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CHATBOTS IN SERVICE RECOVERY: A CONSUMER BEHAVIOR PERSPECTIVE

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ABSTRACT

In modern technology-based service settings, service failures are unavoidable and service recovery has become a dominant application of AI-based chatbots in the organizations. The paper looks at chatbot-mediated service recovery through the prism of consumer behaviour, particularly the consumer satisfaction and post-recovery behavioural intentions. A descriptive research design was used and primary data were gathered using a structured questionnaire on 300 consumers who had encountered chatbot-trated service recovery in various selected fields of services. It has been analyzed that chatbot led recovery has a positive impact on consumer satisfaction, restoration of trust, intention to repurchase, and positive word-of-mouth provided that recovery responses are seen as efficient, fair, and well-communicated. The results however also show that the perceived empathy and emotional responsiveness also limit the effectiveness of chatbot recovery in complex or emotionally sensitive situations of service failure. It also points to the strategic importance of chatbots in coping with common service failures and provides a reminder of the fact that hybrid recovery frameworks that incorporate human mediation are crucial to mitigate the emotional and relationship dimension of service interactions. The results offer idea-elements applicable to managers in organizations aiming to create effective AI-based service recovery services, which are efficient enough and customer-centric at the same time.

KEYWORDS: Chatbots, Service Recovery, Consumer Behaviour, Artificial Intelligence, Customer Satisfaction, etc.

1. INTRODUCTION

High-contact and technology-mediated services inevitably experience service failures, and the quality of service recovery is quite likely to either result in the dissatisfied customer leaving, publicly complaining, or recovering the relationship with the firm. Traditional service recovery studies reveal that post-derailed assessment is greatly influenced by perceptions of distributive, procedural, and interactional fairness that, subsequently, lead to satisfaction recovery, repurchase intentions, and outcomes of the word-of-mouth (Tax et al., 1998; Smith et al., 1999; Maxham, 2001). Metanalysis findings also support the argument that complaint management and perception of justice are strong predictors of customer reactions in all situations which justifies service recovery as a strategic ability instead of a tactical Band-Aid (Gelbrich, 2011; Van Vaerenbergh et al., 2018). Since services are shifting to the digital medium, interactions of recovery also happen through technology-facilitated touchpoints, shifting customer perceptions of effort, empathy, responsiveness, and accountability (Singh, 2016).

It is against this background that companies are throwing chatbots using AI to act as frontline recovery agents since they promise frontline availability, quickened response, and scaled processing of customer grievance in large quantities. But transferring recovery out of human hands to chatbots brings about entirely different dynamics of consumer behaviour: customers can judge the response of a chatbot based not only on its results (as with recovery like refund, replacement) but also social aspects (i.e. how social the interaction feel is, conversational tone, etc.). According to the previously existing research related to the use of chatbots in customer service, it means that the satisfaction and continuance intentions are conditioned by the fact whether the interaction is useful, easy, and the quality of the service provided, and the necessity of a human interaction in case the situation is complicated or emotionally evoked (Araujo, 2018; Adam et al., 2021). This is more so valid in service recovery where a higher level of interactional justice sensitivity is increased by anger, attribution of blame and the need to be reassured.

Recent research has thus been starting to investigate when and how chatbots will be useful in service recovery. This may be evidenced by empirical studies indicating that chatbot characteristics and approaches to communication can form a sense of trustworthiness and have a downstream impact, including consumer forgiveness and negative word-of-mouth (Agnihotri, 2024). The anthropomorphic design Cues can also modify the customer expectations concerning recovery performance and influence the bias of customers to switch out bots in favor of human agents, in particular, after failure (Lu et al., 2024). The evidence of the latter suggests that text-based recovery can be enhanced with the help of perceived empathy and social presence through the use of emotionally expressive language (e.g., "emotion words"), which subsequently leads to better customer responses to chatbot service encounters, such as customer satisfaction and positive word-of-mout (Yun et al., 2022).

Although such advancements have been made, consumer behavior mechanisms that will dictate the operation of the chatbot led recovery have not been specifications made. The most important open questions are how customers make trade-offs between speed and empathy, how perceptions of fairness are formed where an algorithm is the face of the firm, and how perceived controllability or need of human intervention (boundary conditions) increase or mitigate the effect of recovery. Based on that, a consumer behavior approach to the study of chatbots in service recovery is opportune: it would be able to marry justice theory with technology-oriented constructs (e.g., trust in AI, anthropomorphism, transparency) to clarify under which circumstances chatbots can restore satisfaction and loyalty - and when they will actually increase frustration and switching intentions.

