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EMPIRICAL ARTICLE

How much is enough? An investigation of monetary compensation for service failures

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Abstract
The amount of compensation for service failures significantly influences consumer satisfaction, but both under- and overcompensation can be ineffective. Customer expectations for monetary compensation vary by service context. This study explores three contextual factors—service recovery characteristics, service type, and failure type—through scenario-based experiments. The findings reveal that outcome failures require higher compensation than process failures, and expectations increase with failure severity. Additionally, positive emotional displays by employees enhance the recovery experience but cannot replace fair compensation. These insights offer guidance for tailoring service recovery strategies to specific service contexts.

Keywords Service recovery · Complaint handling · Compensation · Failure severity · Emotions

1 Introduction

Effective service recovery can provide firms with a significant long-term competitive advantage. As the focus in customer relationship management has shifted from a transaction-based approach to considerations of customer lifetime value, it has become crucial for firms to minimize the negative consequences of service failures and prevent the spread of negative word-of-mouth (Nazifi et al. 2021; Van Vaerenbergh et al. 2012). Effective service recovery strategies not only enhance customer satisfaction but also improve customer retention, underscoring the need for firms to identify the most effective tools for service recovery (Knox and Van Oest 2014). While service recovery research is at a maturity stage, studies synthesizing the state of art of this research field suggest that there are still important issues that have not

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been adequately addressed (Gregoire and Mattila 2021; Khamitov et al. 2020; Liu et al. 2024).

Compensation is among the most employed tactics in service recovery; however, the extant research on its impact remains inconsistent. The determination of an appropriate level of compensation presents a significant challenge, as both undercompensation and overcompensation can impede effective service recovery (Gelbrich and Roschk 2011; Noone 2012; Roggeveen et al. 2012). This leads to the question of what constitutes sufficient compensation. Is 100% compensation adequate, or should it exceed 100% to meet customer expectations? Gelbrich et al. (2016) propose a somewhat linear relationship between compensation and customer satisfaction, with a threshold of 120% compensation. Alternatively, could partial compensation combined with high-interactional recovery efforts suffice (Mattila 2004)? Such overcompensation may result in the inefficient use of resources without a corresponding increase in customer satisfaction. To reduce excessive compensation while still ensuring customer satisfaction, companies have explored techniques such as anchoring, which involves providing reference points for "typical" compensation amounts (Kron et al. 2023).

Consumers' assessments of fair compensation are not based on objective criteria but on their subjective judgments, making the analysis of opportunistic consumer demands a sensitive area of research. What appears opportunistic to a company may seem fair to a consumer, and vice versa. Wirtz and McColl-Kennedy (2010) note that when consumers perceive the compensation, treatment, or complaint-handling process as unfair, they may seek additional compensation, sometimes even resorting to false claims to achieve their goals.

Although the effects of compensation, particularly in contrast to the absence of compensation, have been extensively examined, research addressing the determinants of an appropriate compensation amount remains relatively scarce. Existing studies generally conclude that the optimal level of compensation is largely context dependent. (Roggeveen et al. 2012; Kanuri and Andrews 2019). The lack of conclusive results on this topic underscores the need for further research to better understand when consumers require higher or lower compensation and determine the appropriate range of compensation across different service failures, service types, and recovery efforts. Through a series of experiments, we demonstrate that variations in service industries, failure types, and recovery efforts significantly influence the amount of compensation consumers perceive as fair for a service failure. Our research makes important contributions.

First, we propose that the amount of monetary compensation required by consumers depends on the nature of the service, the nature of the failure, and the nature of the recovery effort. Our findings reveal that outcome failures necessitate more monetary compensation than process failures, and tangible services require more compensation than intangible services. The severity of the failure is the strongest predictor of expected compensation, moderated by the locus of responsibility. Consumers are less demanding when they perceive the service provider as not being at fault, but more so when the provider is clearly responsible. Although these aspects have been discussed in the literature, to our knowledge, they have not been used to assess their impact on the required amount of compensation.

Secondly, we contribute to the research on the impact of displayed emotions during the service recovery process. Our experimental results indicate that explicitly displayed negative emotions significantly increase the expected amount of monetary compensation. Our contribution to the existing knowledge is that this effect is absent in cases of neutral emotions. Respondents expect similar compensation for emotionally charged recovery efforts as they do for emotionally neutral ones. This finding challenges the notion that a sincere apology can substitute for compensation and explains the contradictory results observed when these two recovery efforts interact.

