling was based on a predefined understanding of the type of participant required and theoretical sampling ensured that emerging findings were adequately representative of the theoretical frameworks. Indeed, for this methodological approach the most important criteria involved the participants' lived experience in collective and individual contexts; that is, as individual agents in relation to online communities, social structures and theoretical implications. In relation to the criterion sampling, theoretical sampling incorporates the "process of data collection for generating theory whereby the analyst jointly collects, codes and analyses data and decides what data to collect next ... to develop theory as it emerges" (Glaser & Strauss, 1967, p. 45). In theoretical sampling descriptions of real-time events are gathered without allowing interpretive generalizations from participants (Adams & van Manen, 2008). This provided the basis for decisions regarding further data collection, participants and questions while developing theory as it emerged through the research process. Charmaz (2006) considered that theoretical sampling ensured that data collection was focused and increased analytic abstraction through identifying variation and discontinuities.

Following theoretical sampling processes, categories are identified, solidified and finally explicated to comprehensively depict the investigated phenomenon (Morse & Clark, 2019). As such, theoretical sampling may require several rounds of interviews to understand each category, thus framing the dimensions and properties of the phenomenon (Thomson, 2010). Indeed, through phenomenological hermeneutics and the merging of criterion sampling and theoretical sampling we consider that the trustworthiness and credibility of the paper were enhanced because this allowed in-depth comprehension through a specific interpretation process that enables authenticity and transferability to other similar situations.

In relation to the theoretical dimension, this paper concentrates on frustration–aggression theory, which involves the affective reactions and behaviors that individuals develop through situations that have a negative impact on their strategies to achieve certain objectives (Azemi et al., 2020). Frustration involves negative events or situations, and aggression can be a behavioral outcome that arises when frustrations toward events and situations are intensified, and for which revenge-based actions may be taken against the perceived initiators of negative experiences (Azemi et al., 2020). Questions relating to frustration and aggression were developed for participants and further elaborated as the analysis proceeded in relation to online experiences.

This study focuses on the millennial demographic cohort. Various researchers have given different ranges of birth years for millennials, for example, the Pew Research Center considers their range of birth years to be from 1981 to 1996 (Dimock, 2019), whereas Markert (2004) proposed 1986 to 2005; in this study we defined millennials as those born between 1984 and 2005. Widespread agreement exists on the characteristics of millennials as individuals who are virtually interactive through their participation in interactive digital environments (Azemi et al., 2019).

Four of the researchers hold different disciplinary orientations in four different countries (USA, France, Italy, and the UK) along with different lifeworlds. The different roles held by the researchers in different universities across four countries facilitated the recruitment of, and engagement with, participants. To address our research question, we created 14 exploratory open-ended questions on chatbot-led service failure recovery and customer loyalty. The open-ended questions allowed the participants to provide responses using their words, terms, phrases and experiences on chatbot-led service failure recovery and customer loyalty in the luxury fashion industry. In this sense, participants were not limited to any level of responses. Interviews were arranged at the participants' convenience and were conducted

through virtual platforms (e.g., Zoom, Microsoft Teams). The interviews lasted

approximately 55 minutes. This time length is within the interview span that supports rich

and deep understanding of participants' lifeworlds (Azemi & Ozuem, 2023). We conducted

interviews over eight weeks until data saturation (Glaser & Strauss, 1967; Maxwell, 1992),

which was reached at the 47th interview. We conducted four further interviews, but they were

terminated after 25 minutes as no new insights emerged as the interviews progressed.

4. Data Analysis

4.1 Systematic qualitative analysis

The collected data were analyzed using thematic analysis; thematic analysis was used in other

phenomenology-based studies to optimize conceptualization of empirical findings (Gioia et

al., 2013; Ozuem et al., 2023). Thematic analysis encompasses a data-driven context by

which meaningful insights emerge from the data to enhance sensemaking of a phenomenon.

The interviews were transcribed into a document consisting of 297 pages of the participants'

actual words and expressions. Drawing on Gioia et al.'s (2013) systematic qualitative

approach, four of the researchers read and analyzed the transcript using frustration–

aggression theory as a lens. This approach provided different perspectives and enhanced the

credibility of the study (Gioia et al., 2013; Morse & Clark, 2019). To understand the main

constructs and relationships in the emergent data, they summarized the data using the three

stages of analysis (first order, second order and third order).

The first order involves the identification of primary codes from the transcribed data. The

primary codes were keywords and phrases that were taken directly from participants' own

words and expressions during the interviews. This stage enabled the researchers to

comprehend the rich narratives embedded within the interview transcripts, which revealed

participants' various experiences and perspectives of chatbot-led service failure recovery

processes. This facilitated the credibility of the analysis by ensuring that the researchers' representation of data insights did not diverge from the participants' expressed perspectives (Guba & Lincoln, 1989). Prior to the second-order stage of analysis, the large number of identified primary codes were reduced to codes that could be identified across shared accounts from the participants.

In the second-order stage, we proceeded with inductive analysis of the primary codes to develop themes with implicit meanings. These implicit meanings were formulated by the researchers' interpretations of the primary codes taken directly from participants' responses (Gioia et al., 2013; Ozuem et al., 2022).

In the third-order stage, we concluded the analysis by formulating the first-order and second-order codes into theoretically abstract categories. To maintain the rigorous quality of the final data analysis stage, the categorization of four identified themes was based on previous concepts from extant literature but they were defined within the context of chatbot-led service failure recovery experiences. The interview data, in tandem with extant literature, helped the researchers to identify service recovery chatbot scenarios and participants' differing responses to their experiences, which served as the basis for the four identified themes (customers' priorities in the recovery process, customers' expectations of a chatbot, severity of the issue, and contextual congruity). Definitions of these themes and the keywords for each theme are presented in Table 3 to consolidate the relationships between the empirical data and themes. The four themes and the data analysis formed the basis for a chatbot-led service failure recovery customer typology conceptual framework (Figure 1). The four identified customer groups, developed after the categorization of themes, are each discussed in Section 5.

<Please place Table 3 here>

4.2 Interpretation of themes

4.2.1 Customers' priorities in the recovery process

Following a service failure, customers have expectations about the recovery journey and experience provided by the brand. Specifically, customers may have different priorities, such as speed of recovery, that determine their evaluation of their recovery experience and their evaluation of the assistance given by humans and technologies. Participants expressed four priorities in a service recovery and discussed whether technology—more specifically, chatbots—met their needs.

The first priority expressed, and shared by most participants, was speed. Speed can be conceived of in terms of the time needed to initiate the service recovery journey by contacting the company or in terms of receiving timely answers to one's issues. As pointed out by Participant 39:

> Chatbots are helpful with customer services because it can become more streamlined with less of a wait time.

Chatbots provide customers with a platform to report service failures and obtain responses immediately. Customers assign speed to chatbots because of their timely communication, responses that reflect recovery solution advice, and specific actions that enable service recoveries to be initiated during the early stages of reporting a failure. This can be contrasted with human-based contacts who can be delayed by queues of customers and the need to respond directly to every communication. In Participant 23's experience:

> Without the chatbot, the service recovery process would likely be a lot longer as I would have to wait for a representative to look up my order information and would likely have to be transferred a few times before finding someone who could effectively resolve the issue.

The above comment reflects the additional issues associated with human-led online recovery. In comparison to chatbot-led service recovery, customers using service recovery comprising non-digital touchpoints encounter more complex communication and reporting procedures, which can extend the length of the customer service journey and delay recovery outcomes. Such processes can cause more technology-fluent users to experience frustration, which can increase their motivation to adopt chatbots for more direct recovery procedures.

Speed can be particularly relevant for millennials because of their habit of searching for information on digital channels in order to reduce waiting times (Moore, 2012). This was made explicit by Participant 16:

> I find the chatbot much more efficient, because maybe I'm young and so I'm someone who doesn't have, let's say, the desire to wait there so much, but I'm used to searching for things on the internet to go and see and sort things out straight away.

Similarly, Participant 17 stated:

> I'm familiar with using the internet to search, since I was a teenager, and I became so with chatbots, especially in getting fast customer service.

Both participants' statements are associated with the millennial generation's positive attitude toward chatbots. Millennials grew up developing a dependence on the internet and technologies, which has led them to prefer to have the option to manage customer services issues themselves. As a result, firms were required to use chatbots that are able to provide assistance to decrease customers' reliance on human service agents for service failure recovery. Yet, participants' perceptions of chatbots' ability to deliver reliable results were affected by their experiences.

Additional concerns that could be associated with the response time of chatbots were strongly related to another expressed priority, which was the effectiveness of the assistance provided.

This is significant when the issue at hand involves delivery services or expensive purchases, such as a luxury product, as indicated by Participant 31:

> I contacted the company through its automatic help page first, as they do not show the phone number for customer service very easily. That did not help because the response time is never fast enough to fix the time-sensitive situation that is delivery services.

