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Managing Service Recovery via Social Media: The Impact of Transparency and Service Recovery Type in the Distribution of Feedback

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Abstract

Purpose: The popularity of social media has altered how customers interact with businesses, and an increasing number of customers prefer to voice their complaints on social media. Bystanders can observe the customer complaint process on social media, but the impact of transparency on bystanders remains uncertain. Therefore, this study established and verified a model for defining the effect of transparency and service recovery types on bystanders. **Research Design and Methodology:** In this study, we used the internet survey platform “So Jump” to collect data. And we validated three studies with SPSS 26.0 and Smart PLS 4.0. **Result:** First, we showed that the transparency process (vs. result) is more likely to increase customer forgiveness and E-loyalty and reduce E-NWOM intention among bystanders. Second, customer forgiveness also plays a complementary mediating role between transparency and E-loyalty, as well as between transparency and E-NWOM intention. Finally, we found a modest interaction effect between transparency (process vs. result) and service recovery types (psychological vs. tangible vs. hybrid) on bystanders’ customer forgiveness and E-loyalty. **Conclusions:** This study provides actionable recommendations for how service managers can effectively employ social media as a means for distributing feedback information to manage service recovery in the future.

Keywords: Transparency, Service Recovery, Bystanders, Social Media, Distribution of Feedback Information

JEL Classification Code: D21, L81, M31

1. Introduction

The emergence of social media has revolutionized the communication, processes, and distribution channels between customers and companies (Abney et al., 2017; Keke, 2022). Customers can use social media to conduct information searches, communicate with the company, complain about poor service encounters, and look for solutions (Hogreve et al., 2019). No company is immune to

service failures, and Ward and Ostrom (2006) studied that customer complaint behavior is shifting from traditional private channels (e.g., phone calls, emails, and 1-to-1 conversations) to online public channels (social media), where they publicly express their dissatisfaction by posting negative comments, user-generated content (UGC), and compliant content on company social platforms (Herhausen et al., 2023; Ho, 2018; Presi et al., 2014).

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Other customers may observe the business's resolution process when a client complains about its services on social media. Companies frequently move service recovery to private environments to prevent unwanted attention from other customers (Hogreve et al., 2019). However, it may also cause some trouble for the company because bystanders can browse the complaint information but cannot see the company's service recovery status. They may interact with complainants to learn about the results, increasing customers' uncertainty about the company's perception due to the growing popularity of customer-to-customer interactions in an online environment (Hennig-Thurau et al., 2010).

At the same time, the rise of the Internet has also made consumers more agreeable to the convenience of social media as a distribution of feedback information, where consumers only need to order on the Internet or with a smartphone, and service providers complete the production, delivery, and after-sales process. By the end of 2022, there were 521 million users of online food delivery in China, making up 48.8% of all Internet users, according to CNNIC's "Statistical Report on China's Internet Development Status." As the food delivery industry continues to grow, the number of complaints about food delivery services has gradually increased. According to the "2021 Analysis of Market Complaints in China's Delivery Industry" released by the Foresight Industry Research Institute, the main manifestation of Chinese customers' food delivery complaints are refunding problems (17.86%), order problems (9.5%), and product quality (8.33%), and so on. Furthermore, the iiMedia Research (2021) survey shows that 38.1% of Chinese customers are likely to complain on social media after encountering service failures to serve as a warning for other customers. The number of social media users in China is 1.03 billion, or almost 72% of the country's entire population (Datareportal, 2023). This enormous number of users might result in significant losses for a company. Because of the high number of bystanders on social media, bystanders who are in the same demographic as the complaining customer are more likely to empathize, blame the company for service failures, and identify more with the complainant (De Campos Ribeiro et al., 2018). Consequently, this can result in bystanders spreading NWOM about the company. Therefore, the posting of a social media complaint is not the end of communication but the beginning of the company's service recovery process. Given the increasing number of service complaints on social platforms, more and more customers expect companies to solve problems openly and transparently (Liu et al., 2015).

Service recovery transparency has been shown to have a positive impact as a cue; transparency demonstrates service provider remorse and is a positive signal for service providers to undo service failures (Wang et al., 2020). The

transparency of service providers on social media platforms allows bystanders to observe the firm's efforts in the recovery process. Harrison-Walker (2019) stated that when service providers embark on service recovery efforts, they fundamentally seek forgiveness from their customers. Normally, consumers are thoughtful in their choice to forgive, and the outcomes of forgiveness primarily include lower avoidance and retaliation (Tang, 2005). To enhance the discussion in the social domain, we argue that whether service providers' recovery of transparency enhances E-loyalty and reduces E-NWOM depends on whether customers forgive service companies. Therefore, this study inputs customer forgiveness as a mediating variable into the model, asserting that firms need to focus on the transformative role of customer forgiveness in transparency and bystander attitudinal behaviors on social platforms to build more positive, long-term customer relationships.

In addition, this study aims to investigate the interaction between transparency and service recovery types to clarify the mechanisms by which this interaction affects bystander customer forgiveness, E-loyalty, and E-NWOM intention. Companies need to adopt appropriate recovery strategies, and effective service recovery strategies have been identified as a key factor in retaining customers after a service failure (Stauss & Friege, 1999). Otherwise, complaints can quickly fester and draw the attention of thousands of consumers, ultimately leading to viral NWOM propagation that can tarnish a company's reputation. Service recovery strategies mainly include symbolic recovery (e.g., psychological recovery such as apology and justification) as well as economic recovery (e.g., financial compensation such as vouchers, refunds, etc.) (Jung & Seock, 2017; Roschk & Gelbrich, 2014; Smith et al., 1999), but most of the existing studies have treated emotional recovery and economic recovery as separate recovery approaches (Aw et al., 2022; Gelbrich et al., 2016). Honora et al. (2022) used apology and compensation as moderating variables to validate the important role of service recovery transparency in customer forgiveness, but there is a lack of research that has examined the relationship between psychological recovery, tangible recovery, and hybrid recovery. Therefore, this study builds on previous research by categorizing service recovery types into psychological recovery, tangible recovery, and hybrid recovery as moderating variables to explore their interaction effect with transparency. This field of social media has not extensively explored this particular type of research, especially in regards to distributing feedback information to manage service recovery.