The results can also provide important lessons for practice. Depending on the type of service a company provides, it must be aware of its impact. Developing preliminary guidelines according to the type of fault is also important. Our research also shows that the recovery effort itself influences the amount of compensation expected. With these results, service providers will be able to develop policies for complaint handling and compensation and make recovery a strategic priority.

The subsequent sections of our study are structured as follows: we first present a literature review, followed by a discussion of our hypotheses and underlying concepts. We then describe our research methods and the results of four studies, concluding with a general discussion of our theoretical contributions and practical implications.

2 Literature review and hypothesis development

2.1 The role of perceived justice in service recovery efforts

Research on service recovery is grounded in perceived justice theory, which posits that the fairness of service recovery efforts can be evaluated across three dimensions: procedural, interactional, and distributive justice (Blodgett et al. 1997; Maxham and Netemeyer 2002, 2003; McColl-Kennedy and Sparks 2003; Smith et al. 1999). Consumers assess the fairness of complaint handling based on the recovery process, interactions with the service provider, and the outcome of the recovery. Consequently, organizations must ensure that all three dimensions are perceived as fair to maintain customer loyalty (Choi and Choi 2014). While effective service recovery encompasses all justice dimensions (Van Vaerenbergh and Orsingher 2016), their individual impacts may differ. Orsingher et al. (2010) found, in a review of over 80 studies, that distributive justice exerts the most significant influence on satisfaction with service recovery, a finding supported by Gelbrich and Roschk's (2011) meta-analysis of 87 studies. Furthermore, different justice dimensions evoke distinct customer reactions. Choi and Choi (2014) observed that distributive justice primarily influences customer loyalty and word-of-mouth behavior, whereas procedural and interactional justice affect consumers' emotions and trust in the recovery process.

The interplay between justice dimensions is also noteworthy. For instance, consumers may not always distinguish between distributive justice (fair compensation) and interactional justice (fair treatment) (Gelbrich and Roschk 2011), with some willing to accept lower distributive justice if they perceive higher interactional justice (Honora et al. 2024).

2.2 Distributive justice in service recovery

Distributive justice, a central component of justice theory, pertains to the perceived fairness of outcomes received during service recovery. This justice dimension has been proven to be a strong predictor of customer satisfaction following service recovery. Orsingher et al. (2010), in a meta-analytic review, found that distributive justice has a greater impact on satisfaction with recovery than procedural or interactional justice. Tax et al. (1998) identified compensation as the most critical dimension of service recovery influencing consumers' perceptions of distributive justice. Subsequent research has consistently found that higher levels of compensation lead to more favorable evaluations of distributive justice (e.g. Ha and Jang 2009; Smith et al. 1999).

Tangible compensation, particularly monetary, is the most common form of service recovery (Grewal et al. 2008), and prior research has shown its positive effect on consumer satisfaction, repurchase intentions, and mitigation of negative word-of-mouth (Davidow 2003). Monetary compensation can be classified into three types: partial compensation (< 100% of the loss), full compensation (100%), and overcompensation (> 100%). Consumers generally perceive partial and full compensation as fairer than no compensation (Davidow 2003;), though the effects of overcompensation remain debated. Noone (2012) suggests that cash-based overcompensation is viewed as fairer than full compensation, but the relationship between compensation and perceived fairness or satisfaction may not be linear (Gelbrich et al. 2015; Noone and Lee 2011).

Contrary to these findings, Noone and Lee (2011) -in their study of complaints about overbooking in hotels- found that overcompensation – especially in cash – leads to a significantly higher level of consumer satisfaction yet does not affect repurchase intentions and loyalty. This aligns with prospect theory, which posits that immediate gains (such as cash) are valued more by consumers than future benefits (e.g., discounts or vouchers) (Kahneman and Tversky 1979). It follows that compensation in cash is much more valuable for consumers than another form of compensation related to a future purchase, such as discounts or coupons (Lii and Lee 2012; Roschk and Gelbrich 2014).

Compensation can also be framed through the disconfirmation paradigm, where recovery efforts are evaluated based on whether they fall short of, meet, or exceed consumer expectations. Roggeveen et al. (2012) argue that exceeding expectations does not necessarily enhance satisfaction, repurchase intentions, or perceived fairness.