This participant implicitly referenced chatbots' ability to recognize real-time situations and the effect it could have on the customer. Chatbots with advanced AI algorithms can have the ability to prioritize and send reported issues to the appropriate service agent. However, if the chatbot lacks this capability, then its immediate response may be generic, which could be perceived as failing to acknowledge the sensitivity of the customer's failure situation. This implies customers' need for more emotional AI algorithms that recognize customers' reported issues, which would help to ease the frustration and concern customers develop during the process. However, other customers may feel that chatbots, even those with emotion-based algorithms, should encompass functional abilities to address service failure and recovery. Participant 8 felt positive about trading empathy for speed and effectiveness of response:

> My interaction with this chatbot was quick and easy to understand. I felt the chatbot was kind of basic and impersonal but it did its purpose in assisting me to resolve the issues I had.

Similarly, Participant 19 stated:

> Personally, I do not know if humanlike emotions are needed through a chatbot. I just need the chatbot to get my point across and make sure that I am receiving the customer service that I paid for.

These participants' comments reflect customers' varying types of requirements in terms of chatbots' AI algorithms. Customers who are unable to personalize their emotions through their interactions with a chatbot, and feel that the chatbot is failing to respond to their needs, can become frustrated. However, other customers might perceive chatbots as non-emotional but efficient at assisting the service recovery. Non-emotional, yet efficient, chatbots can be more effective, and less frustrating, for customers seeking prompt process solutions rather than emotional assurance. The fit between the features of technologies, such as chatbots, and customers' priorities appears therefore to be an antecedent of customer loyalty, as it has the potential to strengthen or undermine it. This is even more crucial in the luxury sector where customers feel entitled to responsive assistance, which they are used to because of the personalized shopping assistance delivered in-store or through phone calls with a dedicated customer service team.

4.2.2 Customers' expectations of a chatbot

In service contexts, one of the drivers of customers' evaluation of the technology they encounter in their journey is IT acceptance, leading to adoption, which has substantial spillover effects on customer experience and satisfaction (Djelassi et al., 2018). Technology acceptance is in turn dependent on various factors, including customers' expectations of the technology (Juaneda-Ayensa et al., 2016), which are influenced by the specific context and the technology itself.

Expectations of relatively new technologies, such as AI and chatbots, may be either based on previous actual experiences or on preconceptions. Various behaviors have been identified in service recovery in the luxury sector context. Luxury brands encompass financial and social risks for customers, which can cause customers to develop exceptional expectations of luxury brands. The substantial prices paid for luxury purchases are widely perceived as justifying

entitlement to a high level of customer service, which is not usually associated with SSTs and chatbots, as indicated by Participant 4:

> Especially when looking at luxury brands, when you're spending more money, you want to be guaranteed quality customer service, which is more likely to be offered by a person, not a technology.

Other customers take this ideology even further, especially when chatbots are presented as the main touchpoint enabling interactions with the company and customers are uncertain about future possibilities to receive human assistance. Participant 38 asserted:

> If there is a chatbot, then I go through a chatbot and I will request to speak to someone. I prefer going directly to search for the customer service email rather than the chatbot because it's just repeating itself.

This comment reflects some customers' determination to reach a service agent to avoid using chatbots as part of their service experience. This avoidance can be associated with their perceptions of chatbots' lack of ability to act as a substitute for service agents, and preference to speak to a human contact. In addition, these customers may find that chatbots prolong service failures and intensify the complexity of service recovery; thus, negatively affecting customers' perceptions of anticipated chatbot experiences.

Following a service failure, some customers feel a pressing need to exert control over the subsequent service recovery as well as power over the company (Wei et al., 2020; Zhu et al., 2022). In the luxury sector, as explained by Participant 6, a feeling of empowerment is actively sought by consumers through their acts of purchasing:

> Psychologically, for luxury purchases, you cannot confine my interaction to a chatroom, a site, a program, no matter how technologically advanced, because I feel

less important and deprived of that form of power that I want to manifest indirectly in the acquisition of a luxury good.

Some consumers consider that emerging technologies could reduce the perceived exclusivity of luxury brands and lessen the unique connections between customers and luxury brands. These perceptions may influence luxury customers to develop negative evaluations of chatbots and oppose the arguments that chatbots improve luxury services. Customers of luxury brands expect exclusive customer service attributes, corresponding with the level of patronage conducted by customers, and desire self-expression and feelings of prestige. This is supported by Participant 27:

Based on my experience walking through luxury stores, such as Louis Vuitton, immediately, a customer services representative will start to interact with you on a more personalized level than chatbots provide.

This comment indicates some customers perceive chatbots' responses to be generic and depersonalized. Although service recoveries require the incorporation of task-oriented responses, luxury customers can become dissatisfied with their experience when a chatbot's communications are not as socially oriented as an offline customer services representative's responses.

Participant 29 pointed out that customers' negative perceptions of chatbots are also related to companies' lack of promotion of chatbots, excepting those companies that use chatbots as a unique or preeminent point of contact with their customers. Forcing customers to interact through chatbots might lead to aggression and negative attitudes toward the technology, whereas offering chatbots to customers as one possible innovative solution might encourage purposeful interactions as well as adoption of chatbot use:

I just think that chatbots have striking potential and if they were a more recurring

thing or if there was a bigger image on the site, people would be much more inclined

to go there and use them … their use should be encouraged more, of course not as the

only alternative but as a viable option.

A difference also emerged based on the type of luxury brand, as customers are less aggressive

toward chatbots when the company is not a market leader (Participant 8):

Expectations vary from case to case. Whether from small brands or new ones you are

more understanding.

Participant 47 similarly stated:

My experiences with brands' chatbots have not always been the greatest but I have

also had some helpful ones.

A brand's reputation therefore affects customers' expectations about chatbots in service

recovery. Brands with a solid reputation in customer service may disappoint customers by

offering them the possibility to interact with a chatbot, even though they have already proven

themselves worthy to the customer.

4.2.3 Severity of the issue

In some service recovery situations, customers will determine chatbots' perceived ability to

resolve service failures. The severity of the issue refers to the extent that chatbots are able to

deliver recovery processes for service failures of various severities. Perceived severities are a

significant antecedent for double deviation and recovery paradox effects (Maxham III &

Netemeyer, 2002), which determine customers' acceptance of, and satisfaction with, the

service recovery outcomes they experienced (Danatzis & Möller-Herm, 2023). Customers

express concerns when service failures are perceived as too complex for a chatbot to resolve, as indicated by Participant 13:

> The downside of these digital technologies is that when there are complex issues, the bots are simply a step on the way to real help, which does not save the user any time. This can be frustrating, especially when there are issues with expensive items that these luxury brands offer.

Similarly, Participant 25 stated:

> I feel like chatbots can only help with a limited number of problems. When I had a problem it didn't understand it, it just took me in circles and didn't help.

Both participants' experiences reflect that perceived recovery effectiveness for specific service failures can be negatively impacted by chatbots. Failures associated with the utilization of chatbots for service recovery procedures may increase the likelihood of customers deciding to reject the usage of chatbots (Lteif & Valenzuela, 2022), including as a tool for recovery procedures. Similarly, customers' dissatisfaction with a chatbot's recovery performance could negatively affect their loyalty to the fashion brand housing the chatbot in its digital platforms, as indicated by Participant 2 and Participant 1:

> The failure of the chatbot did undermine my loyalty solely because of the inconvenience it caused in terms of reporting a failed service of shoes, which should be relatively straight forward.

> I am a first-time user of a product and had a bad experience. I will most likely stop using the brand, but if I had been loyal for many years, a bad chatbot is unlikely to affect me.

Participant 1's comment reflects the critical impact failed chatbot-led recoveries have on inexperienced or novice customers. These customers may not have an attachment to a brand that motivates attitudinal loyalty. A first experience with a chatbot that is ineffective could delay possible customer loyalty progression toward brands. However, customers with a long-term purchase record with a brand may be willing to maintain loyalty and allocate negative evaluations strictly toward the chatbot. However, customers may not always directly assign blame to chatbots for specific service failures, such as delayed orders or product defects. Although customers may be dissatisfied with services performed by chatbots, they may hold the brand responsible for maintaining the quality of service; thus, the responsibility of service failures or recovery procedures would not be assigned to the chatbot (Pavone et al., 2023). Participant 37 averred:

> I was told my order was delivered, but it wasn't. The chatbot was unreliable as there were no new updates regarding my missing order. I usually do not mind using a chatbot, but in this instance it was frustrating because my problem could not be fixed.

In service situations where customers are encouraged to report service failures through a chatbot system, customers may expect the chatbots to be easy to use and capable of conducting recovery processes. As a result, customers with limited access to human interactive support services or resources to self-recover might be unable to benefit from prompt recovery speed and responsiveness as supported by Participant 30:

> Replacement of an incorrect order is a typical and easy-fix problem, missing orders less so. The customer service robot was incapable of telling me whether or not my problem would be solved.

The above participant's statement arguably reflects that unresponsiveness and recovery delay times facilitated by chatbots can be antecedents to the double deviation effect of service

recovery. For example, participants noted that fashion brands' encouragement of customers to adopt chatbots could lead to the attribution of blame to the company, as supported by Participant 14:

> If you feel as though a brand is consistently directing you to a chatbot, that chatbot isn't helpful, and another brand seems more personally invested (off-technology, human interaction), then yes, it affects loyalty.

