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HOW WELL CAN CHATGPT MANAGE SERVICE FAILURES?

¿QUÉ TAN BIEN PUEDE CHATGPT GESTIONAR LAS FALLAS DEL SERVICIO?

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Abstract

This study examines the effectiveness of ChatGPT-40 in the service recovery processes for service failures in hotel businesses. Study data were collected through semi-structured interviews with hotel businesses and customers. Two different interview forms were created. The first of these interview forms is the Interview-1 coded form for hotel business employees and managers. In Interview-2, the criteria are that the customers have experienced at least one service failure in the past and that they have stayed at the hotel business within the last year. Purposive sampling was applied in both Interview-1 and Interview-2. Within the scope of these criteria, interviews were conducted with 9 hotel business employees (including managers) in Interview-1. In Interview-2, 19 customers were interviewed. The results indicate that ChatGPT-40 could be more effective than human resources in the recovery of service failures and plays a significant role in enhancing customer satisfaction. This study assesses the potential of ChatGPT-40 in service recovery processes and offers innovative solutions to improve service quality and customer satisfaction in the tourism sector.

Keywords: ChatGPT-40, Service Failures, Service Recovery, Hotel Businesses, Customers

Resumen

Este estudio examina la efectividad de Chat-GPT-40 en los procesos de recuperación de fallas de servicio en empresas hoteleras. Los datos del estudio se recopilaron por medio de entrevistas semiestructuradas con empresas hoteleras y clientes. Se crearon dos formularios de entrevista diferentes. El primero fue codificado como Entrevista-1,



para empleados y gerentes de empresas hoteleras. El segundo, Entrevista-2, se aplicó a los clientes que hubiesen experimentado al menos un fallo en el servicio en el pasado y que se hayan alojado en el negocio hotelero durante el último año. Se aplicó un muestreo intencional en ambas entrevistas. En el marco de estos criterios, se realizaron entrevistas a nueve empleados de empresas hoteleras (incluidos directivos) y a diecinueve clientes. Los resultados indican que ChatGPT-40 podría ser más efectivo que los recursos humanos en la recuperación de fallas de servicio y que desempeña un papel importante en la mejora de la satisfacción del cliente. Este estudio evalúa el potencial de ChatGPT-40 en los procesos de recuperación de servicios y ofrece soluciones innovadoras para mejorar la calidad del servicio y la satisfacción del cliente en el sector turístico.

Palabras clave: ChatGPT-40, fallas de servicio, recuperación de servicio, empresas hoteleras, clientes

1. Introduction

The tourism sector holds significant economic and social importance, making customer satisfaction critical to the success of this industry. The significance of the human factor in the service industry and the evolving customer expectations over time render service failures inevitable (Yang et al., 2023). Disruptions and service failures are unavoidable regardless of how well the service production process is planned (Shams et al., 2021). This situation is similar to hotel operations within the tourism sector because human resources are responsible for service production. Businesses that cannot prevent service failures develop various strategies to compensate for these errors (Ali et al., 2023). These strategies, which are crucial for customer satisfaction, are known as service recovery strategies (Akarsu et al., 2023). Service failures impact customer satisfaction, increasing negative reviews and complaints. To avoid losing customers and to prevent the deterioration of relationships after a service failure, businesses focus on the service recovery process.

Service failures contribute to discovering truths (Bagherzadeh et al., 2020). By successfully managing the service recovery process, businesses gain the opportunity to deliver accurate and high-quality services (Yadav & Dhar, 2021). Service recovery is a second chance for the business to provide correct and quality service. If the recovery process is poorly managed after a service failure, it can exacerbate customers' negative perceptions and emotions (Elbaz et al., 2023). Therefore, it is crucial for human resources in businesses to provide satisfactory solutions to service failures. Equally necessary as human resources are the extent to which businesses benefit from advancements in artificial intelligence (Ho et al., 2020).

Artificial intelligence (AI) advancements demonstrate that various technological applications assist human resources during and after service production (Xing et al., 2022). These technological applications, such as chatbots, deliver high-quality service by ensuring continuity and saving time in service production (Wirtz et al., 2018). AI is also beneficial in innovating and sustaining service production (Lv et al., 2022). Additionally, AI can effectively respond promptly and satisfactorily to customer complaints (Xu & Liu, 2022). In this context, one of the noteworthy recent applications is ChatGPT (Demir & Demir, 2023a). It is known that customer complaints are effectively evaluated with ChatGPT



(Dalgıç, 2023). Moreover, various studies are being conducted to identify the application areas of ChatGPT in the tourism sector.

These studies explore various aspects such as the potential use of ChatGPT in tourism (Carvalho & Ivanov, 2024; Demir & Demir, 2023b; Dwivedi et al., 2024; Gursoy et al., 2023; Shin & Kang, 2023), the creation of tourism marketing materials with ChatGPT (Zhang & Prebensen, 2024), the potential contributions of ChatGPT to tourists (Ali et al., 2023; Christensen et al., 2025; Kim et al., 2024; Pham et al., 2024; Shi et al., 2024), the impact of ChatGPT on employees and the potential effects of ChatGPT on travel agencies (Demir & Demir, 2023a). However, there is no research examining whether service failures are effectively resolved with ChatGPT.

The tourism sector is a dynamic industry that continually seeks innovative solutions to ensure customer satisfaction (Truong et al., 2020). In this sector, where service failures are inevitable, service recovery strategies are crucial for minimizing customer dissatisfaction (Edström et al., 2022). Traditional service recovery strategies are shaped by the efforts of human resources. However, with the rapid development and widespread adoption of artificial intelligence technologies, questions have emerged about how these technologies can be utilized in service recovery processes (Xing et al., 2022). Advanced AI applications, particularly ChatGPT, offer groundbreaking innovations in customer service and complaint management (Demir & Demir, 2023a). The capability of ChatGPT to effectively evaluate and resolve customer complaints highlights the potential of this technology (Koc et al., 2023). Nevertheless, there is currently no study in the existing literature examining the effectiveness of ChatGPT in service recovery.

This research gap represents a significant obstacle to enhancing customer satisfaction in the tourism sector. Investigating ChatGPT's capacity for service recovery is critically important for both academic literature and industry practices. According to Cheng et al. (2024), ChatGPT's emotion recognition abilities suggest that this technology may be more effective in service recovery than human resources. In this context, determining the performance of ChatGPT in service recovery processes and its impact on customers will enable the reshaping and optimization of service recovery strategies. In summary, this study aims to address a significant research gap in the tourism sector by exploring how ChatGPT can be utilized in service recovery processes and its effects on customer satisfaction. The effectiveness of ChatGPT in service recovery processes, compared to human resources, will be evaluated within the frameworks of justice theory and attribution theory, offering innovative and practical solutions to the industry.

In line with these explanations, the first objective of the research is to determine how ChatGPT resolves service failures and compare it with the solutions provided by hotel human resources. In this context, the performance of ChatGPT in compensating for service failures will be examined in comparison to human resources. The second objective of the research is to reveal the impact of ChatGPT and human resources' resolutions of service failures on customers. Accordingly, the main research questions are as follows:

Q1-) How does ChatGPT's performance in service recovery processes compare to that of human resources?



- Q2-) How does ChatGPT's capacity for service recovery fare within the framework of justice theory?
- Q3-) How can ChatGPT's ability to address and compensate for service failures be evaluated in the context of attribution theory?
- Q4-) How effective are ChatGPT's service recovery strategies in terms of service quality dimensions?
- Q5-) What are the behaviors and reactions of customers experiencing service failures towards ChatGPT's recovery strategies?