Several factors can diminish the intended impact of compensation. Albrecht et al. (2019) identified diminishing returns on recovery satisfaction depending on the form of compensation (individual vs. group compensation). Relationship quality is also crucial: Gelbrich et al. (2016) found that the effect of overcompensation on satisfaction is nonlinear in the case of weak relational groups, but linear for strong relational groups. In low-relationship groups reimbursement is viewed primarily as compensation for economic loss, whereas high-relationship groups perceive overcompensation as an acknowledgment of their loyalty. Moreover, when consumers perceive a service failure as morally unacceptable, overcompensation may be counterproductive (Chen

et al. 2018). Context may also play a role; in emerging markets for example, consumers who are subjected to scarcity of resources may trade resources that are dissimilar by accepting a lower level of compensation relative to their loss and still derive greater satisfaction (Borah et al. 2020). Furthermore, the way the compensation is presented influences the level of satisfaction; the compensation coming from a front-line employee is more appreciated than the same amount of compensation offered in an impersonal way (Roschk and Gelbrich 2017).

2.3 Situational factors affecting distributive justice: the conceptual model

Prior research confirmed that the efficiency of service recovery is context-dependent (Levesque and McDougall 2000) and there is no evidence for the existence of "one best method" that can be applied to all service recovery situations, but the efficiency of service recovery depends on various contingencies such as relationship and service encounter characteristics (Hoffman and Kelley 2000).

In this study, we examine three categories of situational factors: the type of recovery action, the type of service, and the type of failure (Fig. 1). These three factors encompass the most important elements to consider in effective complaint handling. The first group of situational factors is related to the type of recovery efforts. Positive emotions displayed by employees can elicit positive emotional responses in service encounters, improving consumers' affect and mood and leading to higher satisfaction with the service experience (Otterbing 2017). It is also commonly accepted that consumers use a compensatory model in forming their perception of overall justice (Mattila et al. 2009). Thus, justice dimensions are not independent of each other; their combination is the basis of fairness perception. Thus, distributive justice perceptions are interrelated with interactional justice components such as display of emotions. Finally, as monetary compensation is at the centre of our research, we find it important to investigate the form in which the provider determines the amount of compensation in the service recovery process.

Another category of situational factors involves the types of services included in empirical studies. This factor has received limited attention in the literature. Research

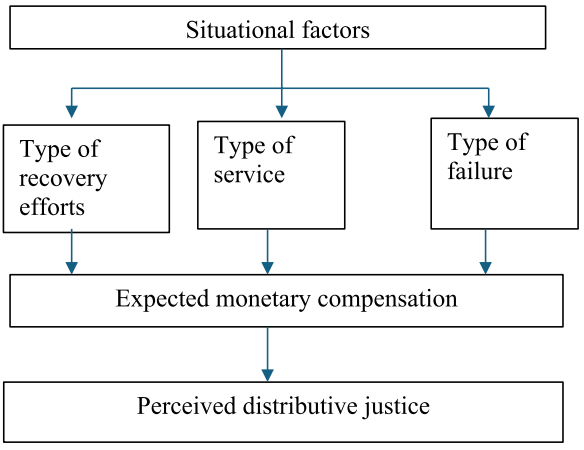

Fig. 1 Conceptual model

on service recovery usually focuses on a single industry as its context. When differences between industries are analyzed, researchers typically examine service recovery across various sectors. For instance, De Ruyter and Wetzels (2000) studied four types of services: hairdressers, coffee shops, clothing retailers, and banks. While these studies provide valuable insights, they often lack systematic comparisons across different industries, limiting the applicability of their findings to other sectors.

Failure characteristics have been studied in relation to service recovery strategies from various aspects. We suggest that the most important characteristics of failures that may affect satisfaction are failure magnitude (Mattila 2001), service failure attributions (Wirtz and Mattila 2004) and the type of failure, i.e. process vs outcome (Chuang et al 2012). Studies that investigated the effect of failure magnitude and severity found that recovery is more difficult in the case of a severe failure (Mattila 1999; Sparks and Fredline 2007; Weun et al. 2004) Finally, a distinction should be made between process and outcome failures as service quality depends on both the outcome (technical quality) and the process (functional quality) of the service (Smith et al. 1999).