Numerous studies have shown that customer service complaints have gradually shifted from offline to online platforms (Hogreve et al., 2019; Honora et al., 2022; Schaeffers & Schamari, 2016), and we need to examine service recovery from a new perspective. Only a small

number of existing studies discuss bystander psychological effects (De Campos Ribeiro et al., 2018; Gunarathne et al., 2018; Hogleve et al., 2019). Dens et al. (2015) showed that a company's social media observability of service recovery affects bystander attitudes and behaviors. Thus, our study focuses on addressing the impact of service recovery transparency and service recovery types on bystander attitudes and behaviors. This study focuses on the following questions: First, does service recovery transparency confer positive benefits on social media bystander attitudes and behaviors, such as increased customer forgiveness, E-loyalty, and reduced E-NWOM intention? Second, do the interactions between transparency and service recovery types have a positive impact on bystander attitudes and behaviors? Investigating this issue through a new lens, this study could enrich the theory of social media as the distribution of feedback information to manage service recovery and offer valuable insights for managers.

Online food delivery has become an indispensable model of catering by differentiating itself from the traditional distribution model. In terms of economic benefits and consumer demand, it is advantageous to both businesses and consumers. A series of new industries, such as the online takeout industry and the food delivery industry, are also booming. This study focuses on customer complaints on social media after experiencing service failures in the online takeout industry. As customers' lifestyles change and the frequency of takeouts continues to increase, routine service failures (e.g., order errors, meal destruction, missed orders, exceeding delivery times, etc.) have become the focus of customer complaints on social platforms. Routine service failure involves customer dissatisfaction and the immediacy of recovery without any punitive and retaliatory behavior (Joireman et al., 2016). Therefore, based on the service failure of the online food delivery industry, this study attempts to construct a model of service recovery transparency based on customer forgiveness, E-loyalty and E-NWOM intention and explores the interaction effect of transparency and service recovery types. We innovate based on previous studies; in our three experiments, transparency is not only a categorical variable but also a measurement variable. In previous studies, more scholars considered service recovery types as a single strategy. In our study, we innovatively combined psychological recovery and tangible recovery and categorized service recovery strategies into three types (psychological recovery vs. tangible recovery vs. hybrid recovery) to clarify their mechanisms of action on bystander attitudes and behaviors. In Study 1, we manipulated service recovery transparency (process vs. result) and used an order error scenario experiment to clarify the difference between transparency (process vs. result) on bystander customer forgiveness, E-loyalty, and E-NWOM intention. In Study 2, based on clarifying the difference in

the impact of transparency on bystander behavior, we used a meal destruction scenario, measured each variable, and verified the mediating effect of customer forgiveness on the relationship between transparency, E-loyalty, and E-NWOM intention. Finally, Study 3 conducted a 2×3 scenario experiment to thoroughly examine the mechanism of interaction between transparency and service recovery types. We utilized online market missed orders as scenarios to discuss the combination of transparency (process vs. result) and service recovery types (psychological recovery vs. tangible recovery vs. hybrid recovery) and their interaction effect on the attitude and behavior of bystanders.

2. Literature Review

2.1. Transparency in Social Media

The concept of transparency has been widely used in the fields of government governance and public management (Ball, 2009; Kosack & Fung, 2014; Meijer, 2009), and it is gradually begun to be applied in the business field. Research in the business field mainly focuses on product transparency (Liu et al., 2015), information transparency (Zhou et al., 2018), financial performance transparency (Barth & Schipper, 2008; Hunton et al., 2006), and other aspects.

What exactly is transparency? Current research indicates that the majority of definitions of transparency focus on how much information an organization makes available about its activities, decision-making processes, and performance (Drew & Nyerges, 2004; Oliver, 2004). According to Grimmelikhuijsen & Meijer (2014), transparency is the availability of information by an organization or its members, including whether it enables outside players to check on the organization's internal operations or performance. Oliver (2004) pointed out three components that may be used to explain transparency: bystanders, events for observation, and ways or techniques of observation.

With the emergence of Web 2.0 social media tools, more and more customers are using social media to express their complaints to companies. Unlike traditional offline customer-company private handling, bystanders on social media can view the process of the company's service recovery interactions with the complainant (Schaefer & Schamari, 2016). Therefore, the company should consider not only the complainant but also other bystanders who can view the complaint and service recovery process when performing service recovery. Hence, companies should be transparent and accountable when dealing with complaints (Honora et al., 2022). Hogleve et al. (2019) argued that service recovery transparency is the degree to which a company is visible to other bystanders during the service recovery process after a customer has made a complaint

public on a social platform, encompassing the company's recovery efforts, the process of handling it, and the result of the handling. In his study, he categorized service recovery transparency into process and result to clarify the understanding of service recovery transparency. Based on the cue utilization theory, in this study, we use a company's service recovery transparency as a cue. When bystanders do not have direct access to the company's intrinsic cues (physical characteristics of the product), they would rely on the external cues they receive (e.g., brand equity, reputation, and customer evaluations) to evaluate and make decisions about the company (Liefeld, 1993). Therefore, this study builds on previous scholars' research by distinguishing between the process and result of service recovery transparency, where the process means that bystanders can view customer complaints, the company's interaction process with the complaining customer, and the recovery approach in their entirety, and the result means that bystanders can only view the customer complaint and the company's response while the service recovery process shifts to a private channel.

2.2. Service Recovery Type

Service recovery refers to the actions taken by service providers in response to service failures (Gronroos, 1988), the purpose of which is to change customers who have encountered service failures from dissatisfied to satisfied ones. Effective service recovery types can regain customer satisfaction, maintain customer loyalty, and enable service providers to maintain long-term relationships with customers (Davidow, 2003). Smith et al. (1999) studied that when a service fails, customer complaints activate interactions between the customer and the service provider. Through these interactions, the service provider makes efforts to resolve the complaint and assigns certain economic and social outcomes to the customer. Most of the existing service recovery studies have considered symbolic recovery (e.g., psychological recovery such as apology, justification, etc.) as well as economic recovery (e.g., tangible recovery such as vouchers, refunds, etc.) (Jung & Seock, 2017; Roschk & Gelbrich, 2014; Smith et al., 1999). Psychological recovery usually comes in the form of an apology, which expresses the company's concern for the customer and can convey the company's regret and sympathy for the customer's experience (Liao, 2007). Tangible recovery is the basic recovery strategy because service failure will cause loss or inconvenience to customers, so it can provide the most practical benefits to them (Boshoff, 1997). Xie and Peng (2009) highlighted that tangible recovery can convey the ability of enterprises to accept responsibility, admit mistakes, and express regret and can further enhance customers' perceptions of corporate

integrity. Most of the existing literature regards psychological recovery and tangible recovery as separate recovery methods (Aw et al., 2022; Gelbrich et al., 2016), but only a few scholars consider the combination of psychological recovery and tangible recovery (Casidy & Shin, 2015; Jung & Seock, 2017) to explore its impact on customer behavior. Therefore, based on previous studies, this study divides service recovery types into three categories: psychological recovery, tangible recovery, and hybrid recovery (a combination of psychological recovery and tangible recovery).