Similarly, in the luxury fashion context, Participant 12 stated:

> Luxury brands offer very expensive items and services which require more attention than that of an automated bot … Chatbots do not affect my loyalty to the brand; however, they do make the brand less attractive and they can be frustrating.

The failure of chatbots to implement an effective recovery can reflect negatively on the brand's strategic decisions in their technology and customer service investments. This may cause customers to question a brand's choice of chatbots over service agents and to expect reduced service quality, which could lead to double deviation outcomes of chatbot-led service recovery. A brand's investment in chatbots could imply a disinvestment in maintaining exclusive contact with customers in the long term, which could negatively impact the perceived equity of the luxury brand.

However, customers who experience failures they perceive as less severe or uncomplicated may find the recovery process through a chatbot less frustrating compared to a complex failure, as indicated by Participant 11:

> My service failure experience was nothing very difficult … The chatbot in this situation was informative and useful and I enjoyed using it as it saved me the trouble of having to call when briefly discussing it with the chatbot was the easier answer.

Similarly, Participant 7 stated:

> Simple problems are also more likely to be solved by chatbots, which would be the
>
> most efficient way to reach out to the company and receive service for my needs.

The above responses reflect that low severity levels of service failures can positively impact the adoption, and customer evaluation, of chatbots; this suggests that chatbots can influence a service recovery paradox effect in fashion recovery services. Of interest, several participants implied that adoption of chatbots for recovery procedures can still be maintained for severe service failures when they as customers have positive long-term experiences with brands prior to the chatbot-led recovery.

4.2.4 Contextual congruity

In a service recovery setting, contextual congruity refers to the degree of agreement between chatbots' responses and customers' effective recovery from a service failure. Congruity refers to experiences and processes that are formed based on consistent exchanges between parties, which are dependent on the efficiency of the other (Wu et al., 2016). Perceived congruity can be impacted by customers' affective evaluation of the failure and recovery situation, which may affect how they interact with chatbots. Customers may conclude that a chatbot is ineffective for their specific service failure situation, especially if they are unable to express their affective stance, as supported by Participant 45:

> I needed someone to pay attention to my issues, and express regret for the poor
>
> service...This kind of empathy and comprehension was not something the chatbot was
>
> able to deliver.

Another participant, Participant 13, implied that they were dissatisfied with a chatbot:

The customer service failure I described involved an automated message through the chatbot which overwhelmed me to the point I did not even want to try to get my money back.

During the early stage of a chatbot's conversation process, customers may feel confined by the automated responses of chatbots. Service failures can have a negative mental impact on customers; customers may feel the need to extend the conversation with chatbots to address further concerns or to obtain additional information to reassure them about the recovery process. A chatbot's inability to respond outside its automated responses could increase customers' negative emotions, which could affect their evaluation of the chatbot, and possibly the brand, and lead to frustration. This arguably supports the view that customers' affective position can have a negative impact on their interaction with, and evaluation of, chatbots during service recovery. Although customers are encouraged to proceed through self-recovery processes, customers may hold the provider accountable for recovery, and feel dissatisfied when a provider's direct effort is minimal due to its reliance on chatbots, as indicated by Participant 3:

It essentially feels like companies are focused around chatbots so they don't have to deal with consumer dissatisfaction face to face.

Another participant, Participant 28, described a chatbot's impact on their loyalty:

Chatbots facilitate my loyalty if they have an easy-to-use user interface and provide answers efficiently. If chatbots are not able to detect my problem or redirect me to another page that does not address my issues, then it will negatively affect my brand loyalty.

The above response highlights that customers' recovery evaluations can be negatively impacted and they may even develop dissatisfaction with fashion brands that decide to

facilitate their services through chatbots. In the luxury context, customers might perceive a lack of congruity between their service expectations of luxury brands and the limitations to communication with a chatbot and lack of prioritized affective attention to their expressed concerns. Those customers who are willing to adopt chatbots may negatively evaluate chatbots that reflect low AI-based adaptability to facilitate self-service practices through chatbots. In addition, even though a chatbot may reflect emotional intelligence, customers' perception that a chatbot cannot deal with complex recovery processes or deliver seamless online self-service will negatively impact their evaluations of brands and chatbots. These issues can be connected to the critical factor drawn from the participants' responses: the inability of some chatbots to provide information that is relevant to a customer's inquiry and recovery requirements. Such an experience was reported by Participant 43:

> I clicked the final "pay" button, but there were errors and I was not successful in my purchase. Using the online chatbot I tried to receive assistance, but it appears the system did not have enough up-to-date information regarding the sales of that item.

The above response reveals that a low degree of contextual congruity can occur when chatbots do not have the required information and solutions embedded in their systems to perform intelligence-based recovery responses. As discussed in the previous theme (Subsection 4.2.3), customers can recognize that chatbots may have limitations in managing complex service failures. Yet, despite this recognition, some customers evaluate brands negatively for their decision to replace service agents with chatbots. Experienced chatbot users will review the type of chatbot a brand selected to conduct recovery initiatives; unwilling chatbot users will critically question the purpose of chatbots that do not compensate for the removal of service attributes commonly associated with human service agents. Customers' reviewing and questioning of a brand's selection of chatbots arguably indicates a potential reduction in brand loyalty if experienced and inexperienced chatbot

users' interactions with chatbots are perceived as frustrating and not congruent with their expectations of the chatbots' service recovery features.

5. Discussion

Following the emergence of the four themes, their interpretation (presented in Section 4) led to the identification of specific customer attitudes, priorities, actions and reactions (either emotional or behavioral). These were later connected and paired, through a matrix approach, in order to detect attitudinal patterns based on customers' feelings and perceptions elicited by the chatbot-led service recovery journey. This approach led us to identify four types of customer (connoisseur, aesthetic appreciator, greenness and groundspeeder) by combining their main priority in service recovery (i.e., their orientation and need for human contact rather than speed and responsiveness), the frustration and aggression they manifested during the service recovery, and disclosed outcomes of the recovery on customer loyalty. The customer typology framework, CAGG (derived from the names of the four customer types), offers new insights into the effects of chatbot-led service failure recovery processes on customers' satisfaction, loyalty and intention to use chatbots in the future (see Figure 1). Our CAGG framework is novel in its narrative of the service recovery journey. Customers' orientation toward the adoption and use of technologies is integrated within the overall conceptualization as one of the dimensions identifying customer typologies (i.e., preference for AI-based speed-related benefits vs. need for human contact and support).

<Please place Figure 1 here>

5.1 Connoisseur

Connoisseur customers have in-depth knowledge and experience in applying chatbot systems to service failure and recovery situations. This justifies their maintained loyalty toward service providers and positive acceptance of chatbot recovery experiences. An example is

their perception of the increased recovery efficiency facilitated by chatbots. The connoisseur's priority to adopt an AI system begins in the early stages of the recovery process. They perceive the traditional methods of reporting service failures, specifically contacting employees through non-AI communication channels, to be a cause of delay in reporting and resolving a service failure. According to connoisseurs, chatbots increase the speed of recovery and the process is as efficient as reporting service failure through traditional channels. Of interest, connoisseur customers desire to be independent and maintain self-recovery processes. This is associated with their perspective that online services enable them to access information and complete tasks within a short period of time, which increases their expectation of digital-based processes that increase their recovery independence (Hall & Hyodo, 2022). As a result, connoisseurs may develop an affective interpretation that they can influence their recovery process and choose actions and outcomes, which gives them a strong sense of empowerment (Dao & Theotokis, 2021). Therefore, connoisseurs have a tendency to adopt positive behaviors in response to using chatbots in service recoveries, which enables them to proceed immediately to positive recovery outcomes. If connoisseurs perceive high efficiency in the self-recovery process, then this will increase their satisfaction with the experience and the service provider, which leads to a service recovery paradox and maintained loyalty to the fashion brand.

5.2 Greenness

Customers who have limited experience in applying chatbots in service recovery situations are referred to as greenness. During a service recovery situation, greenness customers would be willing to adopt chatbots to address service failures. However, as inexperienced chatbot users, greenness customers' priority for using chatbots in service recovery would be limited to failures perceived as low in severity or complexity. For these types of failures, greenness customers may perceive chatbots as efficient, which would lead to positive evaluations and

increased customer satisfaction. Yet, when greenness customers experience failures that are not recognized or immediately processed through a chatbot, they will be more critical in their evaluation of the recovery responses of the AI-based processes. Greenness customers may feel they have limited support from the chatbot, which may further influence their perspective of the perceived level of severity and complexity of the service failure. They are likely to become dissatisfied with the responses of the chatbot, which may come across as standardized and generic with limited real-time recognition of the failure. As inexperienced users, greenness customers are less likely to be able to comprehend how to adapt to the responses of the chatbot and conduct alternative actions to maintain the chatbot's usefulness. Consequently, greenness customers will feel that their recovery was delayed and managed inefficiently as a result of it being processed through a chatbot.