2. LITERATURE REVIEW

Service recovery has been identified as key to dealing with customer dissatisfaction after service failures with positive recovery manifesting better customer satisfaction, loyalty and word-of-mouth results (Maxham and Netemeyer, 2002; McCollough, Berry and Yadav, 2000). As digital channels are becoming more widespread, especially an artificial intelligence (AI) chatbot, the mechanics and the results of the recovery efforts were transformed into a human-mediated interaction and to technology-mediation interaction, and the scholarly research has given scholars the opportunity to examine how consumers understand and respond to automated recovery efforts (Ozuem et al., 2024). The existing literature emphasizes several aspects of the chatbot use in the recovery process, such as emotional reactions, perceived competence and warmth, justice perceptions, and co-creation processes in human-AI interface.

One of the main research areas is the impact of chatbot communication strategies on consumer outcomes. Yun, Park, and colleagues (2022)

empirically tested the influence of emotion word inclusion of chatbot response on customer satisfaction, intention to purchase again and positive word-of-mouth after customer service interaction. Their results shows that emotional language improves the perceptions of the customers about empathy and interactivity causing an increase in customer satisfaction and the intention of behavior after chatbot responses as opposed to the neutral, task-oriented responses. This paper goes beyond conventional models of service quality by showing how emotional prompts during chatbot conversation (that are related to human communication) can have a strong impact on recovery perceptions, indicating that emotional expression can be considered an important aspect even in the context of automated communication.

Based on the psychological basis of consumer response to service failure, Ozuem and others (2024) investigated the impact of frustration and aggression as a result of chatbot service failure with customer loyalty and technology acceptance. Their study highlights the fact that the effects of negative emotional reactions are limiting the intentions to show loyalty as well as defining the future involvement in using AI services, drawing the affective responses as mediators of automated recovery situations. This work places emotions at the core of consumer behavior studies within the framework of chatbots recovery by defining frustration and aggression as crucial defining variables of the post-failure evaluations.

The other stream under investigation is anthropomorphism, and the feeling of humanness when interacting with a chatbot. In this study, Rese and Witthohn (2025) explored the effect of design features on the perceived competence and user satisfaction with service recovery situations in terms of perceived gender and warmth. Their experimental results indicate that warmer and more competent chatbots are perceived to evoke more perceived humanness and satisfaction, especially in case the recovery endeavors succeed. These findings are consistent with the theory of anthropomorphism and indicate that negative responses that occur as a result of service failures can be reduced by a perceived social presence and human-like characteristics hence mediating consumer judgments towards automated recovery.

Research into the sense of justice and effectiveness of chatbots in the recovery context also demystifies the consumer behavior process. The article by Lee concerning the AI chatbot intervention in the wake of human service failures proposes the variable of perceived justice and AI effectiveness as precursors to critical recovery metrics, including forgiveness and post-recovery satisfaction. Notably, the study concludes that the perceptions of reasonable fairness and effectiveness of chatbot reply by customers affects the readiness to build confidence again and adopt automated recovery and anthropomorphism potentiates such impacts. This integrative model connects service recovery theory to technology acceptance as well as implies that perceived justice can also work in the same way in an automated context as it would in a human led recovery.

In line with the above, social mindfulness and trust repair investigations widen knowledge on consumer-AI co-creation in the recovery process. As shown by Meng, Xiao, Dong, and Lei (2024), the perceptions of customers towards the social mindfulness, as the perception of intelligent customer services, attentiveness, responsiveness, and relational consideration, have a positive impact on trust restoration. Their results also show the mediating influence of the perceived risk and relationship-based self-esteem, which implies that consumers involve themselves in more complicated cognitive and affective considerations in case of communication with chatbots during a recovery setting. This places trust as the key result of behaviors and emphasizes the relationship between consumer mentality and AI service features.

Finally, the literature sources on hybrid recovery strategies, when chatbots and human agents need to cooperate provide effective information to the resilience studies on the best recovery design. The research indicates that timely and supportive ways of the change between the automated and the human support markedly influence the recovery satisfaction with the help of attributions of intent and fairness made by customers. To exemplify, research data shows that ineffective human intervention activation following a chatbot failure is able to support and sustain negative attributions and weaken satisfaction, and that, well-planned transitions can strengthen perceptions of service responsiveness.