2.3. Customer Forgiveness

Forgiveness comes from psychology. Enright et al. (1992) proposed that forgiveness means that the offended person stops fighting back against the offender and chooses to show understanding, kindness, and acceptance toward them. Tsarenko and Gabbott (2006) introduced the concept of customer forgiveness into the business field for the first time. They believed that customer forgiveness is the way customers adjust their emotions and show kindness, patience, and tolerance to the offensive behavior of merchants to weaken or transfer psychological pressure and form relationships. The transformation process of prosocial motivation into constructive intention customer forgiveness is when a customer lets go of angry inner behaviors and desires to exact revenge on a company that caused harm and increases positive emotions and thoughts about the company (Joireman, 2016). From a service delivery perspective, forgiveness reflects the customer's willingness to treat the service provider in the same way as they did before the service failure (McCullough et al., 2001). According to Tsarenko and Tojib (2019), customer forgiveness reduces the likelihood of negative reactions such as consumer retaliation and negative WOM. Customer forgiveness can have a positive impact on customer reconciliation, which suggests that customer forgiveness is beneficial in rebuilding the relationship between the company and the customer during the service failure stage (Harrison-Walker, 2019). To sum up, we can see that customer forgiveness is not a temporary act of releasing negative emotions and feelings but a process in which customers consciously weaken psychological pressure over time (McCullough et al., 2003). Therefore, after a service failure, service providers seek customer forgiveness through service recovery measures (Harrison-Walker, 2019).

2.4. E-loyalty

Customer loyalty is crucial for a company to obtain a competitive advantage. According to Oliver (1999), customer loyalty refers to their preference for a particular

brand or product as well as their determination to continue making repeat purchases from them in the future. In the past, some researchers utilized customer behavior to assess customer loyalty, including frequency of product repurchases, purchase intentions, and derivative behavior (Bordley, 1989; Jones & Sasser, 1995; Yim & Kannan, 1999). Customer loyalty can take many different forms, such as customers having a set preference for a particular company, making regular purchases from this company, or continuing to purchase products from the company in the future (Zeithaml et al., 1996). Srinivasan et al. (2002) incorporated attitude and behavior into the concept of customer loyalty in their research. With the continuous development of the Internet, the frequency of customers' online shopping is also increasing, so academic research on E-loyalty is also gradually increasing. There is no essential difference between electronic loyalty and traditional customer loyalty. It refers to the loyalty formed in the Internet market. Electronic loyalty is the extension of customer loyalty from offline products to online products and services (Luarn & Lin, 2003). Some scholars also define E-loyalty as a revisiting attitude or revisiting behavior for a specific website (Anderson & Srinivasan, 2003). To sum up, E-loyalty was measured using attitude or action intention in this study (Kim & Ha, 2020).

2.5. E-NWOM Intention

WOM, which encompasses both positive word-of-mouth (PWOM) and negative word-of-mouth (NWOM), refers to an informal recommendation expressed by other customers based on their service experience (Casidy & Shin, 2015). Existing research shows that PWOM is generated based on customer satisfaction, including good experiences with the company's products, whereas NWOM is derived from customer dissatisfaction, including disappointing experiences with the company (Goldenberg et al., 2007; LUO, 2009). NWOM specifically refers to verbal, non-commercial communications between customers that are critical of a particular business, good, or service (Istanbulluoglu et al., 2017).

With the continuous development of online media, NWOM began to spread on social media, constituting a new form of E-NWOM. Hennig-Thurau et al. (2004) proposed in their research that E-WOM refers to statements about organizations published by existing or potential customers through the Internet, including both positive and negative statements. Based on the social influence theory, when bystanders browse content about customer complaints and perceive service failure attribution, sense of injustice, and service severity (Balaji et al., 2016; Chang et al., 2015), they will generate E-NWOM that will support the customers' complaints (Schaefer & Schamari, 2016). Social media has

overcome the constraints of time and geography, allowing E-NWOM to reach a large audience of prospective customers who are interested in the firm and can influence its reputation and business. As a result, when customers lodge complaints, it is imperative to devise strategies to reduce the E-NWOM intention of bystanders.

3. Hypothesis Development

In the realm of supply and delivery of services, service failures are inevitable in any company. Companies must be able to recognize and handle customer complaints and dissatisfaction, in addition to focusing on positive feedback from satisfied clients. Research shows that companies can learn from customer complaints and improve internal processes (Yilmaz et al., 2016).

Transparency is one of the basic conditions for establishing a positive relationship between customers and companies (Reynolds & Yuthas, 2008). The relationship between customers and companies is affected not only by the transparent behavior of the company but also by the customer's subjective estimation of the company's behavior in the absence of behavioral transparency (Kitchin, 2003). Transparency can serve as a positive signal that produces better outcomes than no or opaque information (Hogreve et al., 2019). Honora et al. (2022) found that by providing service restoration under conditions observable by bystanders, research shows that the higher the level of service transparency, the more likely bystanders are to forgive the service provider and less likely they are to engage in destructive actions, resulting in constructive behavior (Fetscherin & Sampedro, 2019). Buell et al. (2017) believe that the transparency of the processing process may bring benefits to the company, which can increase customers' perception of the company's efforts and reciprocity, and this process can improve customers' perception of the value of the company's services. As mentioned earlier, this study divides transparency into process and result to explore the differences in how it affects bystander attitudes and behaviors. Therefore, we propose the following hypothesis:

H1: Service recovery transparency process (vs. result) can generate more customer forgiveness (a), E-loyalty (b), and less E-NWOM intention (c) among bystanders.

Companies should focus not only on satisfied customers but also on dissatisfied customers because customer dissatisfaction can lead to a series of negative behaviors (Yavas et al., 2003). Singh (1988) pointed out that dissatisfaction will lead to customer complaints, mainly manifested in vocal responses (such as complaining to service providers and seeking solutions), private responses (spreading negative WOM to friends and colleagues around

them), or third-party responses (taking legal action). When service failures cause customer complaints, a dialogue will be opened between the service provider and the customer, a complaint handling decision will be made, and some economic or psychological rewards will be provided to the customer (Liao, 2007). Based on the cue utilization theory, service providers' recovery cues can reduce customers' negative intentions (Burton & Khamash, 2010). This study regards transparency as a clue, and bystanders will spontaneously process clues from service recovery transparency to obtain product or service relevance and quality evaluation information (Olson & Jacob, 1972).