Greenness customers will cognitively evaluate the technical and communication factors they perceive to be improperly integrated in a chatbot, which could arguably be connected to process, technology and service design failures (Azemi et al., 2019). At the conclusion of their recovery stage, greenness customers will negatively evaluate the experience specifically on the process of the recovery regardless of sufficient recovery outcomes. Greenness customers' problem-solving capabilities in chatbot recovery situations are not as good as those of connoisseurs. Self-recovery processes imply that customers are able to influence their recovery and alter the situation (Huang & Dootson, 2022).

5.3 Aesthetic appreciator

When facing a service failure, aesthetic appreciators are personally affected in an intimate way, and they display insecurity about the recovery procedures they should start. They not only seek assistance, but also personalized support that would solve their problems and make them feel at ease during the service recovery journey. Aesthetic appreciators therefore value

empathy when dealing with customer service—a feature that is very difficult to find when interacting with chatbots and other AI applications.

Aesthetic appreciators tend to avoid the usage of chatbots because of their high need for human interaction; they override them to receive assistance from employees. This lack of trust does not necessarily originate from previous negative experiences with chatbots, but from assumptions about their emotional intelligence. Many aesthetic appreciators share a dislike of online channels and technology that originates mostly from the perceived impersonality of the experience offered. As such, they are used to purchasing almost exclusively offline, in store, which contributes to their insecurity when buying online and heightens their emotions when they are involved in a service failure.

Aesthetic appreciators will be positively surprised by chatbots displaying human emotions through the conversational style adopted because of their low expectations of chatbots and their relative inexperience with enhanced online environments. Apologies as well as expressing regret may create a sincere connection with the chatbot, which might make up not only for the service failure experienced but also for an eventual failure of the chatbot to solve the customer's main issue. Such genuine surprise will mitigate aesthetic appreciators' attitude to the brand, which otherwise might be quite severe. In fact, in terms of loyalty, aesthetic appreciators admitted that chatbots undermined their relationship with the company, as they felt abandoned when they most needed support.

5.4 Groundspeeder

Finally, groundspeeders are named after their main priority in recovery journeys: speed of action. Unlike aesthetic appreciators, they do not seek empathic reassurance when interacting with customer service providers, either human or AI. Groundspeeders will request the

company to be available when they are in need, to provide answers in a timely manner and to end their recovery journey as soon as possible. Sometimes the priority of speed is hard to achieve, because some processes do require a certain amount of time (i.e., returns and refunds). Nevertheless, receiving a response minutes after the occurrence of a service failure gives groundspeeders a proxy of the brand's reliability, which reduces their frustration during the recovery steps to come. Groundspeeders perceive chatbots as useful both directly, since they are always available, accessible and can provide solutions to standard issues, and indirectly, because they will manage most customers' requests and allow human assistance to promptly take care of more complex issues.

Groundspeeders will also look for effectiveness in their recovery. In this sense, not only do groundspeeders recognize chatbots' limitations, but they also require chatbots to understand their own limitations. In fact, groundspeeders do appreciate a chatbot when it is intelligent enough to realize it cannot provide help and connects the customer with a human assistant either directly or by providing personal contacts for the service recovery journey to proceed. Groundspeeders are easily angered by the perception of time wasted; as such, a chatbot's initiative is enough to satisfy them. The objective evaluation they make of chatbots' technical properties will lead them to not blame chatbots for failing to solve their issues, but to turn against the brand for what they perceive as the second failure in a row. Chatbots, therefore, will not affect groundspeeders' loyalty to the brand in the first instance, although they might make the company less attractive or reliable in their eyes if no progress is made during their interactions.

6. Implications for Theory

The present study adopts the perspective of service recovery journeys as alternative customer journeys (Van Vaerenbergh et al., 2019) that differ from what the customer would have

experienced if the service failure had not happened. Consistent with this perspective, chatbots are considered touchpoints and their role of providing interactions between customers and brands could vary from the norm. Substantial differences might arise in consumers' behaviors and attitudes to the brand and the chatbot when using SSTs in ordinary circumstances and when encountering these touchpoints as the first line following a service failure. Studies addressing customer experiences with chatbots point out that, in most cases, these interactions are optional and possibly extemporaneous; for example, Lee et al. (2022) investigated online advertising through chatbots in which this touchpoint is offered once and limited in time. Conversely, in service failure contexts, customers perceive chatbots as integrated within their service recovery journey, of which they are a fundamental part, especially if the brand is presenting chatbots as the only available contact in the first stages of a recovery process. Furthermore, the exceptional nature of the service failure, from customers' point of view, compared with their expectations of a seamless journey, can deeply alter their priorities and preferences.

In this respect, through thematic analysis, our results identified four topics that define the dynamics occurring between customers and chatbots in a service recovery journey. Also, four types of customers were identified based on how their interactions with chatbots unfold and how these affect their loyalty to the brand as well as future chatbot adoption. Such variety is consistent with frustration–aggression theory, according to which customers' outcomes and forms of reactions allow differentiation between types of individuals. In the specific setting of service recovery through intelligent SSTs, customers' frustration and aggression can affect their satisfaction with, and loyalty to, both the brand and chatbots. In the context of frustration–aggression behaviors, we identified four customer archetypes (Figure 2).

<Please place Figure 2 here>

A chatbots' attributes (utilitarian vs. hedonic) have implications for theory. Research has revealed that in regular customer journeys, utilitarian and hedonic characteristics may appeal to different customer segments; for example, De Cicco et al. (2020) found that hedonic attributes enhance millennials' attitude, trust and enjoyment in chatbot adoption. Our results, however, find that in service recovery journeys the effectiveness of hedonic or utilitarian attributes is subordinate to, or at least combined with, other aspects of the experience. Specifically, the severity and subjective importance of the service failure experienced by customers determine an extremization of their positions. The more important the disservice, the closer we get to a polarization in which, on the one hand, expert users (such as connoisseurs and groundspeeders) aim for a quick and efficient resolution of their problem and, on the other hand, users sensitive to the relational side try to overcome the chatbot and contact a human employee (that is, aesthetic appreciators and, to a lesser extent, greenness).

Similarly, Magno and Dossena (2023) identified that both utilitarian and hedonic attributes have an overall effect on the relationship between customers and brand. Our results are partially in line with their findings, because the impact (positive or negative) on greenness' and groundspeeders' brand loyalty is proportional to the complexity of the disruption and its eventual resolution; this impact is mediated by chatbots' presence and availability and by the experience they had with the chatbot. Greenness and groundspeeders will be affected by chatbots whenever their recovery is not easy, understandable, swift or effective. These customers base their judgment on the utilitarian conversational attributes of the chatbot, as their main priority is to get seamlessly through their service recovery journey. Conversely, the other two groups stand in diametrically opposed positions. On the one hand, aesthetic appreciators tend to reject the presence of a chatbot in service recovery journeys and perceive chatbots' predominance as first touchpoints to initiate a recovery as evidence of the brand's

lack of care. These customers will therefore find such an imposition infuriating, which will lead to negative emotional reactions and subsequent attribution of blame to the brand, thus ultimately affecting their loyalty. What is to be stressed is that they do not evaluate the aspects characterizing their experience with the chatbot, because they reject its existence in the first place. On the other hand, connoisseurs do not base their brand loyalty on the chatbot offered by the brand. When interactions with a chatbot are positive, there is an improvement in their attitude to the brand; otherwise, however, they will not hold the chatbot responsible, whose limitations they objectively recognize, and their blaming of the company and its policies and management dynamics will be aggravated.

Our study shows that customers' emotions, specifically frustration and aggression, affect not only customer loyalty but also technology adoption. Customers' retaliation behaviors may in fact be addressed to the company, to the chatbot, or both. In many cases, customers perceive being offered a chatbot to interact with as a statement of disregard from the brand, which is even further aggravated by the context in which the service failure happened. In the luxury setting, which we investigated, customers expect failures to not occur, because of the "flawless" image brands usually promote. If and when failures do occur, they want to be practically and emotionally supported throughout their service recovery journey because of the expensive nature of their purchases. Therefore, when dealing with a SST, luxury customers find themselves trying to align their assumptions about themselves and their own importance with what they expect from the brand and from the chatbot. Frustration, which originated from the service failure, may therefore turn into aggression whenever these assumptions and expectations do not align. Transferability in relation to frustration and aggression affects both customer loyalty and future technology adoption.

7. Implications for Practice

The CAGG framework presented in this study illustrates the determinants affecting customers' interactions with chatbots in a service recovery journey and, consequently, both their loyalty to the brand and further adoption of chatbots. Starting from the thematic categories and the four types of customers, we offer suggestions to retailers to reposition their approach and leverage opportunities to improve their service recovery journeys. In the same way as they meticulously design customer journeys and customer experiences, they should also pay attention to how their service recovery journeys are structured in order to effectively turn negative customer experiences into opportunities to strengthen their loyalty.