In combination, these articles help to emphasise that consumer reactions to the service recovery by chatbots can be evaluated not only in terms of the traditional outcome measures but also in terms of emotional, social and justice-related views. Future studies need to combine these dimensions in detailed models that explain individual variation, contextual factors as well as combinations of these two as complex service architectures to more accurately forecast consumer behavior in automated recovery systems.

1.1. Objectives of the Study

- To investigate the consumer perception about chatbot-mediated service recovery in regards to fairness, empathy, responsiveness, and overall satisfaction after service failures.
- To examine the effectiveness of chatbot features (e.g., emotional tone and perceived humanness and competence) in affecting consumer behavioural outcomes, e.g., trust restoration, repurchase intention and word-of-mouth.
- To determine in which circumstances chatbot-based service recovery works or fails especially when considering the level of failure, intensity of emotions, and whether it requires human intervention or not.

1.2. Hypothesis

H_1: Chatbot-led service recovery has a significant and positive impact on consumer satisfaction and post-recovery behavioural intentions following service failure.

2. METHODOLOGY

The research design used in the study is descriptive research design to analyse consumer perception and behavioural response relating to chatbot-based service recovery after service failures in a systematic manner. In this manner, the design is suitable because the study needs to state the current patterns of consumer experience rather than define causal relationships. There was also a structured questionnaire method used to collect primary data and on it, standard and measurable responses were received by the consumers who had used chatbots in the course of service recovery. The questionnaire consisted of two parts, the first section was focused on obtaining the demographic information about the respondents and the second part contained statements on perceptions of chatbot performance and post-recovery behavioural intentions, measured on a five-point Likert scale, with options of Strongly disagree to Strongly agree. The sample was 300 respondents which was deemed as sufficient in conducting descriptive and basic inferential analysis in consumer behaviour research. The respondents were sampled in a purposive method (non-probability) in which only those participants who had encountered service recovery by chatbot experience in the banking industry, e-commerce (online business), telecommunication, and travel service were sampled. This approach in the methodology made sure that the data collected were relevant, reliable and analytically consistent in order to realize objectives of the study.

3. RESULTS AND DISCUSSION

The responses obtained on 300 respondents who used chatbot-based service recovery were analysed in order to understand consumer perceptions and behaviour reactions towards service failures. The patterns of responses, the degree of the agreement, the connection between chatbot service recovery and post-recovery behavioural intentions are analyzed.

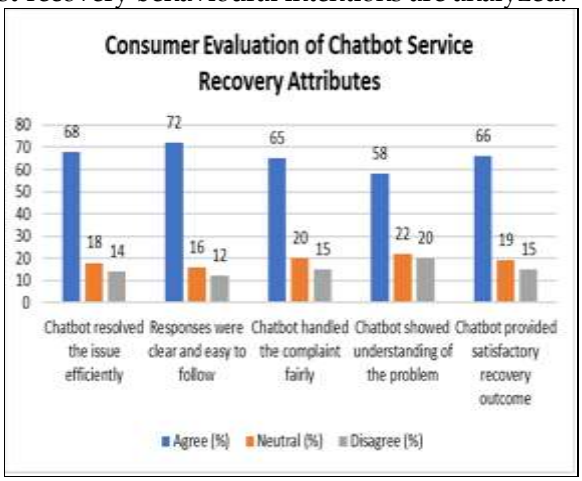

Fig 1: Chatbots Service Recovery Attributes.

A significant percentage of the participants supported the statements involving efficiency, clarity, and fairness of chatbot-monitored service recovery. Nevertheless, there are relatively lower levels of agreement when emotional understanding is concerned, which implies that the chatbots are fine on the functional aspect but when it comes to emotional responsiveness, the recovery situation is problematic.

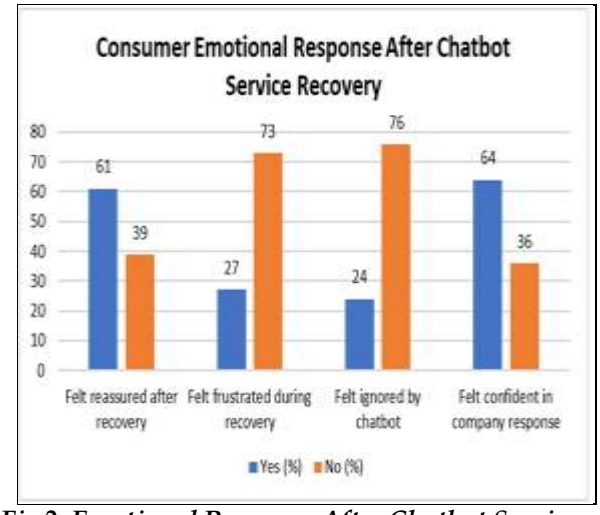

Fig 2: Emotional Response After Chatbot Service Recovery.