According to social influence theory, individuals often produce changes in their thoughts, emotions, and behaviors under the influence of other people or groups. Hogueve et al. (2019) pointed out that in a social media environment, a transparent handling process will affect not only the perception and behavior of complainants but also the perception and behavioral intentions of bystanders. Because customers are keen bystanders, they usually use the experiences of other customers as their own evaluation and judgment criteria (Miao, 2014). Behavioral manifestations of customer forgiveness include lower avoidance and retaliation, as well as increased retention and reduced NWOM (Tang, 2005; Wade & Worthington, 2003). The negative impact of a service failure can only be overcome if customers forgive the company. Because negative thoughts, feelings, and behaviors are reduced when forgiveness occurs (McCullough et al., 2000), customers are less likely to spread negativity (Harrison-Walker, 2019). Hong and Lee (2005) proposed that a company's online response addresses the concerns of customers' complaints, can increase their PWOM intention and loyalty, and prevents other customers from participating in unnecessary attacks. Chung et al. (2020) pointed out that public responses on social media may mitigate the negative impact of customer complaints. Consumers who perceive a higher level of transparency may believe that they share similar values with the business and will be less likely to engage in negative complaints (Kang & Hunstvedt, 2014). Given that bystanders belong to the same group as complaining customers, whose attitudes and behaviors are critical to company survival and growth, we believe that service transparency can be used as a cue to obtain customer forgiveness from bystanders and act on E-NWOM intention and E-loyalty. Based on this discussion, we hypothesize that:

H2: Customer forgiveness mediates the effect of transparency on E-loyalty (a) and E-NWOM intention (b).

Service recovery is a key factor in achieving customer loyalty. Companies will adopt different service recovery strategies to deal with service failures, with the purpose of

solving problems, alleviating customers' negative emotions and attitudes, and ultimately maintaining customer loyalty (Murpsy et al., 2015). Research by Grégoire et al. (2018) shows that a company's recovery efforts depend on how and where customers express their negative experiences. For businesses, the risk of losing customers without adequately managing customer complaints is higher (Gustafsson, 2009). Dens et al. (2015) studied that in an online review environment, negative reviews from other customers may affect observed customer attitudes, purchase intentions, and WOM behavior, especially when service providers fail to take appropriately to actions after service failures. Ro and Olson (2014) pointed out that a service recovery strategy can alleviate the impact of service failure on E-NWOM.

Our study focuses on three different types of service recovery: psychological recovery, tangible recovery, and hybrid recovery (a combination of psychological recovery and tangible recovery). According to Wei et al. (2010), to identify which service recovery solutions will yield the best outcomes, businesses must compare them all. When service is recovered, most customers anticipate some sort of effort from the business rather than merely an apology for what transpired (Barr & McNeilly, 2003). When a company restores a service, customers expect it to offer specific compensation for any failures, and the compensation they receive will affect how they perceive the service recovery (Bambauer-Sachse & Rabeson, 2015). Casidy and Shin (2015) investigated the aviation industry and discovered that an apology alone is insufficient to induce positive intentions and reduce negative intentions after service failures, and that economic compensation and hybrids can effectively increase the possibility of customer forgiveness. Although organizations can persuade customers using psychological means (such as apologizing), a combination of concrete and psychological acts can better ensure failure recovery (Miller et al., 2000). According to Goodwin & Ross (1992), using an apology during service restoration can boost customer satisfaction, and if the apology is coupled with a 10% discount, it has a better service restoration effect. According to Abram and Pease (1993), when a service failure is properly rectified, customers may sense stronger loyalty to the service provider than if no failure occurred at all.

Zhao et al. (2010) confirmed the relationship between recovery mode (public mode vs. private mode) and recovery dimension (economic recovery vs. social recovery). However, there is comparatively less research on the interaction between transparency and service recovery types. Therefore, we interpret the transparency (process vs. result) as a cue, allowing observers to see the efforts made by the company in the recovery process, including psychological recovery, tangible recovery, and hybrid recovery, and clarify the differences in the effects of their interactions on bystander attitudes and behaviors.

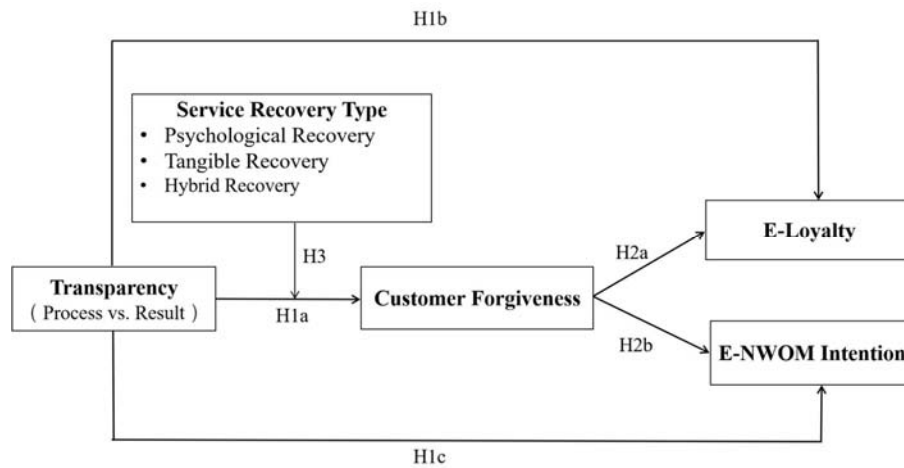


Figure 1: Research Model

Accordingly, we hypothesize that:

- H3:** Transparency has an interaction effect with service recovery types. Such a transparency process (vs. result) and hybrid recovery can produce stronger customer forgiveness (a) and E-loyalty (b) but lower E-NWOM intention (c) than psychological recovery and tangible recovery.

4. Study 1

In Study 1, the relative impact of process (vs. result) on bystander attitudes and behaviors was examined in the context of service failure to test Hypothesis 1. We manipulated the service transparency scenario (process vs. result). To avoid customer brand preferences, we operated a fictional brand that allowed customers to imagine themselves browsing SNS when they found a milk tea online delivery service provider called “Yummy Tea.” We showed them other customers public complaints on the SNS platform for store service errors and the service recovery transparency process (vs. results) (see Web Appendix).

4.1. Study Design and Sample

Study 1 used a two-cell, one-way (transparency: process vs. result) design between subjects. The survey was conducted on So Jump, a Chinese online questionnaire platform. Two hundred and thirty-eight people (63.85% female) participated in the study for a small amount of remuneration. They were randomly assigned to one of the conditions.