In accordance with these research questions, interviews with hotel human resources are conducted to identify memorable service failures. Additionally, the service recovery solutions for these failures are learned. These service failure recovery solutions are then re-executed using ChatGPT in accordance with justice theory, attribution theory, and service quality dimensions.

2. Chatgpt and tourism

ChatGPT, developed by OpenAI in the last months of 2022, is an AI application made available for public use. Based on AI and natural language processing, ChatGPT is employed as a conversational tool. Its ability to generate, review, and respond to various files, such as images and texts, in a manner consistent with human nature, sets it apart from other AI applications (Kasneci et al., 2023). The capability to generate human-like responses has led to the widespread adoption of ChatGPT by individuals and businesses (Javaid et al., 2023). One of the areas where ChatGPT is widely used or has significant potential is the tourism sector (Demir & Demir, 2023a). It is known that ChatGPT has the potential to make an impact in various domains within the tourism industry, including businesses, tourists, education, and destination management (Gursoy et al., 2023).

ChatGPT creates value for tourism businesses, customers, and employees. Hotel enterprises and travel agencies can use ChatGPT to improve customer satisfaction and provide prompt, satisfactory responses (Demir & Demir, 2023a). Tourism businesses in the sector have the opportunity to create tourism marketing materials with the help of ChatGPT (Zhang & Prebensen, 2024). ChatGPT impacts not only customers but also employees, significantly contributing to the enhancement of their skills and knowledge, resolving language barriers, and preparing creative suggestions.

Both students and researchers in the tourism field can derive various benefits from using ChatGPT (Ali & OpenAI, 2023). In the context of tourism education, ChatGPT supports the development of data-driven insights by creating opportunities for personalized learning. ChatGPT enhances students' learning outcomes and digital literacy (Dalgıç et al., 2024). Altun et al. (2024) noted that educators might be biased against ChatGPT due to its potential to provide inconsistent and outdated information to students.



ChatGPT assists tourists in various ways before, during, and after their travels. Pham et al. (2024) argue that tourists' attitudes and trust towards ChatGPT positively influence their satisfaction and continuous usage intentions. Tourist satisfaction is also a key determinant in the usage of ChatGPT. AI tools like ChatGPT facilitate tourists' information search and decision-making processes (Kim et al., 2024), as tourists can resolve their issues promptly with ChatGPT. Despite these positive aspects, there are some negative perceptions among tourists regarding ChatGPT. Tourists are skeptical about ChatGPT concerning its usage, privacy, and accuracy risks (Shi et al., 2024).

3. Service recovery and the theories used

The desire of businesses to stand out in competition by providing flawless service to consumers has accelerated with globalization. Therefore, service failures are situations businesses do not wish to encounter but are likely to face due to the inherent characteristics of service processes, even if managed well (Choi et al., 2021). Koc (2017) defines service failure as any issue that arises during service delivery, such as delays, obstacles, deficiencies, or errors in meeting customer needs and expectations. Today, consumers can quickly express dissatisfaction with service experiences through various social media platforms (Koç et al., 2023).

Service recovery includes actions and activities undertaken by service marketers and businesses to correct, alter, and improve the negative experiences encountered by customers due to failures in service delivery (Van Vaerenbergh et al., 2019). In the labor-intensive tourism sector, common service failures reported by customers include issues related to service delivery, reservation processes, employee behavior, and billing errors (Yang & Mattila, 2012). Commonly preferred service recovery practices in the tourism sector include refunds, credits, compensation, discounts, and providing another service free of charge.

By its nature, service possesses specific heterogeneous and complex characteristics. The tourism sector, a significant part of the service industry, is complex due to the inherent intangibility, heterogeneity, and perishability of services. Therefore, it is prone to service failures (Ayyildiz et al., 2024). Service recovery encompasses a series of actions aimed at resolving issues dissatisfied customers face during their experiences, thereby ensuring their satisfaction with the service provided (Van Vaerenbergh et al., 2019).

One of the most common theories associated with service failures and recovery is attribution theory (Koc et al., 2023). Attribution theory, founded by Heider (2013), is a psychological theory that explains individuals' efforts to understand the reasons behind the events they experience and the behaviors they encounter. According to this theory, individuals strive to make sense of events by attributing behaviors to specific causes. From the perspective of marketing and consumer behavior, customers make causal inferences when evaluating the reasons behind service failures (Van Vaerenbergh et al., 2019). The perceived cause of the service failure, as inferred by the customer, significantly influences their subsequent reactions, highlighting the profound impact of attribution theory in the service industry (Albrecht et al., 2017).



In the literature, equity theory, also known as justice theory (Kwong & Jang, 2012), was fundamentally developed by Adams in 1968. It describes how individuals, particularly customers, assess their outcomes compared to their inputs to determine whether a fair result has been achieved (Joshi, 1990). After experiencing a negative situation or dissatisfaction, a customer plays a crucial role in evaluating the business's effort to rectify the issue against the time, effort, and costs they have incurred. This evaluation process, explained by justice theory, underscores the importance of the customer's perspective.

According to justice theory, when the ratio of outcomes to inputs for an individual is greater than or equal to that of the reference, customers tend to feel satisfied. Conversely, if the ratio is perceived as unfair, it can lead to feelings of injustice and anger towards the service provider, resulting in customer dissatisfaction (Bambauer-Sachse & Rabeson, 2015). However, the good news is that effective service recovery efforts, guided by justice theory, are known to positively influence customers' perceptions of fairness (Choi & Choi, 2014).

According to justice theory, customers evaluate a service provider's response to service failures or mistakes regarding distributive justice, procedural justice, and interactional justice (Olson & Ro, 2020). In distributive justice, customers focus on the perceived fairness of tangible outcomes during service delivery (Cropanzano et al., 2002). Examples of distributive justice in the tourism sector include refunds, credits, discounts, and compensation (Koc, 2017). Procedural justice refers to businesses' guiding policies and procedures in service recovery efforts (Maxham III & Netemeyer, 2002). Interactional justice pertains to the fairness of interpersonal behaviors during service recovery. Examples include apologizing, providing explanations, showing understanding, and acknowledging mistakes after a service failure.

A business's approach to rectifying service failures is crucial for addressing customer dissatisfaction and enhancing service quality (Johnston, 2001). According to Parasuraman, Zeithaml and Berry (1985), service quality is related to the ability of a business to meet customer needs with its services. It can be expressed as the difference between preservice expectations and post-experience performance (Olcay & Özekici, 2015). Various compensation strategies are discussed in the literature, with the most emphasized being compensation, speed, explanation, and communication (Boshoff, 2005; Park & Park, 2016; Akdu, 2019). Compensation is associated with the financial redress of the customer's grievance (Bergel & Brock, 2018), while speed, also referred to as promptness in the literature, concerns the swiftness of the business's response to a customer's complaint resulting from a service failure (Bae Suk et al., 2009). An apology, equivalent to moral compensation, involves accepting responsibility for the error and seeking forgiveness from the customer (Xie & Peng, 2009). Informing the customer about the awareness of the mistake through explanations is another recovery strategy (Davidow, 2003). Communication, also known as the empathy strategy, is the interaction between the customer who communicates the complaint and the staff handling it (Park & Park, 2016).