The variety of customer segments suggests that companies should prioritize flexible service recovery journeys by making many touchpoints available to customers at the start of their journeys. Customers should be able to choose among multiple different touchpoints to initiate their service recovery; specifically, an easy and quick way to interact with human assistance should be provided to those customers who perceive a single contact option of chatbots as a negative. An even better solution would be to invest in intelligent chatbots that are able to pass the recovery on to a human assistant when they realize that they are unable to provide a solution to the customer's issue, as that would appeal to more than one customer segment. This might also mitigate contextual congruity limitations that are responsible for aggravating frustration in most customers and even raise aggressive responses. In relation to customers' priorities, speed in the various stages of the recovery process is a must for most segments, so companies should ensure that handover is swift and fluent; this will prevent customers from perceiving further disruptions in this new journey that emerged from a major disruption.

8. Limitations and Ideas for Future Research

The present study is not without limitations. The main limitation we identify is related to its focus on the millennial generation and the luxury sector, in which exclusivity, personalization and customer care are key. Nevertheless, this might offer opportunities for further studies about other generations and comparison between these generations and millennials. Although studies with this orientation have already been developed, they have never addressed service failure and service recovery journeys. Also, comparison studies across generations mostly focus on customers' social orientation, social pressure on chatbot adoption and attitude toward chatbots' communication style (De Cicco et al., 2020; Ameen et al., 2022; Maar et al., 2022). Analyzing different demographic cohorts in their service recovery journeys through intelligent SSTs is therefore a first direction for future research. Another limitation that may be further developed as a future avenue for fruitful research in the service recovery literature is cultural comparison between countries. Transferability for this study may only be realized in Western settings and further research is required to determine the extent to which findings may be relevant in wider domains. Although we gathered our data in four countries (France, Italy, United Kingdom and United States), it was not our intention in the present work to examine eventual cultural differences in chatbot usage in service recovery journeys. Besides, our analysis did not identify a clear correspondence between customers' locations and the four themes investigated or the outcomes of the chatbot-led service recovery journey. Moreover, all the participants, independent of their culture, could be assigned to one of the four identified customer archetypes. The four countries can all be considered individualistic-oriented countries. Future research may explore these aspects to extend our findings from a cultural perspective.

References

Adams, C., & van Manen, M. (2008). Phenomenology. In L. M. Given (Ed.), *The Sage Encyclopedia of Qualitative Research Methods* (pp. 2614–2619). Thousand Oaks, CA: SAGE Publications Ltd.

Agrawal, D. K. (2022). Determining behavioural differences of Y and Z generational cohorts in online shopping. *International Journal of Retail & Distribution Management*, 50, 880–889.

Amed, I., Balchandani, A., Berg, A., Harreis, H., Hurtado, M., af Petersens, S., Roberts, R., & Sanchez Altable, C. (2022, May 2). *State of Fashion Technology Report 2022*. McKinsey & Company. (accessed May 23, 2023) https://www.mckinsey.com/industries/retail/our-insights/state-of-fashion-technology-report-2022.

Ameen, N., Cheah, J. H., & Kumar, S. (2022). It's all part of the customer journey: The impact of augmented reality, chatbots, and social media on the body image and self-esteem of Generation Z female consumers. *Psychology & Marketing*, 39(11), 2110–2129.

Araujo, T., van Zoonen, W., & ter Hoeven, C. (2022). 'A Large Playground': Examining the Current State and Implications of Conversational Agent Adoption in Organizations. *International Journal of Innovation and Technology Management*, 19(07). DOI:10.1142/S0219877022500249

Azemi, Y., Ozuem, W., & Howell, K. E. (2020). The effects of online negative word-of-mouth on dissatisfied customers: A frustration–aggression perspective. *Psychology & Marketing*, 37(4), 564–577.

Azemi, Y., Ozuem, W., Howell K. E., & Lancaster, G. (2019). An exploration into the practice of online service failure and recovery strategies in the Balkans. *Journal of Business Research*, 94, 420–431.

Azemi, Y and Ozuem, W (2023) How Does Retargeting Work For Different Gen Z Mobile Users? Customer Expectations and Evaluations of Retargeting Via the Expectancy-Theory Lens, *Journal of Advertising Research* (forthcoming)

Banik, S., Gao, Y., & Rabbanee, F. K. (2019). Status demotion in hierarchical loyalty programs and its effects on switching: Identifying mediators and moderators in the Chinese context. *Journal of Business Research*, 96, 125–134.

Basso, K., & Pizzutti, C. (2016). Trust recovery following a double deviation. *Journal of Service Research*, 19(2), 209–223.

Blut, M., Wang, C., Wünderlich, N. V., & Brock, C. (2021). Understanding anthropomorphism in service provision: a meta-analysis of physical robots, chatbots, and other AI. *Journal of the Academy of Marketing Science*, 49, 632–658.

Buttle, F., & Burton, J. (2002). Does service failure influence customer loyalty?. *Journal of Consumer Behaviour: an international research review*, 1(3), 217–227.

Carvalho, I. and Ivanov, S. (2023), "ChatGPT for tourism: applications, benefits and risks", *Tourism Review*, doi: 10.1108/TR-02-2023-0088.

Chandra, S., Shirish, A., & Srivastava, S. C. (2022). To be or Not to be …Human? Theorising the role of human-like competencies in conversational artificial intelligence agents. *Journal of Management Information Systems*, 39(4), 969–1005.

Charmaz, K. (2006). *Constructing Grounded Theory: A practical guide through qualitative analysis*. Sage.

Chen, J. S., Le, T. T. Y., & Florence, D. (2021). Usability and responsiveness of artificial intelligence chatbot on online customer experience in e-retailing. *International Journal of Retail & Distribution Management*, 49(11), 1512–1531.

Chen, J. V., Le, H. T., & Tran, S. T. T. (2021). Understanding automated conversational agent as a decision aid: matching agent's conversation with customer's shopping task. *Internet Research*, 31(4), 1376–1404.

Choi, S., & Mattila, A. S. (2008). Perceived controllability and service expectations: Influences on customer reactions following service failure. *Journal of Business Research*, 61(1), 24–30.

Choi, S., Mattila, A. S., & Bolton, L. E. (2021). To err is human (-oid): how do consumers react to robot service failure and recovery?. *Journal of Service Research*, 24(3), 354–371.

Christodoulides, G., Gerrath, M. H., & Siamagka N. T. (2021). Don't be rude! The effect of content moderation on consumer-brand forgiveness. *Psychology & Marketing*, 38(10), 1686–1699.

Comes, S., Schatsky, D., & Chauhan, R. (2021, August 25). *Conversational AI: Five vectors of progress*. Deloitte Insights. (accessed May 23, 2023) https://www2.deloitte.com/us/en/insights/focus/signals-for-strategists/the-future-of-conversational-ai.html.

Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). Blame the bot: Anthropomorphism and anger in customer–chatbot interactions. *Journal of Marketing*, 86(1), 132–148.

Danatzis, I., & Möller-Herm, J. (2023). Stopping the Spread: how blame attributions drive customer-to-customer misbehavior contagion and what frontline employees can do to

curb it. *Journal of Service Research*, 26(3).

https://doi.org/10.1177/1094670522115044.

Dao, H. M., & Theotokis, A. (2021). Self-service technology recovery: The effect of recovery

initiation and locus of responsibility. *Journal of Interactive Marketing*, 54(1), 25-39.

De Cicco, R., Silva, S. C., & Alparone, F. R. (2020). Millennials' attitude toward chatbots: an

experimental study in a social relationship perspective. *International Journal of Retail*

& Distribution Management, 48(11), 1213–1233.

de Visser, E.J., Monfort, S.S., McKendrick, R., Smith, M.A., McKnight, P.E., Krueger, F., &

Parasuraman, R. (2016). Almost human: anthropomorphism increases trust resilience

in cognitive agents,.*Journal of Experimental Psychology: Applied*, 22(3), 331–349.

DeWitt, T., Nguyen, D. T., & Marshall, R. (2008). Exploring customer loyalty following

service recovery: The mediating effects of trust and emotions. *Journal of Service*

Research, 10(3), 269–281.

Dimock, M. (2019, January 17). *Defining generations: Where Millennials end and*

Generation Z begins. Pew Research Centre. https://www.pewresearch.org/short-

reads/2019/01/17/where-millennials-end-and-generation-z-begins/

Djelassi, S., Diallo, M. F., & Zielke, S. (2018). How self-service technology experience

evaluation affects waiting time and customer satisfaction? A moderated mediation

model. *Decision Support Systems*, 111, 38–47.

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: a three-factor theory of

anthropomorphism. *Psychological Review*, 114(4), 864–886.

Esmark Jones, C. L., Hancock, T., Kazandjian, B., & Voorhees, C. M. (2022). Engaging the

Avatar: The effects of authenticity signals during chat-based service recoveries.

Journal of Business Research, 144, 703–716.

Gelbrich, K. (2010). Anger, frustration, and helplessness after service failure: coping strategies and effective informational support. *Journal of the Academy of Marketing Science*, 38, 567–585.