In the two conditions, we manipulated the transparency process (vs. result). A customer with the ID La**

complained about her service encounter with the brand SNS. La** ordered a cup of hot milk tea from an internet delivery service but received an icy cup, so she complained publicly on the brand’s SNS to seek a solution. Following reading the scenario, participants were asked, “Have you heard of the brand Yummy Tea?” ($M = 2.66$, $SD = 1.43$), demonstrating that our imaginary brand operation is successful and can avoid customers’ brand preference concerns. Next, we asked participants to answer questions about customer forgiveness (3 items), E-loyalty (4 items), and E-NWOM intention (3 items) (see Web Appendix), using a seven-point Likert scale (1 = “strongly disagree” and 7 = “strongly agree”).

4.2. Results

Through a one-way ANOVA (2 conditions: Process vs. Result), we found that participants in the transparency process (vs. result) framework condition showed a significant difference in customer forgiveness ($F(1, 211) = 13.6$, $p < .001$, $\eta^2_p = .060$). Customer forgiveness index (average of three customer forgiveness items; Cronbach’s $\alpha = .86$) and transparency process ($M = 5.55$, $SD = 1.11$) showed more strongly customer forgiveness than result ($M = 4.93$, $SD = 1.34$; $t(211) = 3.68$, $p < .001$, $d = .505$). Meanwhile, participants in the transparency process (vs. result) framework showed significant differences in E-loyalty ($F(1, 211) = 61.5$, $p < .001$, $\eta^2_p = .226$). E-loyalty index (Average of the four E-loyalty items; Cronbach’s $\alpha = .85$) and E-loyalty in the process condition ($M = 5.30$, $SD = 1.05$) were stronger than the result condition ($M = 4.18$, $SD = 1.03$; $t(211) = 7.84$, $p < .001$, $d = 1.07$). Finally, participants in the transparency process (vs. result) framework also showed significant differences in E-NWOM intention ($F(1, 211) = 22.8$, $p < .001$, $\eta^2_p = .100$). E-NWOM intention index (average of three E-NWOM intention items;

Cronbach's $\alpha = .90$), E-NWOM intention was lower in the process condition ($M = 2.62$, $SD = .91$) than in the result condition ($M = 3.51$, $SD = 1.68$; $t(211) = -4.84$, $p < .001$, $d = -.663$).

4.3. Discussion

We experimented with service recovery transparency in Study 1, and the test results offered preliminary support for our hypothesis 1. That is, when bystanders perceived service recovery transparency activities in social media as a process rather than a result, bystanders displayed higher levels of customer forgiveness and E-loyalty and lower levels of E-NWOM intention.

5. Study 2

Study 2 examined customer forgiveness as a mediating variable between service transparency and E-loyalty, as well as E-NWOM intention, to further assess our hypothesis. By measuring transparency (rather than manipulating it), we infer that customer forgiveness as a mediator between transparency and E-loyalty, E-NWOM intention can increase E-loyalty and decrease E-NWOM intention.

5.1. Method

Two hundred and thirty-seven online participants participated in this study and received a small compensation. Excluding 17 outliers, the final sample size was 220.

By asking the participant to imagine himself browsing social media and coming across a Chinese restaurant online delivery service provider named "Faline." Subsequently, we then displayed to the participants the transparency of the service recovery dialogue between other customers who openly complained about the restaurant's service failure on the SNS platform and showed the service provider's transparent service recovery process (see Web Appendix).

A customer with the ID La** complained about her service encounter under the brand SNS. La** ordered a spicy hot pot from an online delivery service, but when it arrived, she noticed that the soup had spilled because of a packing issue, so she posted a public complaint on the brand's SNS page to seek a solution. To avoid customer brand preference, we manipulated the imaginary brand named "Faline." After reading the scenario, participants were asked to answer the question, "Have you ever heard of the brand Faline?" ($M = 2.24$, $SD = .98$), which proved that our brand imaginary manipulation was successful in avoiding the brand preference problem. Next, we invited participants to respond to questions about transparency (4 items), customer forgiveness (3 items), E-loyalty (4 items),

and E-NWOM intention (3 items) (see Web Appendix) using a seven-point Likert scale (1 = "strongly disagree" and 7 = "strongly agree").

5.2. Data Analysis

5.2.1. Sample Characteristic Analysis

Demographic characteristics of the sample: in terms of gender distribution, males accounted for 57.3%, and females accounted for 42.7%. In line with Backlinko's report (2023), it is suggested that the average gender ratio of social media users globally is currently 54% male and 46% female. In terms of age distribution, 4.5% were under 18 years old, 60.9% were 18–30 years old, and 16.4% were 31–40 years old; 12.7% were 41–50 years old and 5.5% were 51 years old and older. The Chinese Social Media Statistics and Trends Infographic (2023) report shows that around 70% of social media users in China are younger than 30 years old, which shows that social media users are mainly concentrated in younger groups. Also, according to Doyle (2019), the study indicated that the main group of users who currently use social media to make complaints are between the ages of 18 and 35 years old, which is in line with the characteristics of the users of the social platforms that this study is geared towards. In addition, 21.8% of the respondents were in high school or below, 37.7% had a bachelor's degree, and 37.7% had a postgraduate degree. Lenhart et al. (2010) suggested that educational experience is a factor in social media use and that men and women may use social networking sites more often if they have college experience. Specific demographic information (see Table 1)

Table 1 : Characteristics of Sample

	Item	Freq.	Percentage
Gender	Female	94	42.7%
	Male	126	57.3%
Age	<18 years old	10	4.5%
	18-30 years old	134	60.9%
	31-40 years old	36	16.4%
	41-50 years old	28	12.7%
	>51 years old	12	5.5%
Education background	High school and below	48	21.8%
	Undergraduate degree	89	40.5%
	Graduate degree	83	37.7%
Total		220	100%

5.2.2. Reliability and Validity

We used SPSS 26.0 and Smart PLS 4.0 to analyze the data and test the model. According to research by Reinartz et al. (2009), PLS is better suited for analysis when the sample size is less than 250. Latent variable extraction using Cronbach's alphas, AVE, and CR both demonstrated good

reliability and convergent validity (see Table 2). We applied two techniques to the discriminant validity test. To confirm the construct's discriminant validity, we first applied Fornell and Larcker's (1981) criterion, which states that the square root of the AVE must be bigger than the correlation coefficient (see Table 3). Second, we examined the heterotrait-monotrait ratio (HTMT) (Henseler et al., 2015; Voorhees et al., 2016). Voorhees et al. (2016) recommended using an HTMT of .85 as the test criterion, which means that when the HTMT value is greater than .85, the study variable lacks discriminant validity. In our study, the HTMT values between the two variables were confirmed to range from .456 to .549 (see Table 4) and were all less than .85, passing the test of discriminant validity and demonstrating that all the study's variables have good discriminant validity.