Following a service failure, various recovery strategies can lead to multiple benefits for the business, including restoring customer satisfaction, building customer loyalty, gaining a competitive advantage, and mitigating negative image (Koç et al., 2014). The SERVQUAL model, developed by Parasuraman, Zeithaml and Berry (1988), is widely



used in the literature for measuring service quality and shares similarities with service recovery strategies. This model is frequently applied in the tourism sector to assess service quality (Augustyn & Seakhoa-King, 2005; Puri & Singh, 2018; Park & Jeong, 2019). The model has five dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman, Zeithaml & Berry, 1988). Tangibles refer to the physical aspects, such as the appearance of facilities, equipment, and personnel. Reliability involves delivering the promised service accurately. Responsiveness is the willingness of staff to help customers. Assurance relates to employees' competence and courtesy and ability to convey trust. Empathy involves understanding and addressing customer needs by putting oneself in the customer's position to ensure satisfaction (Akdu, 2019).

4. Methodology

As it is understood from the information given in the introduction and literature section, this study tries to determine how effective ChatGPT is in service compensation strategy generation at the point of eliminating service failures. At this point, the qualitative research method was applied in the study, as interviews were first conducted with employees and managers in hotel businesses and then with customers. The qualitative research method allows people to convey their thoughts about any event and situation in detail (Creswell, 2013). In this study, the opinions of hotel employees, managers, and customers on service failure and recovery are learned. In this context, the semi-structured interview technique was preferred. Semi-structured interviews start with questions the authors want to know the answers to and continue with other questions that the participants wish to answer (Brinkmann, 2014). Within the framework of this information, two different interview forms were created. The first of these interview forms is the Interview-1 coded form for hotel business employees and managers.

Interview-1 includes four demographic questions and two interview questions. The first question was designed to learn from the participants about the service failure they had experienced and could not forget. The second question was designed to reveal how the service recovery of the service failure expressed by the participants was realized.

Interview-2 includes four demographic questions and four interview questions. The first question is framed in terms of the Justice Theory and determines the fairness of recovery strategies. The second question is framed in terms of Attribution Theory and assesses how responsibility for service failure is assumed. The third question focuses on potential service quality after service recovery strategies. The last question determines which service recovery strategy customers are likely to be satisfied with.

Purposive sampling was applied in both Interview-1 and Interview-2. Purposive sampling can be defined as the inclusion of participants who will contribute to the objectives of the research (Bernard, 2017). In other words, interviews are conducted with participants in line with certain criteria. In this study, certain criteria were also determined. In Interview-1, the criteria are that the participants have witnessed at least one service failure and are currently working in the hotel business. In Interview-2, the criteria are that the customers have experienced at least one service failure in the past and that they have stayed at the hotel business within the last year. Within the scope of these criteria, interviews were conducted



with 9 hotel business employees (including managers) in Interview-1. In Interview-2, 19 customers were interviewed. Interview 1 was conducted in Antalya destination. There was no destination restriction in Interview 2. The participant demographics of Interview-1 are shown in Table 1 and the participant demographics of Interview-2 are shown in Table 2.

Table 1. Interview 1 participant characteristics

Participant	Gender	Age	Position	Duration of Employment
P1	Male	28	Operation Chief	10 years
P2	Female	28	Human Resources Manager	3 years
Р3	Female	30	Operation Chief	5 years
P4	Male	27	Front Office Manager	9 years
P5	Male	30	Receptionist	6 years
P6	Female	30	Human Resources Manager	7 years
P7	Female	28	Receptionist	4 years
P8	Male	26	Human Resources Manager	5 years
Р9	Female	24	Barmen	5 years

Note. The table was created by the authors.

Table 2. Interview 2 participant characteristics

Participant	Gender	Age	Education	Profession
P1	Male	23	Undergraduate	Officer
P2	Female	27	Undergraduate	Guide
Р3	Male	28	Undergraduate	Tradesmen
P4	Female	44	Doctorate	Academician
P5	Male	38	Master	Officer
P6	Male	32	Master	Teacher
P7	Male	34	Undergraduate	Officer
P8	Female	26	Doctorate	Academician
Р9	Male	45	Undergraduate	Officer
P10	Male	35	Master	Academician
P11	Male	30	Associate Degree	Soldier
P12	Female	37	Master	Academician
P13	Male	38	Master	Soldier
P14	Male	25	Undergraduate	Officer



Participant	Gender	Age	Education	Profession
P15	Male	32	Doctorate	Tradesmen
P16	Male	44	Undergraduate	Soldier
P17	Female	36	Undergraduate	Nurse
P18	Male	34	Master	Academician
P19	Female	26	Undergraduate	Teacher

Note. The table was created by the authors.

In qualitative research methods, if the interviews continue within an inevitable repetition and the authors realize that they have reached sufficient data saturation, there is no obligation to increase the number of participants (Miles & Huberman, 1994). Marshall (1996), on the other hand, states that interviews should be terminated if the participants' responses become repetitive. Creswell (2013) thinks that 5-25 interview participants are sufficient. In line with these explanations, it can be accepted that the number of participants is enough for both Interview-1 and Interview-2.

Interviews with the participants within the scope of Interview-1 were conducted between 19.08.2024 and 29.08.2024, and Interview-2 was conducted between 01.09.2024 and 08.09.2024. In both interviews, attention was paid to the participants' time availability. The average interview duration for Interview-1 was 15 minutes, and for Interview-2, it was 23 minutes. Before the interviews, the participants were informed about the content of the study. Participants voluntarily participated in the interviews. The Scientific Research and Publication Ethics Committee of the University of Applied Sciences at Isparta approved the research, with the decision dated 19.08.2024 and numbered 198.

The recordings obtained in Interview-2 were analyzed in line with thematic analysis. In thematic analysis, authors identify themes and codes per the relevant literature. In this study, themes and codes were created using Braun and Clarke (2006). The records were analyzed by following specific steps. These are recognizing the data, determining the preliminary codes of the data to reveal the content obtained from the data, determining the themes that are frequently repeated in the data, checking the themes, defining and naming the themes, ending the analysis, and preparing the report (Braun & Clarke, 2006). The control and analysis of the data was done jointly by two authors. A final check was made by three academicians who were knowledgeable about the study.

5. Results

5.1 Interview 1 Results

Within the scope of Interview-1, discussions were held with 9 participants. As a result of these interviews, 9 different service failures were identified. How the businesses compensated for these service failures was also learned. Both the service failures and recovery strategies are presented in Table 3. The decision on which of the 9 identified service failures to investigate in the study was made based on the support from the service failure



literature. The most common service failures in the tourism sector are related to service delivery, reservation processes, employee behavior, and billing errors (Othman et al., 2013; Yang & Mattila, 2012). Since the service failure coded P1 in Table 3 occurred due to issues in service delivery and reservation processes, it was decided to investigate the P1 coded service failure. The P2 coded service failure, which resulted from employee behavior, was also included in the study. This decision was reached through the consensus of both the authors and the three academicians consulted.

Table 3. Hotel business service failures and recovery

Participant	Service Failure	Service Recovery Strategy
P1	As the hotel transfer team, we often greet a large number of tourists/passengers from the same flight. On one such occasion, while welcoming the guests, we mixed up two different families who were supposed to go to different hotels. Both families ended up traveling in the wrong direction, resulting in nearly two additional hours of travel time for each.	Considering guest retention after the failure, the families were offe- red their vacation free of charge. They were able to enjoy their one- week vacation without any cost.
P2	During room cleaning, the housekeeping staff accidentally broke a guest's item (a perfume bottle).	The situation was explained to the guest, and an apology was offered. Subsequently, the guest was gifted the same perfume as a replacement.

Note. The table was created by the authors.