Gerrath, M. H., Mafael, A. Ulqinaku, A., & Biraglia, A. (2023). Service failures in times of crisis: An analysis of eWOM emotionality. *Journal of Business Research*, 154(4). DOI:10.1016/j.jbusres.2022.113349

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods*, 16(1), 15–31. https://doi.org/10.1177/1094428112452151

Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies of Qualitative Research*. London: Wiedenfeld and Nicholson.

Grégoire, Y., & Mattila, A. S. (2021). Service failure and recovery at the crossroads: recommendations to revitalize the field and its influence. *Journal of Service Research*, 24(3), 323–328.

Grégoire, Y., Salle, A., & Tripp, T. M. (2015). Managing social media crises with your customers: The good, the bad, and the ugly. *Business Horizons*, 58(2), 173–182.

Guba, E. G., & Lincoln, Y. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.

Hall, M. J., & Hyodo, J. D. (2022). Service Provider to the Rescue: How Firm Recovery of Do-It-Yourself Service Failure Turns Consumers from Competitors to Satisfied Customers. *Journal of Service Research*, 26(4). https://doi.org/10.1177/10946705221111347

Helal, G., Ozuem, W., & Lancaster, G. (2018). Social media brand perceptions of millennials. *International Journal of Retail & Distribution Management*, 46(10), 977–998.

Hess Jr, R. L., Ganesan, S., & Klein, N. M. (2003). Service failure and recovery: the impact of relationship factors on customer satisfaction. *Journal of the Academy of Marketing Science*, 31(2), 127–145.

Holloway, B. B., & Beatty, S. E. (2003). Service failure in online retailing: A recovery opportunity. *Journal of Service Research*, 6(1), 92–105.

Howell, K. (2013). *An Introduction to the Philosophy of Methodology*. Sage Publications.

Huang, Y. S. S., & Dootson, P. (2022). Chatbots and service failure: When does it lead to customer aggression. *Journal of Retailing and Consumer Services*, 68. https://doi.org/10.1016/j.jretconser.2022.103044.

Javornik, A., Filieri, R., & Gumann, R. (2020). 'Don't forget that others are watching, too!' The effect of conversational human voice and reply length on observers' perceptions of complaint handling in social media. *Journal of Interactive Marketing*, 50(1), 100–119.

Juaneda-Ayensa, E., Mosquera, A., & Sierra Murillo, Y. (2016). Omnichannel customer behavior: key drivers of technology acceptance and use and their effects on purchase intention. *Frontiers in Psychology*, 7, 1117.

Kipnis, E., McLeay, F., Grimes, A., de Saille, S., & Potter, S. (2022). Service robots in long-term care: a consumer-centric view. *Journal of Service Research*, 25(4), 667–685.

Kull, A. J., Romero, M., & Monahan, L. (2021). How may I help you? Driving brand engagement through the warmth of an initial chatbot message. *Journal of Business Research*, 135, 840–850.

Kumar, V., Rajan, B., Salunkhe, U., & Joag, S.G. (2022). Relating the dark side of new-age technologies and customer technostress. *Psychology & Marketing*, 39(12), 2240–2259.

Lazarevic, V. (2012). Encouraging brand loyalty in fickle generation Y consumers. *Young Consumers*, 13(1), 45–61. https://doi.org/10.1108/17473611211203939

Lee, C. T., Pan, L. Y., & Hsieh, S. H. (2022). Artificial intelligent chatbots as brand promoters: a two-stage structural equation modeling-artificial neural network approach. *Internet Research*, 32(4), 1329–1356.

Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019). Resistance to Medical Artificial Intelligence. *Journal of Consumer Research*, 46(4), 629–50.

Lteif, L., & Valenzuela, A. (2022). The effect of anthropomorphized technology failure on the desire to connect with others. *Psychology & Marketing*, 39(9), 1762–1774.

Lv, L., Huang, M., Guan, D., & Yang, K. (2022). Apology or gratitude? The effect of communication recovery strategies for service failures of AI devices. *Journal of Travel & Tourism Marketing*, 39(6), 570–587.

Maar, D., Besson, E., & Kefi, H. (2023). Fostering positive customer attitudes and usage intentions for scheduling services via chatbots. *Journal of Service Management*, 34(2), 208–230.

Magno, F., & Dossena, G. (2023). The effects of chatbots' attributes on customer relationships with brands: PLS-SEM and importance–performance map analysis. *The TQM Journal*, 35(5), 1156–1169.

Markert, J. (2004). Demographics of age: generational and cohort confusion. *Journal of Current Issues and Research in Advertising,* 26(2), 11–25.

Maxham III, J. G., & Netemeyer, R. G. (2002). A longitudinal study of complaining customers' evaluations of multiple service failures and recovery efforts. *Journal of Marketing*, 66(4), 57–71.

Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, 62(3), 279–301.

McColl-Kennedy, J. R., & Sparks, B. A. (2003). Application of fairness theory to service failures and service recovery. *Journal of Service Research*, 5(3), 251–266.

Melián-González, S., Gutiérrez-Taño, D., & Bulchand-Gidumal, J. (2021). Predicting the intentions to use chatbots for travel and tourism. *Current Issues in Tourism*, 24(2), 192–210.

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-service technologies: understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, 64(3), 50–64.

Moore, M. (2012). Interactive media usage among millennial consumers. *Journal of Consumer Marketing*, 29(6), 436–444.

Morse, J. M., & Clark, L. (2019). The nuances of grounded theory sampling and the pivotal role of theoretical sampling. In A. Bryant, & K. Charmaz (Eds.), *The SAGE Handbook of Current Developments in Grounded Theory* (pp. 145–166). SAGE Publications Ltd.

Mostafa, R. B., & Kasamani, T. (2022). Antecedents and consequences of chatbot initial trust. *European Journal of Marketing*, 56(6), 1748–1771.

Mozafari, N., Weiger, W. H., & Hammerschmidt, M. (2022). Trust me, I'm a bot– repercussions of chatbot disclosure in different service frontline settings. *Journal of Service Management*, 33(2), 221–245.

Nazifi, A., Gelbrich, K., Grégoire, Y., Koch, S., El-Manstrly, D., & Wirtz, J. (2020). Proactive handling of flight overbooking: how to reduce negative eWOM and the costs of bumping customers. *Journal of Service Research*, 24(2), 206–225.

Olmez, M. (2018, March 9). *How to Use AI in E-Commerce.* Accenture Insights. (accessed February 15, 2023) https://www.accenture.com/nl-en/blogs/insights/how-to-use-ai-in-e-commerce.

Ozuem, W., Ranfagni, S., Willis, M., Rovai, S., & Howell, K. (2021). Exploring customers' responses to online service failure and recovery strategies during Covid-19 pandemic: An actor–network theory perspective. *Psychology & Marketing*, 38(9), 1440–1459.

Ozuem, W., Willis, M., & Howell, K. (2022). Thematic analysis without paradox: sensemaking and context. *Qualitative Market Research*, 25(1), 143–157.

Ozuem, W., Willis, M., Howell, K., Ranfagni, S., & Rovai, S. (2023). Examining user-generated content, service failure recovery and customer–brand relationships: an exploration through commitment-trust theory. *Internet Research*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/INTR-07-2022-0580

Ozuem, W., & Willis, M. (2024). Artificial intelligence and Predictive Analytics: Towards a praxis of personalised shopping experience. In W. Ozuem, S. Ranfagni, & M. Willis (Eds.), *Digital transformation for fashion and luxury brands: theory and practice* (pp. 3–26). London: Palgrave.

Pavone, G., Meyer-Waarden, L., & Munzel, A. (2023). Rage Against the Machine: Experimental Insights into Customers' Negative Emotional Responses, Attributions of Responsibility, and Coping Strategies in Artificial Intelligence–Based Service Failures. *Journal of Interactive Marketing*, 58(1), 52–71.

Pillai, R., & Sivathanu, B. (2020). Adoption of AI-based chatbots for hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 32(10), 3199–3226.

Purani, K., Kumar, D. S., & Sahadev, S. (2019). e-Loyalty among millennials: Personal characteristics and social influences. *Journal of Retailing and Consumer Services*, 48, 215–223.

Rajaobelina, L., Prom Tep, S., Arcand, M., & Ricard, L. (2021). Creepiness: Its antecedents and impact on loyalty when interacting with a chatbot. *Psychology & Marketing*, 38(12), 2339–2356.

Roulston, K. (2010). *Reflective Interviewing: a guide to theory and practice*. Thousand Oaks, CA: SAGE Publications Ltd.

Ruan, Y., & Mezei, J. (2022). When do AI chatbots lead to higher customer satisfaction than human frontline employees in online shopping assistance? Considering product attribute type. *Journal of Retailing and Consumer Services*, 68, 103059.

Sheehan, B., Jin, H. S., & Gottlieb, U. (2020). Customer service chatbots: Anthropomorphism and adoption, *Journal of Business Research*, 115, 14–24.