These findings show that most consumers were assured and empowered having engaged with chatbots in seeking recovery of services. Nonetheless, a significant minority noted that they experienced frustration or were not listened to, which implies that chatbot-based recovery systems are not sufficient to cover the emotional issues in every situation, especially with complex or high severity service failures.

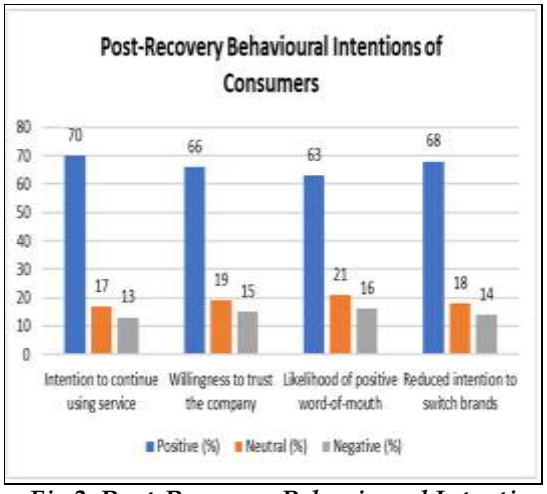

Fig 3: Post-Recovery Behavioural Intentions.

The results indicate that active chatbot service recovery is a positive implication on primary behavioural outcome. The great majority of the respondents expressed the intention to keep using the service and keep trusting the firm, which proves that the use of chatbot-based recovery can eliminate the adverse service failure effects when properly implemented.

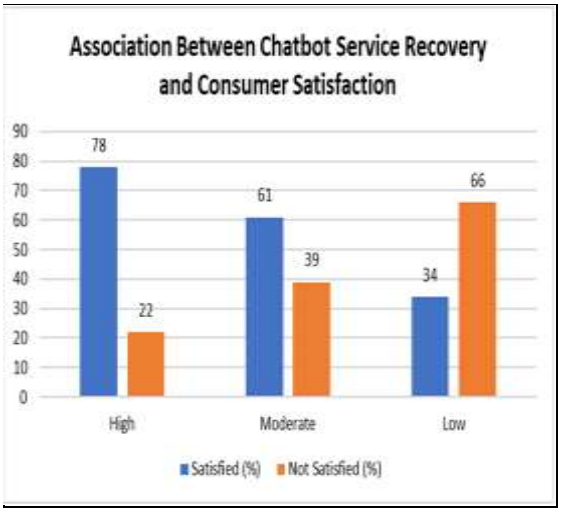

Fig. 4: Chatbot Service Recovery and Consumer Satisfaction.

The perceived quality of the chatbot service recovery had a great difference in consumer satisfaction. Good recovery translated to a significant increase in the level of satisfaction, and bad recovery performance on the part of the respondents resulted in dissatisfaction. This means that the efficacy of chatbots is important in the process of influencing post-failure assessments.

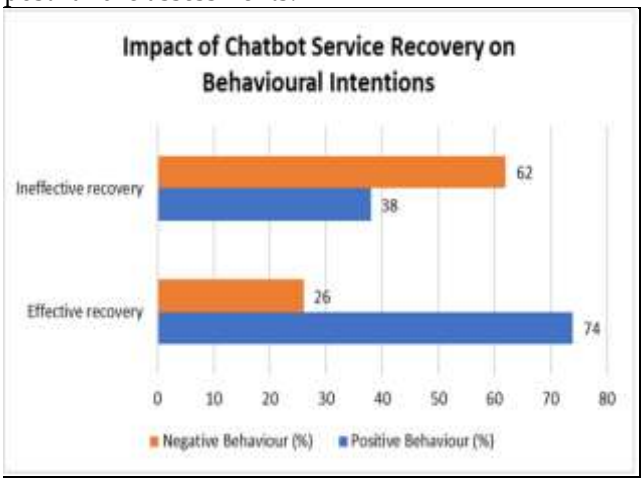

Fig 5: Chatbot Service Recovery and Behaviour Intentions.