5.1.1 ChatGPT-40, Theory of Justice and Service Recovery Results

In this section, the service recovery scenario of the service failure coded P1 and P2, which are determined to be analyzed within the scope of the study, is created with ChatGPT-4o. ChatGPT-4o is asked to perform the service recovery of the service failure coded P1 and P2 according to the assumptions of the Justice theory. Before this command, the recovery strategies performed by the organization in both events were not specified to ChatGPT-4o. ChatGPT-4o was asked to create service recovery according to the Justice Theory. After this request, ChatGPT-4o determined the recovery strategy scenario of P1 and P2 service failure according to the Justice Theory.

According to ChatGPT-40, the service recovery strategy for the P1 coded service failure based on Justice Theory should be as follows:

While greeting a large number of tourists from the same flight as part of the hotel transfer team, we mixed up two families who were supposed to go to different hotels, resulting in both families traveling in the wrong direction for approximately two hours. To rectify this service failure, we took immediate action to redirect the families to their correct hotels. Due to the inconvenience they experienced, we offered both families a 50% discount on their accommodation fees, a complimentary dinner or spa service, and an additional day of vacation. Upon realizing the mistake, we promptly informed the families and sent them a formal apology letter. We also assigned a customer service representative, available 24/7, to provide support throughout the process. Additionally, we personally contacted the families



to express our understanding of their inconvenience, trained our staff on handling service failures with courtesy, and sent thank-you gifts to the families to lift their spirits. Through these steps, we aimed to compensate for the error and ensure customer satisfaction.

According to ChatGPT-40, the service recovery strategy for the P2 coded service failure based on Justice Theory should be as follows:

When a housekeeping staff member accidentally broke a guest's perfume bottle during room cleaning, the hotel management took immediate action. They informed the guest about the situation and offered to cover the full cost of the perfume, providing the guest with a new bottle or compensation. To further rectify the negative experience caused by this incident, the guest was offered additional services such as complimentary room service, spa services, or a dinner. The hotel management investigated the cause of the incident and explained to the guest how the error occurred and the measures taken to prevent a recurrence. A formal apology letter was sent to the guest, and the hotel manager personally apologized. Throughout the entire process, the guest was kept informed about how the situation was being handled and the steps being taken, maintaining a transparent and fair approach. The housekeeping staff and other hotel personnel displayed a courteous and empathetic attitude towards the guest, aiming to boost their morale. Through these steps, the hotel endeavored to compensate for the mistake and ensure the guest's satisfaction.

5.1.2 ChatGPT-40, Attribution Theory and Service Recovery Results

As with Justice Theory, ChatGPT-40 was discussed to develop the service recovery strategies for the P1 and P2 coded service failures based on the assumptions of Attribution Theory. Following this command, ChatGPT-40 defined the service recovery strategy scenarios according to Attribution Theory.

According to ChatGPT-40, the service recovery strategy for the P1 coded service failure based on Attribution Theory should be as follows:

While greeting a large number of tourists from the same flight as part of the hotel transfer team, we mixed up two families who were supposed to go to different hotels, resulting in both families traveling in the wrong direction for approximately two hours. We clarified the situation to the families by explaining that this error was due to human error and was a rare occurrence. Upon their arrival at the correct hotels, they were personally greeted by the hotel manager, who apologized and explained the measures taken to prevent such an incident from happening again. We covered all transportation costs and offered complimentary airport transfer services and local tours throughout their stay. To enhance their vacation experience, we organized a special dinner, a guided city tour, or a free event at the hotel. Additionally, we provided a 24-hour emergency support line to promptly address any questions or concerns they might have. We also presented the families with a special gift pack of local products to help them forget the negative experience and offered a 50% discount voucher or free participation in an exclusive hotel program for their next vacation. Through these steps, we aimed to ensure customer satisfaction by clearly explaining the cause of the error and the measures taken to control it.



According to ChatGPT-40, the service recovery strategy for the P2 coded service failure based on Attribution Theory should be as follows:

When a housekeeping staff member accidentally broke a guest's perfume bottle during room cleaning, the hotel management immediately informed the guest to explain that the error was a human mistake caused by an external factor. They emphasized that the incident was temporary and rare, aiming to alleviate the guest's concerns. To compensate for the error, the guest was offered reimbursement for the cost of the perfume, along with a specially prepared gift pack and a complimentary in-house service (such as room service or a massage). Additionally, the guest was informed about the measures taken to prevent such incidents from happening again, and it was highlighted that such errors are rare and controllable. The housekeeping staff personally apologized to the guest, demonstrating empathy and a sincere effort to rectify the inconvenience caused. Furthermore, the guest was provided with a special support line available 24/7 to address any issues they might encounter. Through these steps, the hotel aimed to ensure customer satisfaction by clearly explaining the cause of the error and the measures taken to control it.

5.1.3 ChatGPT-40, Service Quality Model and Service Recovery Results

During a conversation with ChatGPT-40, it was requested that service recovery strategies for the P1 and P2 coded service failures be created based on the dimensions of the service quality model. Following this command, ChatGPT-40 defined the service recovery strategy scenarios according to the service quality model.

According to ChatGPT-40, the service recovery strategy for the P1 coded service failure based on the service quality model should be as follows:

First, to ensure reliability, we informed the families that such an error was rare and assured them it would not happen again. We explained the cause of the mistake and quickly arranged for them to reach the correct hotels. For assurance, the hotel manager and experienced staff had one-on-one meetings with the families, emphasizing that the situation was taken seriously and necessary measures were implemented to prevent recurrence. Regarding tangibles, we offered complimentary room upgrades to provide extra comfort and left personalized welcome letters and fruit baskets in their rooms. To demonstrate empathy, we conducted personal meetings with the families to understand their preferences and needs, organizing special activities or tours tailored to enhance their holiday experience. Finally, for responsiveness, we established a 24-hour support line to address any questions promptly or needs the families might have. All staff members were trained to provide quick, effective, and willing service to meet the guests' requirements.

According to ChatGPT-40, the service recovery strategy for the P2 coded service failure based on the service quality model should be as follows:

First, to ensure reliability, we immediately informed the guest about the situation and assured them that the mistake would be rectified. To provide assurance, the hotel manager personally called the guest to emphasize that the situation was being taken seriously and all necessary steps were being taken to resolve the issue. In terms of tangibles, we offered



the guest a new perfume bottle along with an additional luxurious gift package. Additionally, we provided special services and amenities in the guest's room to enhance comfort. To demonstrate empathy, we expressed our understanding of the guest's inconvenience and offered personalized service. This included offering the guest a complimentary spa service or a special dinner, depending on their preference. Finally, for responsiveness, we established a 24-hour dedicated support line to promptly address the guest's needs and concerns. All staff were trained to be proactive and enthusiastic in ensuring the guest's satisfaction and promptly fulfilling their requests.

5.2 Interview 2 Results

Participants opinions were obtained separately for SF1 and SF2 service failures and recovery. The reason for doing it this way is that service failures' levels of importance and content are entirely different. Moreover, by evaluating the recovery strategies of different incidents, it is possible to determine the effectiveness of ChatGPT-40 better. For this reason, the participants were shown the hotel business and ChatGPT-40 service recovery strategies in a coded manner. The reason for the coded presentation is to enable the participants to evaluate the hotel business or ChatGPT-40 strategies without bias. Necessary code explanations are included in each result title.