Silva, S. C., De Cicco, R., Vlačić, B., & Elmashhara, M. G. (2023). Using chatbots in e-retailing–how to mitigate perceived risk and enhance the flow experience. *International Journal of Retail & Distribution Management*, 51(3), 285–305.

Smith, A. K., & Bolton, R. N. (1998). An experimental investigation of customer reactions to service failure and recovery encounters: paradox or peril?. *Journal of Service Research*, 1(1), 65–81.

Smola, K. W., & Sutton, C. D. (2002). Generational differences: Revisiting generational work values for the new millennium. *Journal of Organizational Behavior*, 23, 363–382.

Song, M., Du, J., Xing, X., & Mou, J. (2022). Should the chatbot 'save itself' or 'be helped by others'? The influence of service recovery types on consumer perceptions of recovery satisfaction. *Electronic Commerce Research and Applications*, 55, 101199.

Sousa, R., & Voss, C. A. (2009). The effects of service failures and recovery on customer loyalty in e-services: an empirical investigation. *International Journal of Operations & Production Management*, 29(8), 834–864.

Tax, S. S., Brown, S. W., & Chandrashekaran, M. (1998). Customer evaluations of service complaint experiences: implications for relationship marketing. *Journal of Marketing*, 62(2), 60–76.

Thomson, S. B. (2010). Sample size and grounded theory. *Journal of Administration and Governance*, 5(1), 45–52.

Tsai, W. H. S., Lun, D., Carcioppolo, N., & Chuan, C.H. (2021). Human versus chatbot: Understanding the role of emotion in health marketing communication for vaccines. *Psychology & Marketing*, 38(12), 2377–2392.

Van Vaerenbergh, Y., Varga, D., De Keyser, A., & Orsingher, C. (2019). The service recovery journey: Conceptualization, integration, and directions for future research. *Journal of Service Research*, 22(2), 103–119.

Wei, C., Liu, M. W., & Keh, H. T. (2020). The road to consumer forgiveness is paved with money or apology? The roles of empathy and power in service recovery. *Journal of Business Research*, 118, 321–334.

Wetzer, I. M., Zeelenberg, M., & Pieters, R. (2007). 'Never eat in that restaurant, I did!': Exploring why people engage in negative word-of-mouth communication. *Psychology & Marketing*, 24(8), 661–680.

Wu, L., Mattila, A. S., Wang, C.Y., & Hanks, L. (2016). The impact of power on service customers' willingness to post online reviews. *Journal of Service Research*, 19(2), 224–238.

Xu, Y., Shieh, C. H., van Esch, P., & Ling, I. L. (2020). AI customer service: task complexity, problem-solving ability, and usage intention. *Australasian Marketing Journal*, 28(4), 189–199.

Yu, S., Xiong, J., & Shen, H. (2024). The rise of chatbots: The effect of using chatbot agents on consumers' responses to request rejection. *Journal of Consumer Psychology*, 34(1), 35–48. https://doi.org/10.1002/jcpy.1330.

Zeithaml, V.A., Berry, L. L., & Parasuraman, A. (1993). The nature and determinants of customer expectations of service. *Journal of the Academy of Marketing Science*, 21, 1–12.

Zhu, Z., Nakata, C., Sivakumar, K., & Grewal, D. (2013). Fix it or leave it? Customer recovery from self-service technology failures. *Journal of Retailing*, 89(1), 15–29.

Zhu, Y., Zhang, J., Wu, J., & Liu, Y. (2022). AI is better when I'm sure: The influence of certainty of needs on consumers' acceptance of AI chatbots. *Journal of Business Research*, 150, 642–652.

Table 1: Chatbot-led service failure research

Research stream 1	Authors	Online communication interfaces	Customer control	Failure type	Customer–provider interpersonal contact	Generation of electronic WOM
Online and self-service-based failures	Bitner et al. (1990) Hess et al. (2003)	No	No	Process failure Service design failure	Yes	No
	Gerrath et al. (2023)	Yes	No	Process failure Service design failure	No	Yes
	Meuter et al. (2000)	Yes	Yes	Process failure Technology design Service design failure	Yes	Yes
	Zhu et al. (2013) Holloway & Beatty (2003) Azemi et al. (2019) Ozuem et al. (2021)	Yes	Yes	Process failure Technology design Service design failure	No	No
Research stream 2		**Enhanced desire for provider assistance**	**Impacts provider's responses**	**Amplifies customers' negative emotions**	**Customers' electronic WOM influenced by brand relationship**	**Interactional effectiveness**
Omnipresence of customers, firms and observers	Grégoire et al. (2015) Gerrath et al. (2023) Grégoire & Mattila (2021)	No	No	Yes	Yes	No
	Christodoulides et al. (2021) Javornik et al. (2020)	Yes	Yes	Yes	Yes	Yes
Research stream 3		**Specific failure type**	**Dual human–chatbot services**	**Humanlike characteristics impact trust**	**Human service provider intervention improves chatbot performance**	**Blame service provider or chatbot**
Chatbot service failures	Choi et al. (2021) Sheehan et al. (2020) Huang & Dootson (2022)	Process failure Outcome failure	Yes	Yes	Yes	Chatbot
	Pavone et al. (2023) Lteif & Valenzuela (2022) Rajaobelina et al. (2021) Kipnis et al. (2022)	Communication failure	No	Yes	No	Chatbot

Table 2: Sample's demographics

N°	Country	Gender	Age	Occupation
1	Italy	Female	28	UX designer
2	Italy	Female	25	Employee in fashion firm
3	Italy	Male	27	Exporter assistant
4	Italy	Female	26	University student (Fashion Management)
5	Italy	Female	24	Currently unemployed (master's degree)
6	Italy	Female	27	Employee in fashion firm
7	Italy	Male	22	University student (Marketing)
8	France	Female	22	University student (Communication Marketing)
9	France	Female	24	University student (Communication Marketing)
10	France	Female	25	University student (Digital Media and Marketing)
11	France	Female	25	University student (Speech, Language, and Hearing Sciences)
12	France	Male	27	Post-doc assistant in fashion design
13	France	Female	26	Store assistant in design furnishing
14	France	Female	26	University student (Arts—Media Advertising)
15	France	Male	20	University student and trainee (textile company)
16	United Kingdom	Female	27	Administration assistant
17	United Kingdom	Male	29	MBA student
18	United Kingdom	Female	19	University student (Business and Psychology)
19	United Kingdom	Female	25	MSc Marketing student
20	United Kingdom	Male	29	Procurement assistant
21	United Kingdom	Male	19	University student (Accounting and Finance)
22	United Kingdom	Female	20	University student (Events Management)
23	United Kingdom	Female	21	University student (Digital Marketing)
24	United Kingdom	Female	21	University student (International Business)
25	United Kingdom	Male	23	University student (Digital Marketing)
26	United Kingdom	Female	26	MSc Marketing student
27	United Kingdom	Male	20	University student (International Business)
28	United Kingdom	Female	28	MBA student
29	United Kingdom	Male	25	MSc Marketing student
30	United States	Female	19	University student (Media and Music)
31	United States	Female	19	University student (Business)
32	United States	Female	20	University student (Business)
33	United States	Female	20	University student (Marketing)
34	United States	Male	20	University student (Marketing)
35	United States	Male	22	University student (Marketing)
36	United States	Female	21	University student (Marketing)
37	United States	Female	23	University student (Finance)
38	United States	Female	22	University student (Fashion and Marketing

39	United States	Male	22	University student (Marketing and Advertising)
40	United States	Female	22	University student (Marketing and Advertising)
41	United States	Male	19	University student (Media and Music)
42	United States	Male	20	University student (PR and Marketing)
43	United States	Female	19	University student (Fashion and Marketing
44	United States	Male	19	University student (Media and Music)
45	United States	Female	20	University student (Fashion and Marketing
46	United States	Male	20	University student (PR and Marketing)
47	United States	Male	23	University student (PR and Marketing)