Table 2 : Characteristics of Sample

Variables	Items	Factor loading	α	CR	AVE
Transparency	T1	.945	.921	.944	.808
	T2	.856			
	T3	.891			
	T4	.901			
Customer forgiveness	CF1	.930	.881	.927	.809
	CF2	.863			
	CF3	.904			
E-loyalty	EL1	.941	.891	.925	.755
	EL2	.839			
	EL3	.826			
	EL4	.866			
E-NWOM intention	ENOW1	.917	.872	.921	.796
	ENOW2	.844			
	ENOW3	.913			

Note : α =Cronbach's Alpha;CR=Composite reliability; AVE= Average Variance Extracted.

Table 3: Correlations and Discriminant Validity

Variables	M	SD	1	2	3	4
Customer forgiveness	4.43	1.63	.899			
E-loyalty	4.84	1.49	.429	.869		
E-NWOM intention	4.45	1.59	-.484	-.441	.892	
Transparency	4.50	1.68	.489	.422	-.418	.899

Note: The italic on the diagonal indicates the square root of AVE, others indicate the correlation coefficient.

Table 4: Discriminant Validity - HTMT

	1	2	3
1.Customer forgiveness			
2.E-loyalty	.475		
3.E-NWOM intention	.549	.492	
4.Transparency	.540	.456	.466

5.2.3. Common Method Bias

Kock & Lynn (2012) proposed the full collinearity test as a method for collinearity detection. According to the variance inflation factors for each latent variable, which range from 1-1.315 and are less than 3.3, there isn't a common method bias in any of the latent variables (Kock, 2015). So, the issue of common method bias in this study won't have an impact on the research.

5.3. Results

We verified the direct effect between transparency, customer forgiveness, E-loyalty, and E-NWOM intention. First, transparency had a positive effect on customer forgiveness ($\beta = .489, p = .000$), customer forgiveness had a positive effect on E-loyalty ($\beta = .293, p = .000$), and transparency also had a significant positive effect on E-loyalty ($\beta = .278, p = .000$). Next, service recovery transparency had a significant direct effect on E-NWOM intention ($\beta = -.238, p = .000$), and customer forgiveness had a negative effect on E-NWOM intention ($\beta = -.368, p = .000$).

5.4. Mediation Analysis

We used the bootstrap method to measure the effect of customer forgiveness as a mediator. The criterion for the mediation effect is that the indirect effect is significant, and the upper and lower limits of the 95% confidence interval do not include 0 (Zhao, 2010). The findings showed that customer forgiveness provided a complementary mediation effect between transparency and E-loyalty ($\beta = .143, p = .000, 95\% \text{ CI } [.070, .225, \text{excluding zero}]$). Customer forgiveness also has a complementary mediation effect between transparency and E-NWOM intention ($\beta = -.180, p = .000, 95\% \text{ CI } [-.256, -.112, \text{excluding zero}]$), supporting Hypotheses 2a and 2b.

5.5. Discussion

Study 2 measured the variables and validated the SEM model; we validated transparency as the independent variable, E-loyalty and E-NWOM intention as the dependent variables, and customer forgiveness as the mediator variable, and verified the important mediating role of customer forgiveness. We find that customer forgiveness has a complementary mediating effect between transparency and E-loyalty, and that service providers can enhance bystanders' customer forgiveness when they demonstrate higher transparency in social media and increase customer E-loyalty through customer forgiveness. Meanwhile, customer forgiveness has a complementary mediating effect between transparency and E-NWOM intention, which can

enhance bystanders' customer forgiveness when service providers exhibit higher transparency in social media, reduce E-NWOM intention, and reduce E-NWOM intention through customer forgiveness.

6. Study 3

6.1. Method

To test hypotheses 3a, 3b, and 3c and clarify the interaction effect of service recovery transparency and recovery types. We manipulated a 2 (transparency: process vs. result) \times 3 (service recovery types: psychological vs. tangible vs. hybrid) ANOVA between subject designs. Transparency and service recovery types were manipulated. The participants were three hundred and twenty-one undergraduate students (151 female, $M_{\text{age}} = 19.51$, $SD = 2.24$) at a university in eastern China who were randomly assigned to one of six scenarios, completed the questionnaire, and received a small amount of payment.

Participants were asked to imagine that they were browsing SNS and found an online supermarket service provider called "Hippie Market." They were shown that other customers had publicly complained on SNS about service failures and that they could see the service provider's approach to transparency (process vs. result) and service recovery (psychological vs. tangible vs. hybrid). A customer with the ID name Ja** complained about her service encounter under the brand SNS. Ja** booked some items through an online delivery service but found some of the items missing when she received them, so she voiced a public complaint under the brand's SNS to seek a solution. To avoid customer brand preference, we manipulated the imaginary brand. After reading the scenario, participants were asked to answer the question, "Have you ever heard of the brand Hippie Market?" ($M = 2.50$, $SD = .85$), which proved that our imaginary brand manipulation was successful and could avoid the customer brand preference problem. Next, we invited participants to respond to questions about customer forgiveness (3 items), E-loyalty (4 items), and E-NWOM intention (3 items) (see Web Appendix) using a seven-point Likert scale (1 = "strongly disagree" and 7 = "strongly agree").

6.2. Result

6.2.1. Customer Forgiveness

The main effect of transparency was significant ($F(1, 315) = 9.11$, $p = .003$, $\eta^2_p = .028$), and the transparency

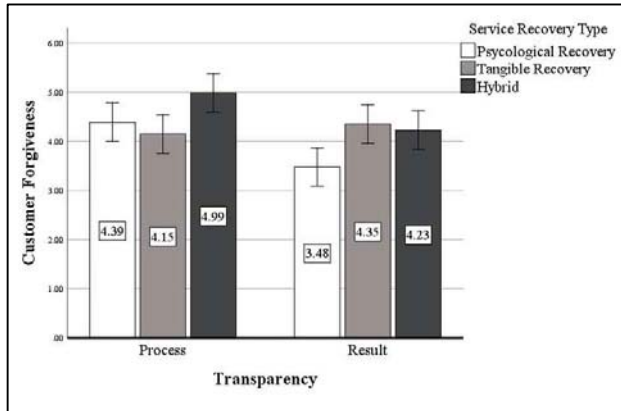
process produced higher customer forgiveness than the result ($M_{\text{process}} = 4.51$, $SD = 1.53$ vs. $M_{\text{result}} = 4.02$, $SD = 1.45$). Additionally, the main effect of the service recovery type was also significant ($F(1, 315) = 5.72$, $p = .004$, $\eta^2_p = .035$). Hybrid ($M_{\text{hybrid}} = 4.61$, $SD = 1.16$) produced higher customer forgiveness than tangible ($M_{\text{tangible}} = 4.25$, $SD = 1.63$) and psychological ($M_{\text{psychological}} = 3.93$, $SD = 1.62$). The interaction effect of transparency and service recovery types was also significant ($F(1, 315) = 4.60$, $p = .011$, $\eta^2_p = .028$). Hybrid in the transparency process ($M_{\text{hybrid}} = 4.99$, $SD = 1.21$ vs. $M_{\text{psychological}} = 4.39$, $SD = 1.58$ vs. $M_{\text{tangible}} = 4.15$, $SD = 1.57$) produced greater customer forgiveness than psychological and tangible recovery. Tangible and hybrid ($M_{\text{tangible}} = 4.35$, $SD = 1.60$ vs. $M_{\text{hybrid}} = 4.23$, $SD = .97$ vs. $M_{\text{psychological}} = 3.48$, $SD = 1.54$) in transparency results produced higher customer forgiveness than psychological recovery (see Figure 2), which partially supports H3a.