5.2.1 Results of Service Recovery Based on the Theory of Justice

Two questions were asked to determine how the participants perceived the service recovery created based on the Justice Theory with ChatGPT-40 and the hotel business service recovery. In this context, the question "Which recovery strategy did you find fairer? Why?" was asked. The reason for asking this question is to determine the participants' attitudes toward recovery strategies regarding the emphasis on justice, which is the basic assumption of the Justice Theory. The interviews coded SF1 and SF2 hotel business service recoveries as A service recoveries. In SF1, the recovery strategy ChatGPT-40 was coded as service recovery B. In SF2, the ChatGPT-40 recovery strategy was coded as service recovery C.

Within the scope of the Justice Theory, the findings for SF1 and SF2 service failure and recovery strategies are evaluated. All of the participants think that the service recovery strategy created by ChatGPT-40 is fairer for SF1 service failure. For SF2 service failure, the participants were divided into two groups regarding the fairness of the recovery strategies. At this point, it is necessary to look at the reasons why the participants find the ChatGPT-40 service recovery completely fair in SF1 service failure, while they have a more balanced attitude in SF2.

Within the scope of SF1, participants put forward various reasons for the fairness of service recovery B created by ChatGPT-4o. The main reason for considering ChatGPT-4o service recovery as fair is that it emphasizes human values. According to the Justice Theory, individuals expect both material and moral recovery. The fact that the hotel business solved the SF1 service failure in service recovery A only financially was not welcomed and was considered incomplete by the participants. Because recovering the service failure financially does not involve a humane approach. P1 stated, "While A service recovery approaches only financially, B service recovery aims to satisfy customers financially and



morally.''P3 stated, 'In service recovery A, only economic considerations are considered, and guests are not made to feel special regarding human value.'' As it is understood from the participants' opinions, the service recovery of the hotel business within the scope of SF1 is seen as inadequate and criticized only because it is materialistic. On the contrary, ChatGPT-40's service recovery within the scope of SF1 is preferred because it focuses on human values and approaches customers spiritually.

According to Justice Theory, involving staff in the recovery process for service delivery errors and having them take responsibility strengthens customers' perceptions of fairness. The service recovery strategy created by ChatGPT-40, which includes staff involvement in the process, is positively received. Unlike ChatGPT-40, the hotel's service recovery strategy does not involve staff. The hotel only offers financial recovery to the customer. However, the inclusion of staff in the ChatGPT-40 service recovery strategy, where they apologize to customers and participate in training, has been appreciated by participants. P8 stated, "In the B service recovery strategy, it is important that staff are trained to ensure this error is not repeated." P14 commented, "A thoughtful apology letter makes the guest feel considered and can be a satisfactory way of making amends for the mistake." Participants emphasized receiving a personal apology when addressing a service failure. Additionally, they view it positively as the business acknowledging its mistakes and informing customers that staff will be trained to prevent such errors in the future.

Transparency is another crucial element in evaluating service recovery. It is critical for recovery strategies that the process is carried out transparently and that customers are informed about what is being done throughout the process. Justice Theory requires that the process be transparent and open to enable individuals to perceive a fair outcome. In the ChatGPT-40 service recovery, it is essential to communicate the process to the customers and explain what is being done. Customers who learn about each stage of the process are satisfied. P7 noted, "B service recovery is more transparent and customer satisfaction-oriented." In addition to transparency, incorporating empathy into service recovery is essential. When a service failure occurs, customers expect empathy from the other side to feel that their inconvenience is understood. Merely providing financial compensation does not fully satisfy customers. However, ChatGPT-40's service recovery also appears to be successful in terms of empathy. P19 commented, "B service recovery is more detailed and has addressed the incident with empathy." It can be stated that a service recovery strategy created with transparency and empathy appeals to customer satisfaction.

In addition to focusing more on human values, another advantage of ChatGPT-4o's service recovery is that the financial compensation offers provided to customers are more satisfactory. Although the hotel's service recovery included not charging any fees, participants also viewed ChatGPT-4o's financial compensation positively. P15 stated, "I think the recovery process B is fairer because offering a 50% discount on their vacation, a complimentary spa service and dinner, and an additional day to their vacation is positively received in terms of customer satisfaction and acceptable for compensating the mistake." In summary, participants are impressed by ChatGPT-4o's service recovery for both its emphasis on human values and its well-prepared financial compensation offers. For these reasons, participants prefer the service recovery created by ChatGPT-4o for the SF1 service failure.



SF2 can be considered a simpler and less severe service failure compared to SF1. The evaluations of the service recoveries developed by ChatGPT-40 and the hotel management for SF2 vary significantly in terms of fairness. Participants who believe that ChatGPT-40's service recovery for SF2 is fair highlight the reassuring and informative nature of the recovery strategy. This is because, in the SF2 context, the hotel management's recovery strategy is solely focused on replacing the broken perfume. However, ChatGPT-40's recovery strategy addresses the seemingly simple service failure in a more detailed manner throughout the process. P1 noted, "When we look at the C service recovery, we see that it involves informing the guest about the incident to maintain trust in the hotel in the long term and taking steps to prevent it from happening again." P7 mentioned, "The C strategy is more informative." Even for a simple service failure, it is important to provide detailed information to customers within the scope of the recovery strategy to ensure trust.

Regardless of the nature of the service failure, hotel management's involvement in the recovery process and offering apologies to customers can create an advantage for a successful recovery. Customers pay attention to the content and impact of the errors and whether the hotel management cares about them. P8 noted, "In the C service recovery, the hotel management stepping in and personally addressing the negative experience caused by the incident is more important than the tangible compensation services provided." In addition to the hotel's human approach, offering substantial financial compensation for a simple service failure is persuasive. P9 stated, "In the C service recovery, my costs were covered, and I received additional services." Overall, participants were impressed by ChatGPT-40's detailed and attentive service recovery for the seemingly simple SF2 service failure. However, some participants felt that ChatGPT-40's service recovery was exaggerated and found the hotel's recovery sufficient.

In the case of the SF2 service failure, some participants find ChatGPT-4o's service recovery strategy under Justice Theory overly detailed and unnecessary, considering the hotel's service recovery to be sufficient. The breaking of the perfume bottle is viewed as a simple service failure, and the hotel's gesture of gifting a new perfume is seen as an ideal compensation. P4 mentioned, "Is it necessary to go through so much trouble for a perfume bottle? I think A's service recovery is sufficient; they shouldn't prolong the issue." P5 stated, "Since the issue is just a broken perfume bottle, A's response is a more fair approach." As evident from the comments, participants prefer a straightforward resolution for simpler service failures without prolonging the matter.

The question "Which service recovery process would make you consider using the service again? Why?" was asked to learn about participants' satisfaction with the service quality after the recovery strategies for both SF1 and SF2 service failures. First, this question was directed to participants regarding the SF1 service failure. All participants indicated they would use the service again after ChatGPT-40's service recovery for SF1. Participants were influenced by several factors: the humanistic approach of ChatGPT-40's service recovery (P1), the recovery of the service failure both materially and morally (P2, P3, P4, P9, P10, P11, P12, P13, P14, P15, P18), the attention and correct communication (P5, P8, P16), and the overall satisfactory resolution (P6, P7, P17, P19). These factors led participants to prefer the same service after experiencing ChatGPT-40's service recovery strategy.