The comparative analysis has revealed that there is a certain distinction in consumer behaviour in the performance of chatbot service recovery. A good recovery makes the positive behavioural reactions (loyalty and advocacy) much higher whereas the ineffective recovery scenario provokes more negative reactions (dissatisfaction and switching) as well.

The analysis reveals that the chatbot-based service recovery is a significant determinant of consumer satisfaction and post-recovery behaviour intention. Although chatbots are seen to be effective and equal in terms of managing service failure, their small emotional responsiveness is a major weakness. The results support the idea that chatbot recovery systems can be strategically effective provided that they are built into clear, un-timely and equal solutions and that they have tools of escalation to human agents in the cases when emotional sensitivity is needed.

4. HYPOTHESIS TESTING

Simple regression analysis was used to analyse the hypothesis of whether talkbot-guided service recovery has a significant influence on consumer satisfaction and post recovery-behavioural intentions. The effectiveness of Chatbot service recovery was the independent variable, whereas the overall consumer satisfaction and behavioural intention were taken as the dependent outcome.

Table 1: Effect of Chatbot Service Recovery on Consumer Behaviour.

Variable	Beta Coefficient	t-value	Significance (p)
Chatbot Service Recovery	0.58	8.46	< 0.05

The outputs of the regression analysis showed that chatbot-sustained service recovery is positively and statistically significantly affecting consumer satisfaction and post-recovery behavioural intentions. The fact that the beta (b = 0.58) is positive indicates a positive contribution of increases in chatbot recovery effectiveness building the levels of satisfaction, trust, and favourable behavioural reactions including repurchase intention and positive word-of-mouth. The use of a significance value that is less than 0.05 proves that the relationship is statistically significant. Therefore, the null hypothesis is disapproved and the alternative one accepted. The implication of this finding is that chatbot-based service recovery, perceived to be effective and fair can be effective in alleviating adverse outcomes of service failure and result in a better outcome of consumer behaviour.

4.1. Discussion

The group of the study shows that chatbot-based service recovery has a major contribution to the formation of consumer satisfaction and post-recovery behavioural intentions, including a case when the recovery process may be seen as efficient, fairly, and well-told. This analysis shows that chatbot recovery functions, including timely solution and understandability of response, are important contributions to consumer appraisals, which confirms previous studies that distributed and procedural justice are vital to technology-mediated service arrangements. Even though there were positive effects on behavioural changes, including positive perseverance to use, regained trust, and a decreased intention to switch, as was the case in the event of the successful use of chatbots to recover, limitations in emotional responsiveness have subdued the total satisfaction of a group of consumers. It implies that chatbots can handle common recovery cases but their efficiency in sensitive service failures involving consumers and feeling of empathy and reassurance might decrease. The clear correlation of chatbot recovery and consumer behaviour not only indicates the importance of AI-based recovery as a strategy, but also the necessity to implement hybrid service frameworks incorporating the human touch to build more meaningful emotional experiences and improve loyalty between customers and the company in the long term.

5. CONCLUSIONS

The researchers find that the effect of chatbot-facilitated service recovery is very positive and substantial in consumer satisfaction and recovery behavioural intentions. The results show that consumers tend to regain a more trusting relationship with service practitioners, thereby making a positive word of mouth when chatbots give them timely, clear and fair service failure resolutions. Chatbots are also ideal in dealing with the common and low-to-moderate-severe service failures where the speed and consistency are appreciated according to their emotive nature. Nonetheless, the paper also indicates that the effectiveness of chatbot-based recovery may be minimized in a more complicated or emotionally charged context due to constraints on emotional responsiveness and perceived empathy. Altogether, it can be concluded that chatbot-based service recovery may become a useful strategic resource of organizations, although it has to be adjusted to the expectations of consumers and backed by the reasonable service design.

RECOMMENDATIONS: According to the results, it is possible to recommend the companies to work on the improvement of chatbot service recovery mechanisms by means of improvement in conversational design, use of emotion, and understandability of response actions in the context of consumers related concerns in the case of service failure. The addition of some mechanism of escalation where the chatbot relinquishes control to human agents can be advised especially on high severity complaints or complaints of emotions. The companies are also encouraged to consistently track the consumer responses to improve the scripts used in chatbots to recover the data and make recovery process more fair and transparent. Building up consumer trust and satisfaction can also be enhanced by training chatbots to identify consumer frustration and adjust the response to it. Organizations can enhance the effectiveness of recovery and encourage long-term customer loyalty by following a hybrid service recovery model, which may represent the use of chatbots to boost efficiency and empathy by human agents

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