6.2.2. E-loyalty

We found a significant difference in transparency ($F(1, 315) = 3.43$, $p = .065$, $\eta^2_p = .011$), and the transparency process produced higher E-loyalty than the result condition ($M_{\text{process}} = 4.56$, $SD = 1.65$ vs. $M_{\text{result}} = 4.24$, $SD = 1.46$), but the main effect of service recovery types was non-significant ($P > .1$). The interaction effect of transparency and service recovery types was significant ($F(1, 315) = 5.71$, $p = .004$, $\eta^2_p = .035$). And in service transparency process conditions, hybrid ($M_{\text{hybrid}} = 4.87$, $SD = 1.37$ vs. $M_{\text{tangible}} = 4.10$, $SD = 1.76$ vs. $M_{\text{psychological}} = 4.70$, $SD = 1.74$) showed higher E-loyalty than tangible and psychological recovery. In the transparency result condition, tangible had higher E-loyalty than hybrid and psychological ($M_{\text{tangible}} = 4.60$, $SD = 1.87$ vs. $M_{\text{hybrid}} = 4.17$, $SD = 1.10$ vs. $M_{\text{psychological}} = 3.95$, $SD = 1.24$) (see figure 3), which partially supports H3b.

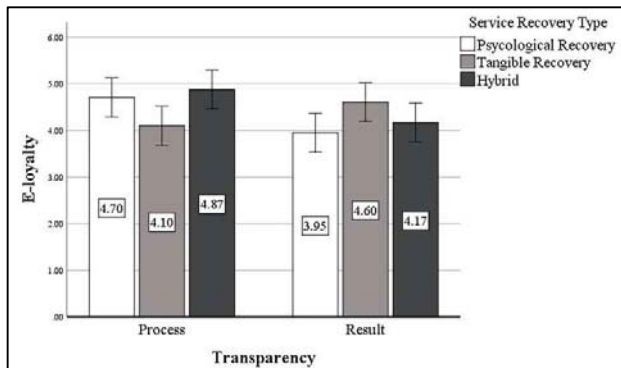
6.2.3. E-NWOM Intention

The main effect of transparency is significant ($F(1, 315) = 12.58$, $p = .000$, $\eta^2_p = .038$), and the transparency process had a lower effect on E-NWOM intention than the result ($M_{\text{process}} = 3.59$, $SD = 1.27$ vs. $M_{\text{result}} = 4.04$, $SD = .98$). The main effect of service recovery types was also significant ($F(1, 315) = 3.378$, $p = .024$, $\eta^2_p = .023$), and hybrid ($M_{\text{hybrid}} = 3.57$, $SD = 1.04$ vs. $M_{\text{psychological}} = 3.93$, $SD = 1.12$ vs. $M_{\text{tangible}} = 3.95$, $SD = 1.26$) brought lower E-NWOM intention than psychological and tangible recovery. However, the interaction effect result was non-significant ($F(1, 315) = 1.48$, $p = .311$, $\eta^2_p = .007$) (see Figure 4), which does not support H3c.



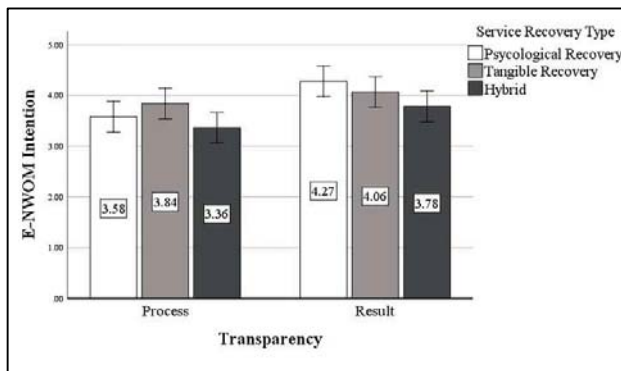
Note: Error bars represent standard errors.

Figure 2: The Interaction Effect of Transparency and Service Recovery Type on Customer Forgiveness



Note: Error bars represent standard errors.

Figure 3: The Interaction Effect of Transparency and Service Recovery Type on E-loyalty



Note: Error bars represent standard errors.

Figure 4: The Interaction Effect of Transparency and Service Recovery Type on E-NWOM Intention

6.2. Discussion

In study 3, we validated transparency as an independent variable, service recovery types as a moderator variable, and customer forgiveness, E-loyalty and E-NWOM, as dependent variables. We verified the interactions between service recovery types (psychological vs. tangible vs. hybrid) and transparency (process vs. result) on bystanders' customer forgiveness, E-loyalty, and E-NWOM intention. It has been established that the transparency process, when combined with the hybrid recovery type, considerably outperforms tangible recovery and psychological recovery in terms of customer forgiveness and E-loyalty. At the same time, the effect of service recovery transparency results combined with tangible recovery and hybrid recovery on customer forgiveness is significantly greater than that of psychological recovery. Tangible recovery combined with transparency results has a greater effect on E-loyalty than hybrid and psychological recovery. However, the interaction effect is non-significant for E-NWOM intention, partially supporting H3a and H3b but not supporting H3c.