For the SF2 service failure, there are differing opinions regarding which service recovery process would make participants consider using the service again. Some participants find ChatGPT-4o's service recovery very good and detailed, expressing a desire to use the service again after this recovery. The reasons cited by these participants include the reliability of ChatGPT-4o's service recovery (P1), offering additional compensation options (P2, P13, P14, P18, P19), its informative nature (P7), and the attention and involvement of management and staff (P8, P9). Even for a simple service failure, the detailed and customer satisfaction-oriented service recovery by ChatGPT-40 influences participants to use the same service again. P19 stated, "C service recovery because it not only resolves the issue but also focuses on enhancing satisfaction." For instance, P18 mentioned that they found the hotel management's recovery strategy fairer for the SF2 service failure but would prefer to use the service again after ChatGPT-40's recovery strategy. This is because ChatGPT-4o's service recovery includes extra compensations aimed at ensuring customer satisfaction. P18 stated, "Although I find type A compensation fairer, I can say that type C compensation would be more effective in making me consider using the service again. This is because, following a broken perfume bottle, I have the opportunity to enjoy some of the hotel's activities for free, which shows the effort of the business to ensure guest satisfaction."

5.2.2 Service Recovery Results Based on Attribution Theory

The recovery strategies for SF1 and SF2 service failures are evaluated within the framework of Attribution Theory. Both SF1 and SF2 service recovery strategies were determined with ChatGPT-40. Participants compared these strategies with the hotel business service recovery strategies within the context of Attribution Theory. In this context, participants were first asked, "In which recovery strategy did you think the responsibility was better taken? Why?" The hotel business recovery strategies for SF1 and SF2 service failures were coded as D recovery. ChatGPT-40's strategy was named E recovery for the SF1 service failure and F recovery for the SF2 service failure.

In cases of service failure, customers typically attribute the responsibility to the business or its employees, and this attribution shapes their expectations of the recovery process. For the SF1 service failure, all participants believe that responsibility was better assumed in the E service recovery created by ChatGPT-40. In the case of the SF2 service failure, a significant portion of participants again mentioned that the F service recovery created by ChatGPT-40 demonstrated a strong assumption of responsibility. However, some participants noted that in the SF2 service failure, the D service recovery created by the hotel management adequately assumed responsibility. Details regarding the assumption of responsibility for service failures within the framework of Attribution Theory are shown in Table 4.

Participants unanimously agree that the service recovery created by ChatGPT-40 for the SF1 service failure better assumed responsibility for the service failure. Participants were particularly influenced by the fact that ChatGPT-40's recovery strategy included both material and moral aspects. Participants may perceive a recovery strategy that is solely focused on financial compensation as dismissive. A strategy that includes only the material aspect can be seen as the business's attempt to silence customers without truly



assuming responsibility for the service failure. P1 noted, "The strategy implemented by D is a single-faceted approach that tries to compensate for the mistake solely with financial means, whereas E's strategy assumes responsibility both materially and morally." For a business to fully assume responsibility, it must include more than just material aspects in its service recovery. An example of this is the collaboration between managers and staff.

According to Attribution Theory, assuming responsibility for a service failure plays a critical role in regaining customer satisfaction and trust. Customers pay close attention to how well the business assumes responsibility when evaluating the causes of the error and the efforts made to compensate for it. A recovery strategy that includes both material and moral aspects, rather than being limited to the financial dimension, conveys that the business genuinely acknowledges the mistake and is making a sincere effort to rectify it. In this context, the involvement of managers or staff in the process, acknowledging the mistake, and working collaboratively for its resolution significantly impacts customers. Participants are convinced of a genuine acceptance of responsibility when they see collaboration between management and staff during the recovery phase. P2 stated, "In E service recovery, management worked collaboratively and tried to fulfill the responsibilities they deemed necessary for compensation." The joint efforts of managers and staff in working towards recovery demonstrate to customers that they are valued. Customers, who may have negative feelings due to the service failure, recognize that the efforts made during the recovery are intended for their happiness. P4 commented, "E recovery means you are valued, and we will take care of you throughout your holiday." One of the main reasons for feeling valued is the special attention given in the recovery strategy.

It is natural for customers to feel valued when they sense special attention throughout the recovery process. P6 stated, "E service recovery created a perception of better responsibility because I see that special attention was given throughout the holiday process." Demonstrating special attention in the service recovery and making customers feel valued indicates awareness of the service failure. Businesses that are aware of and acknowledge their service failures are more likely to assume responsibility effectively. P8 mentioned, "As a customer, I expect the business to be aware of the mistake, take responsibility for it, and propose solutions, just like in the E recovery strategy." The recovery process of a business that acknowledges and accepts the service failure is convincing. This is exactly what ChatGPT-40's service recovery achieves. The service failure is acknowledged, and persuasive compensations with special attention are provided. P10 commented, "It is clear that a mistake was made, and there is a sense of embarrassment. They have done everything they can to make up for it." To be considered convincing, service recovery efforts must involve various efforts. Addressing the mistake not only financially but also morally is essential. Intense efforts in the recovery process can mitigate the negativity of the service failure. P19 stated, "In E service recovery, it is evident that they are striving with everything they have to address the inconvenience experienced and are making a high-level effort to fulfill their responsibilities."

In the SF2 service failure, a significant portion of participants also believed that the service recovery developed by ChatGPT-40 assumed responsibility better. Some of these reasons are similar to the justifications for choosing the recovery strategy for the SF1 service failure. For example, the inclusion of both material and moral compensation, the special



attention given, and the convincing nature of the strategies are common reasons that influence participants for both SF1 and SF2 service failures. In addition to these common reasons, there are unique reasons why participants believe ChatGPT-4o's service recovery for the SF2 service failure assumed responsibility better. One such reason is the direct one-on-one communication with the customer. Participants are influenced by the personal interaction between the business and the customer in ChatGPT-4o's service recovery. This direct communication ensures healthy interaction and clarity regarding the service's failure and recovery. P1 noted, "To maintain the customer's trust and ensure they feel comfortable, F's recovery process was better because it involved direct communication and compensation options." Providing information about the recovery strategy during one-on-one communication with customers is crucial.

Learning about what is done during recovery helps customers become informed about the steps taken. P8 noted, "Providing information about the measures taken to prevent the incident from recurring and emphasizing that such errors are rare can affect customer satisfaction." In addition to direct communication and information, a sincere apology can reduce customers' negative feelings after a service failure. P4 mentioned, "It is precious that the housekeeping staff apologized." Integrating material and moral compensations in the service recovery convinces participants that responsibility is correctly assumed.

In the SF2 service failure, some participants (P3, P5, P11, P18) believe the hotel business service recovery better assumed responsibility. These participants view the SF2 service failure as a simple human error that could happen under normal circumstances. They consider the hotel's assumption of responsibility in their service recovery sufficient for such a simple human error. Participants feel that the hotel's gift of a new perfume bottle to replace the broken one adequately demonstrates responsibility. Conversely, they find the recovery strategy prepared by ChatGPT-40 to be exaggerated. P18 stated, "In D service recovery, responsibility is better assumed because the lodging establishment fulfilled its responsibility by gifting a new perfume bottle to the guest to replace the damaged one."

Within the framework of Attribution Theory, to understand how assuming responsibility for a service failure by the business affects whether customers would want to use the same service again, participants were asked, "Which service recovery process would make you consider using the service again? Why?" In the case of the SF1 service failure, all participants indicated they would want to use the service again after the service recovery created by ChatGPT-40. Besides the assumption of responsibility, there are various reasons why participants hold this view. These reasons include the inclusion of both material and moral compensations in ChatGPT-40's recovery strategy (P1, P6, P8, P9, P11, P15, P17, P18), the focus on customer satisfaction (P2, P3, P13, P19), making customers feel unique and valued (P4, P5, P10, P12, P14, P16), the informative nature of the recovery (P7).