Table 3: Thematic categories

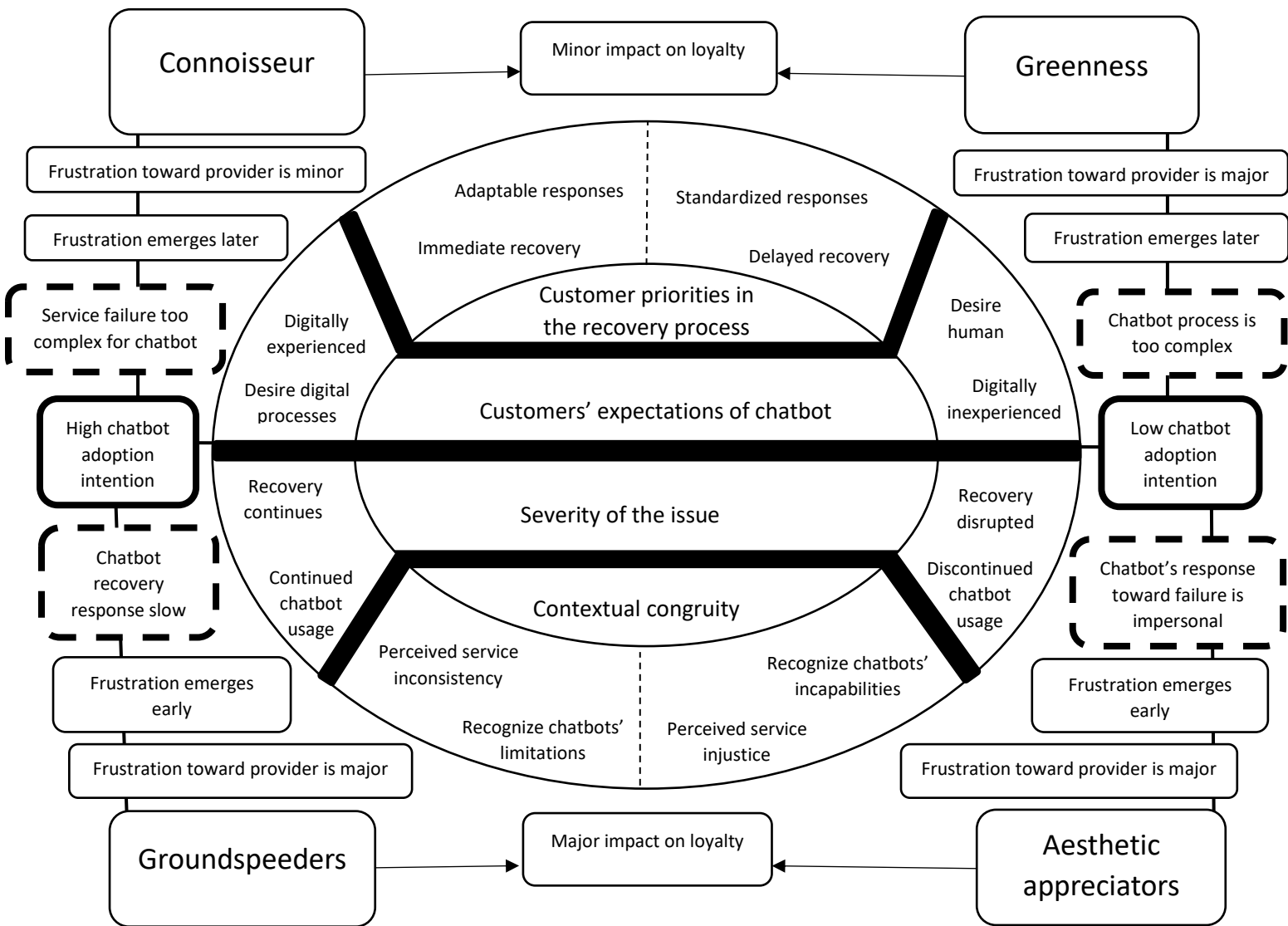| Major themes	Definition	Keywords
Customers' priorities in the recovery process	Customers have specific expectations of the performance of, and experiences of, chatbot-based service recovery processes. These expectations influence their prioritization of chatbots in the recovery procedure and their evaluation of the recovery experience	Speed Automatic help Reduced wait time Customer services Streamlined Time-sensitive situation Personalized Emotional support Apologizing Impersonal
Customers' expectations of a chatbot	Customers have specific expectations of the performance of, and experiences of, chatbot-based service recovery processes. Customers' expectations of chatbots are driven by the level of actual experience they have and by the preconceptions they have of technology, which affects their acceptance of new chatbot technology	Guaranteed quality customer service Investing the time Confined interaction Disappoint customers Viable option Expectations vary Easier to work Reliable Automation does not undermine Complex scenario
Severity of the issue	The severity of service failures can predetermine customers' perceptions of chatbots' ability to deliver effective service recovery processes without customer personnel intervention. Chatbots' level of ability to overcome highly complex issues can lead to recovery paradox or a double deviation effect	Complex issues Simple problems Frustrating Limited number of problems Inconvenience in reporting Informative Refers to the customer service Level of emotional intelligence Human empathy
Contextual congruity	Customers' satisfaction with chatbot-based experiences is influenced by the consistency between chatbots and service recovery processes and exchanges between the customer and the chatbot. Customers can be influenced by the ease of interaction with chatbots and by chatbots that are able to determine their service recovery needs	Express regret for poor service Empathy Comprehension Detect problem Companies focused around chatbots Automated message overwhelming Easy-to-use user interface

Figure 1: Chatbot-led service failure recovery customer typology framework (CAGG)

Priority on speed of
recovery

Minor   Major

High | | High

<u>Greenness</u>   **<u>Aesthetic appreciators</u>**

Provide clear guidelines on applying   Embed interpersonal attributes through
chatbot for service recovery   chatbot

Encourage to seek assistance from   Conduct human–chatbot co-creation
experienced customers   strategy

Frustration
Aggression

Desire for human
assistance

<u>Connoisseur</u>   **<u>Groundspeeders</u>**

Maintain positive relationship with, and   Prompt chatbot recovery responses are
loyalty to, the brand   essential

Self-recovery processes   Conduct chatbot–human contact if
recovery is further delayed

Can assist in increasing knowledge and
application of chatbot usage

Low | | Low
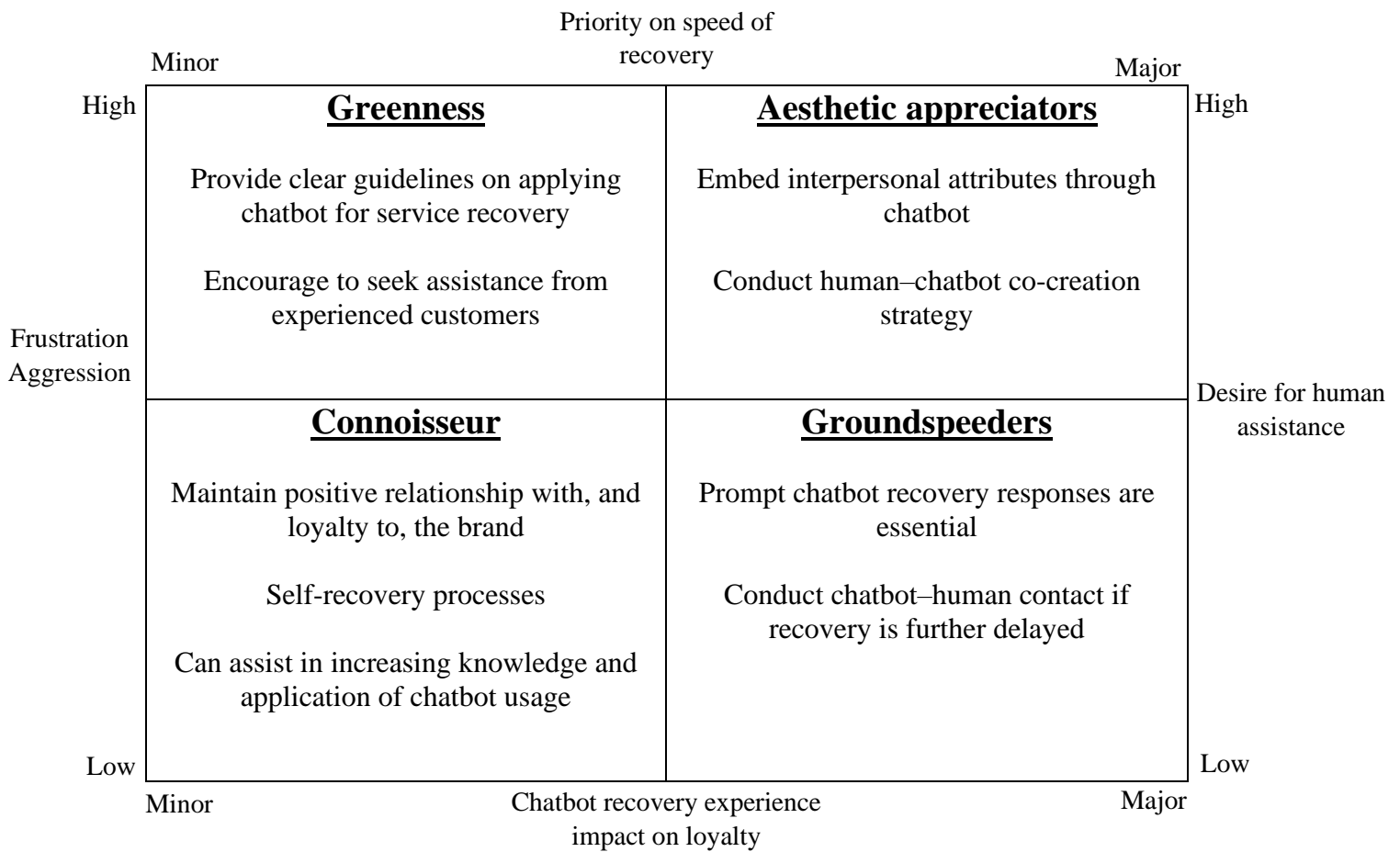
Minor   Chatbot recovery experience   Major
impact on loyalty

Figure 2: Chatbot customer matrix