7. General Discussion and Implications

Social media provides companies with another distribution channel that may help them reach new customers. This channel can be particularly beneficial for smaller firms (Li & Zhu, 2020; McCann, 2020). Conversely, the company may also have service failure issues, leading to more consumer complaints. We believe that this online feedback information distribution on social media is a double-edged sword for companies. In the era of the Internet, there are many ways to share and transmit information, which opens some new avenues for complaints. The use of social media as a forum for complaints will grow in popularity as younger people become mainstream customers (Alcántara, 2020). As a result, the company's service recovery plan must include both offline and online social media. Companies must select appropriate and transparent recovery types based on their understanding of social media's characteristics when customers voice online complaints on social media to find solutions. The tactic may have a significant impact on both the complainant and bystanders. Our research is grounded in how bystander behavior on social media is affected by transparency (process vs. result). We use customer forgiveness as a mediating variable that can translate transparency into less bystander disruption (E-NWOM) as well as satisfaction (E-loyalty). We also input service recovery types (psychological vs. tangible vs. hybrid) as a moderating variable into the model to clarify its potential mechanism of

influence on customer forgiveness, E-Loyalty and E-NWOM intention.

We believe that when people publicly voice their complaints on social media, it speaks to their desire for an open and transparent resolution. In addition, customer complaints draw the attention of bystanders because companies are not only dealing with online complaints from customers but also online complaints in front of bystanders (Hogreve et al., 2019). This paper is based on three studies we conducted that examined China's rapidly expanding online delivery market. Through a one-way ANOVA analysis, Study 1 indicates that the transparency process (vs. result) can generate more customer forgiveness, E-loyalty, and less E-NWOM intention among bystanders. Based on the findings from Study 1, in Study 2, we developed a SEM model that supports the mediate effect of customer forgiveness between transparency, E-loyalty, and E-NWOM intention. As suggested in Tsarenko and Tojib's (2011) study, service providers' efforts in unfolding service events can promote consumer forgiveness, which can have an impact on service outcomes. In Study 3, we manipulated six conditions to examine the interaction effect between transparency (process vs. result) and service recovery types (psychological vs. tangible vs. hybrid). It is confirmed that the service recovery transparency process combined with hybrid's service recovery approach has an even higher effect on bystander customer forgiveness and E-loyalty when compared to tangible recovery and psychological recovery. Transparency results combined with tangible recovery and hybrid recovery have a greater effect on E-loyalty than psychological recovery. Transparency results combined with tangible recovery have a greater effect on customer forgiveness than hybrid and psychological recovery. However, there is a non-significant interaction between transparency and recovery types on E-NWOM. Because the research group for Study 3 consisted of undergraduate students at a university in eastern China, there was sample homogeneity. They are all active groups on social media with similar life backgrounds and ideas. Social media can provide a virtual space for them to explore topics they are interested in, making it easier for them to strengthen their connections (Wang et al., 2011). They use online takeout platforms more frequently and tend to associate service failures they have suffered with observing the service recovery process, and they are more likely to express their dissatisfaction and generate negative WOM. Grieve et al. (2013) pointed out that the frequent use of social media can lead to negative emotions such as fear, loneliness, frustration, and dissatisfaction, as the content presented on social media may be untrue, fictionalized, or over-interpreted, leading people to form false judgments about their own and others' standard of living. Therefore, we believe that it is possible that the use of a homogeneous

sample of the student population may have led to the unsatisfactory results of the E-NWOM intention.

Social media provides a low-cost platform for customers to voice their complaints, allowing bystanders to view customer complaints and companies' service recovery efforts online, as opposed to traditional complaint channels. Therefore, it is necessary for managers to pay attention to the management of customer complaints on social media.

First, companies must employ a systematic approach to identify customer complaints posted on social media platforms and provide certain response processes to manage service recovery on social media in the distribution of feedback information. Companies need to look at social media complaints as an important part of their customer relationship management system as well. Businesses need to make extensive use of data technology to create a set of procedures that can alert them to complaints online, which can be used to assist them in quickly identifying complaints. Bhadouria (2021) highlighted that the complaint management system is a contemporary tools to improve productivity by resolving the company's service complaints online. Thus, the application of this system on SNS can track customers' service complaints in a timely manner and alert the company to coordinate, monitor, follow up on, and resolve them.

Second, managers must be clear about how the interaction of service recovery transparency and service recovery types can be better utilized in the social media environment to address the impact that customer complaints may have on the company. As Golmohammadi et al. (2021) pointed out that when the company's response to complaints on social media is visible, it generates positive customer care signals and certain publicity. As our study confirms, this will also have a positive effect on bystanders affiliated with the same customer group. We found that in developing countries like China, when customers publicly complain, companies that publicly display hybrid recovery methods to bystanders are more able to gain customer forgiveness and E-loyalty. Interestingly, however, when demonstrated service transparency was presented as a result, tangible recovery had a greater impact on bystanders' customer forgiveness and E-loyalty. This is because "cultural systems of meaning" have a significant impact on how we organize our priorities, interact with others, and process information (Triandis, 1989).

Third, it is imperative for service providers to introduce the concept of customer forgiveness as one of the most effective coping strategies for social context recovery. This is because managing reflections has been recognized as an important factor that can inhibit or facilitate consumer forgiveness (Tsarenko & Tojib, 2011). Service providers should know consumers use different ways to cope after facing a service failure, such as complaints, NOW, and

seeking solutions. Consumers need to regain their emotional balance after a service failure occurs, which is a prerequisite for forgiveness. If service providers address issues on social platforms in a manner that meets consumers' expectations, it may accelerate consumer forgiveness and lead to a range of positive outcomes.

Fourth, managers should standardize the degree of transparency. It can be challenging for managers to be entirely open and honest about their recovery types with bystanders since doing so could result in more complaints and substantial compensation claims, both of which can be highly expensive for the company. Managers can standardize the service recovery process and categorize frequent forms of service failure when managing transparency in service recovery so that customers and bystanders feel treated equally.

Finally, businesses should place a focus on the creation of service recovery strategies. By emphasizing the conversational human voice strategy, businesses need to interact with customers in conversation (Kelleher, 2009) and convey their humanity and warmth to them (Malone & Fsike, 2013) to increase forgiveness from bystanders.

8. Limitations and Future Research Directions

This study offers valuable insights for service companies regarding social media as distribution feedback information to manage service recovery. However, it is important to note that this study still has certain limitations. First, regarding the generality of the research, this study only focuses on the takeout delivery industry and does not investigate other service industries (such as aviation, hotels, banks, hospitals, etc.). Future research should consider starting from different industries and observe whether the research results have reproducibility. Secondly, this study only considered the direct damage of service failure but did not consider the definition of service failure degree. Future research will also consider the mechanisms of service failure under different transparency and service recovery strategies. Finally, this study focuses on the social media complaints of Chinese customers. According to the cultural dimension research proposed by Hofstede (2011), we argue that there are typical differences between developing and developed countries in the impact of social media service recovery transparency and recovery types of interactions on bystanders. Therefore, backward research will also consider the difference in the role of cultural dimensions in the recovery of social media services in developing and developed countries to enrich existing research.

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