In the case of the SF2 service failure, most participants (excluding P3, P4, and P11) expressed a desire to use the same service again after the service recovery created by ChatGPT-4o. The assumption of responsibility significantly influences their decision. However, there are other reasons as well. The customer satisfaction focus of ChatGPT-4o's recovery strategy (P1, P2, P4, P6, P7, P10, P13, P14, P16, P19) and the inclusion of both material and moral compensations (P8, P9, P12, P15, P17, P18) positively impact participants' intentions to



use the same service again. P18, while arguing that the hotel's recovery strategy is better in assuming responsibility for the service failure, also noted that ChatGPT-40's service recovery is more appealing in terms of repeated use of the service. P18 stated, "Of course, the F-type recovery is effective in making the service used again because the establishment prioritizes guest satisfaction in resolving issues with this type of recovery."

P3, P4, and P11, on the other hand, indicated that they would use the same service again after the hotel business recovery strategy. These participants believe that the SF2 service failure is not a situation that needs to be exaggerated and that the recovery provided by the hotel is sufficient. P3 stated, "D recovery because my loss was compensated, and the matter is closed for me."

5.2.3 Service Recovery Results Based on the Service Quality Model

The effectiveness of service recovery strategies created by ChatGPT-40 and the hotel business is being compared within the framework of the service quality model. In this context, participants were asked, "In which recovery strategy did you find the quality of service provided to be higher? Why?" Before this question, participants read the service recovery strategies created by ChatGPT-40 and the hotel business without knowing which strategy belonged to whom. The recovery strategies were coded. The hotel business's recovery strategies for SF1 and SF2 service failures were named G recovery. ChatGPT-40's recovery strategy was named H recovery for the SF1 service failure and J recovery for the SF2 service failure. This way, the recoveries for SF1 and SF2 service failures are evaluated within the framework of the service quality model.

For the SF1 service failure, the majority of participants (except P4, P6, and P9) believe that the quality of service provided was better with the H recovery strategy created by ChatGPT-40. In the SF2 service failure, a significant portion of participants (except P4, P5, and P11) argue that the quality of service was better following the I recovery strategy developed by ChatGPT-40. Information about the effects of the service recovery strategies on service quality within the framework of the service quality model is shown in Table 4.

After the SF1 service failure, participants who believe that the H recovery strategy developed by ChatGPT-40 provided higher quality service based their decisions on different reasons. The first effective reason is that ChatGPT-40's recovery strategy includes both material and moral compensations. Compensating customers both materially and morally can positively affect the perceived level of service quality. P1 stated, "The G recovery strategy only considers compensating the mistake with a financial cost, but the H recovery strategy compensates the mistake both materially and morally. It is aimed at winning the customer." Customers have expectations beyond financial compensation; they also have moral expectations. According to the service quality model, moral compensations enhance service quality by showing empathy and meeting the emotional needs of customers. It is important to show and make customers feel that they are valued after a service failure. Customers who feel valued positively assess the service quality. P5 mentioned, "The H recovery strategy because it first corrects the mistake and prioritizes customer satisfaction, making the customer feel valued." As P5 noted, another determining criterion is that the service recovery is customer oriented. Solving the mistake with a focus



on the customer, rather than just fixing the issue, makes a difference. P19 stated, "In the H recovery strategy, the extra effort to both rectify the issue and increase satisfaction enhances the service quality."

According to the service quality model, reliability refers to the accurate delivery of service. Direct communication with customers and teamwork are essential in a well-planned service recovery. This instills confidence in customers and positively impacts service quality. P10 mentioned, "The H recovery strategy is more quality-oriented because everything is planned. While the G recovery strategy tries to solve the issue by condescendingly offering a free holiday, the H recovery strategy shows complete professionalism." Planned service recovery inherently involves direct communication with customers and teamwork. Direct communication with customers contributes to providing special attention. P13 stated, "I think the quality is higher in the H recovery strategy because of the attention throughout the process." Conducting service recovery not just with one staff member but as a team is viewed positively by customers. P15 noted, "In the H recovery strategy, having experienced staff and the hotel manager directly involved with the guest to guarantee that the mistake will be corrected, and approaching problem-solving more professionally, demonstrates the high level of service quality."

In the SF1 service failure, the primary factor influencing participants who perceived the hotel business service recovery as having higher service quality is the magnitude of the financial compensation. Participants are impressed by the fact that the hotel business service recovery does not charge customers. P9 stated, "In the G recovery strategy, not charging any fees is important." In addition to not charging fees, the quick completion of the hotel business service recovery affects participants' perceptions of service quality. P4 mentioned, "The G recovery strategy says we made a mistake, we take responsibility. Short and concise."

In the SF2 service failure, a significant portion of participants (16 participants) rated the service recovery developed by ChatGPT-40 as having higher service quality. The main factor influencing this perception is the inclusion of extra compensations for even a simple error. P6 mentioned, "I found the J recovery strategy to be of higher quality. Offering different services ensures higher quality." The presence of extra compensations indicates that the recovery strategy is professionally and comprehensively prepared. A professionally prepared recovery strategy can positively enhance the business's image and quality. P10 stated, "This effort deserves respect. Complete professionalism." Similarly, a comprehensive recovery strategy reduces the negative impact of the service failure and increases service quality. P8 noted, "I found the service quality higher in the J recovery strategy because I think this strategy is more comprehensive." Overall, a service recovery strategy that includes extra compensations and is prepared in a comprehensive and professional manner shows higher attention to customers. The increased level of attention positively influences the perceived service quality. P13 mentioned, "I think the quality is higher in the J recovery strategy due to the attention throughout the process."

In the context of the SF2 service failure, there are participants (P4, P5, and P11) who find the hotel business recovery strategy sufficient in terms of service quality. These participants consider the service failure to be simple. For such a simple mistake, a straightforward and



adequate recovery strategy is sufficient for them. P5 noted, "The approach of G recovery towards the customer for such an issue seems reasonable enough."

According to the service quality model, ensuring service quality after a service failure is crucial for determining whether customers will use the service again. In this context, participants were asked, "Which service recovery process would make you consider using the service again? Why?" For the SF1 service failure, the majority of participants (except P4, P6, and P9) indicated that they would want to use the service again after the service recovery created by ChatGPT-4o. The reasons for this preference include the strategy's focus on customer satisfaction (P1, P2, P7, P8, P12, P13, P14, P16, P17, P19), showing value to the customers (P3, P5, P10, P11, P15), and being well-planned and detailed (P18). On the other hand, P4, P6, and P9 expressed that they would prefer to use the service again after the hotel business recovery strategy for the SF1 service failure. For these participants, not charging fees after the service failure is an important factor.

In the SF2 service failure, the majority of participants (except P4, P5, and P11) indicated that they would want to use the service again after the service recovery created by ChatGPT-4o. Factors that influenced their opinions by enhancing service quality include the strategy's human-centric approach (P1), extraordinary effort (P2), focus on customer satisfaction (P3, P6, P7, P8, P9, P10, P12, P15, P16, P17, P18, P19), and the attention given to customers (P13, P14). However, participants like P4, P5, and P11 stated that they would prefer to use the service again after the hotel business recovery strategy for the SF2 service failure. These participants found the strategy created by the hotel business to be sufficient for a simple service failure.

6. Discussion and conclusion

In the tourism sector, the usability of various AI applications for ensuring customer satisfaction in service recovery processes has been explored (Lee et al., 2020; Lv et al., 2022; Shan et al., 2024; Xu & Liu, 2022). However, the effectiveness and usability of a comprehensive and powerful AI application like ChatGPT-40 in service recovery processes in the tourism sector have not been thoroughly examined. There are studies indicating the feasibility of using ChatGPT for managing customer reviews in the tourism sector (Dalgıç, 2023; Koc et al., 2024). This study evaluates the effectiveness of ChatGPT-40 in service recovery processes within the tourism sector through sample service failures. The results show that the service recovery strategies developed by ChatGPT-40 are more frequently preferred by customers and have a high potential to enhance customer satisfaction.

According to Justice Theory, Attribution Theory, and the Service Quality Model, service recovery strategies developed by ChatGPT-40 appear to be more effective than those of hotel management. ChatGPT-40's emphasis on transparency, empathy, and comprehensive communication in its recovery strategies, focusing on customer satisfaction, makes a significant difference. It is known that ChatGPT has substantial potential to drive innovation and enhance service quality in many sectors, including tourism (Demir & Demir, 2023a, 2023b; Gursoy et al., 2023). ChatGPT evaluates events and developments from different perspectives to provide the most suitable recommendations. In the tourism sector, human resources typically prepare service recovery strategies to resolve service failure



as quickly as possible. However, ChatGPT-40 evaluates the service failure holistically and prioritizes ensuring customer satisfaction (Koc et al., 2023). This study shows similarities with the findings of Koc et al. (2023), where it was proven through participant preferences that ChatGPT-40 evaluates service failures comprehensively and prioritizes customer satisfaction. In the study, customers preferred service recovery strategies developed by ChatGPT-40 across all three theories

Certain key aspects have emerged in the results obtained for the three theories mentioned. A significant majority of participants found monetary compensation alone to be insufficient and preferred solution proposals that included human elements and moral recovery strategies. Therefore, participants found the solution proposals developed by hotel businesses to be inadequate, as they were superficial and focused solely on financial compensation. ChatGPT-4o's recovery strategies were favored by participants over those developed by hotel businesses for several reasons. Firstly, ChatGPT-4o's strategies were comprehensive, addressing both financial and emotional needs, which provided a more holistic approach to service recovery. Secondly, there was a strong emphasis on human attributes, such as apologizing and providing explanations, which showed that the process was transparent and sincere. Thirdly, direct and personalized communication was maintained, ensuring continuous interaction and individual attention to customers. Additionally, demonstrating that customers are valued and incorporating empathy into the recovery process played a crucial role. These factors led the majority of participants to prefer the recovery strategies offered by ChatGPT-4o compared to those provided by the hotel businesses.

From the customers' perspective, moral and human approaches in recovery strategies created in response to service failures are of great importance. Additionally, the moral and human approaches offered by the business after an adverse event can significantly influence the customer's positive attitude towards reusing the service. These findings support the prediction stated in the Madgavkar et al. (2019) report, which suggests that AI-based technologies are not only crucial in areas requiring mechanical and analytical intelligence but are also beginning to advance in areas requiring emotional intelligence. The human-like features of the recently developed ChatGPT-40 are another testament to the importance placed on developing emotional intelligence in AI. The study results highlight that the human values and features in the recovery strategies offered by ChatGPT-40 were adopted and preferred by the participants. Moreover, the findings are consistent with studies focusing on personalized experiences and customer satisfaction involving ChatGPT-40 (Chen, 2024).

This study provides significant theoretical contributions within the frameworks of Justice Theory, Attribution Theory, and the Service Quality Model. Firstly, it has been found that ChatGPT-4o's service recovery strategies are perceived as fairer by customers within the scope of Justice Theory. According to Justice Theory, customers expect not only financial compensations but also moral compensations during the recovery process for the mistakes they experience. The inclusion of both financial and moral compensations in ChatGPT-4o's service recovery strategies ensures that customers' emotional needs are also met. From the perspective of Justice Theory, it can be confidently stated that ChatGPT-4o's service recovery strategies play a significant role in enhancing customer satisfaction and loyalty by providing a fair recovery process and strengthening customer relationships.



This finding offers a new perspective to the existing theoretical literature by demonstrating the potential of ChatGPT-40 in improving customer satisfaction and reinforcing the perception of justice in service recovery processes.

Secondly, within the framework of Attribution Theory, ChatGPT-4o's focus on financial and moral compensation strategies in service recovery strengthens customers' perceptions that the responsibility for service failures is being assumed. This, in turn, has positive effects on customer satisfaction. The emphasis on transparency and empathy in ChatGPT-4o's recovery processes allows customers to forgive service failures more efficiently. It enhances their trust in the business from the perspective of Attribution Theory. This finding demonstrates the effectiveness of AI-based applications like ChatGPT-4o in service recovery strategies, suggesting they can extend beyond traditional human resources.

Thirdly, within the framework of the Service Quality Model, ChatGPT-4o's service recovery strategies demonstrate effective performance. ChatGPT-4o's approach of engaging in direct communication with customers, providing detailed information, and showing special attention positively influences the perception of service quality. This finding proves that, from the perspective of the Service Quality Model, it is possible to meet and even exceed customer expectations with ChatGPT-4o.

Fourthly, it is now known that ChatGPT-4o's recovery strategies positively influence customers' intentions to reuse the same service. A significant portion of customers expressed a desire to use the service again after experiencing ChatGPT-4o's recovery strategies. This not only indicates the potential of ChatGPT-4o to enhance customer satisfaction but also ensures customer loyalty. This finding underscores ChatGPT-4o as an essential tool in the service recovery process, instilling confidence in its future success.

This study offers significant practical insights into how ChatGPT-40 can be utilized in service recovery processes within the tourism sector. ChatGPT-40's focus on financial and moral aspects when compensating for service failures is an effective strategy to enhance customer satisfaction. Hotel businesses can leverage ChatGPT-40 to emphasize transparency, empathy, and detailed information in their service recovery efforts. Notably, the emphasis on one-on-one communication with customers in ChatGPT-40's recovery strategies can be considered to improve service quality and increase customer loyalty. In this context, the effectiveness of ChatGPT-40 in recovery processes can be a valuable tool for customer relationship management and service quality. On the other hand, it should be noted that it would be more beneficial to use ChatGPT-40 under human control, as it has some limitations, confidentiality, and accuracy concerns.

This study has several limitations. Firstly, the study data was obtained from semi-structured interviews with employees and customers of specific hotel businesses. This may limit the generalizability of the findings. Additionally, different demographic groups and cultural contexts were not considered in the study. This can restrict the applicability of the findings to diverse customer profiles and cultural environments. Furthermore, the long-term effects of ChatGPT-4o's in service recovery processes were not examined. Thus, definitive conclusions about the long-term impact of ChatGPT-4o on customer satisfaction and loyalty cannot be drawn. Lastly, this study only utilized qualitative data. Including quantitative



data could contribute to more robust and universally applicable findings. Future research should address these limitations by using more comprehensive and diverse data sets, thereby enhancing the validity of the results.

Service sector businesses, particularly hotel businesses, should consider integrating advanced AI applications like ChatGPT-40 into their service recovery processes. Such applications offer significant opportunities to enhance customer satisfaction and improve service quality. By utilizing ChatGPT-40, businesses can be more successful in compensating for service failures. To effectively use ChatGPT-40's recovery strategies, staff must receive training and participate in awareness programs about these systems. Additionally, businesses should continually establish feedback mechanisms to evaluate and optimize ChatGPT-40's performance.

Researchers should also delve deeper into the impact of ChatGPT-40 and similar AI applications in service recovery processes. Examining the effectiveness of ChatGPT-40 across different sectors and various service failure scenarios can clarify its overall applicability and potential. Moreover, it is essential to study the effects of ChatGPT-40 on diverse cultural and demographic groups. Such research could lead to broader acceptance of AI applications in the service industry.

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