2.4 Hypothesis development

2.4.1 Type of recovery effort

2.4.1.1 Displayed emotions Prior research provided evidence for the impact of emotions displayed by employees on customer reactions; positive emotions displayed by front-line employees trigger positive emotions in customers, while negatively displayed emotions place customers in a negative emotional state (Pugh 2001) as suggested by emotional contagion theory (Hatfield et al.1993). As customers need to restore a sense of fairness and distributive justice can influence emotions (Cai and Qu 2018; Valentini et al. 2020) we can assume that distributive justice could offset the negative emotions experienced by customers. Based on previous research suggesting that customers with negative emotional responses place greater emphasis on compensation than customers with no emotional response (Smith and Bolton 2002) we propose the following hypothesis:

H1: Displayed negative (positive) emotions increase (decrease) the amount of expected monetary compensation compared to no or displayed positive (negative) emotions.

2.4.1.2 Framing of compensation The framing effect is a cognitive bias where individuals arrive at different conclusions based on how the same information is presented. Research by Kahneman and Tversky (1984) has firmly established that the framing of decision problems significantly impacts cognitive judgments.

In service recovery research, there is little evidence of the framing effect of monetary compensation. In experimental designs researching monetary compensation either dollar form or percentage is used (Edström et al. 2022; Gelbrich et al. 2015) but

no studies are comparing the effects of the two types of framing. These studies found a nearly identical effect of compensation regardless of the form. While Gelbrich et al. (2015) suggest 70–80% compensation as optimal, Edström et al. (2022) found that 1200 SEK is the average amount required compared to the original amount of 1500 SEK, that is 80%.

To develop our hypothesis regarding the effects of compensation framing, we draw on insights from research in pricing, promotion, and justice theory. Framing studies (Kahneman & Tversky 1984) show that consumers respond differently to the same monetary information depending on how it is presented. For low-priced products, percentage discounts are perceived as more significant than dollar reductions of the same amount (Nusair et al. 2010), while expressing savings in absolute dollar amounts tends to diminish perceived value (Gonzalez et al., 2016). Likewise, promotional findings suggest that for smaller rewards, percentage framing increases perceived benefits compared to dollar framing (Chen & Hao 2024). In the context of service failure, Lii and Lee (2012) demonstrate a similar framing effect: compensation for low-priced products is viewed as less fair when expressed in dollar terms rather than percentage terms.

From a justice-theoretic perspective, these effects stem from consumers assessing recovery offers relative to perceived fairness between loss and compensation. Dollar framing highlights the actual size of the compensation, prompting direct comparison with the perceived loss and increasing perceptions of inequity. Conversely, percentage framing emphasizes proportionality, fostering a sense of balance and distributive fairness. Since service failures often involve minor or non-monetary losses, percentage framing should lead consumers to view the offer as fairer and require less compensation to restore equity.

H2: Framing the expected monetary compensation in percentage (dollar) terms decreases (increases) the amount of the expected compensation.

2.4.2 Type of service

In addition to recovery efforts, the type of service may significantly influence the compensation strategy when managing service failures. We consider the inclusion of industry as an important contextual variable in our analysis, given that service recovery studies tend to focus on a single sector, thereby limiting the generalizability of their findings. As frequently noted in the limitations sections of such studies (e.g.Weun et al. 2004), there is a recognized need to investigate outcomes across multiple sectors within a more generalizable analytical framework. In response to this gap, we applied a service typology and assessed its influence. In the context of our research, this approach reveals significant sectoral differences in perceptions of justice and the role of monetary compensation.

In accordance with Lovelock's (1983) classical service classification framework, this study uses two key criteria for categorizing services: the degree of tangibility and the direction of the service. The degree of tangibility pertains to the extent to which a service involves physical elements, while the direction of the service distinguishes whether the service is directed toward the recipient's person (i.e., the body)

or their possessions. The selection of these dimensions is theoretically grounded in social resource theory (Foa & Foa 2012), which emphasizes the significance of the nature of exchanged resources such as goods and services among others. The various resources are classified along two key dimensions: particularism and concreteness. Particularism denotes the extent to which the value of a resource is influenced by the people involved in the exchange, whereas concreteness refers to the degree of a resource's tangibility. Roschk et al. (2018) argue that social resource theory offers a useful foundation for guiding service development decisions. They extend the original framework by introducing the concept of intraclass variation, positing that not only do different resource types vary in their levels of particularism and concreteness, but that individual resource categories may also encompass internal variations along these dimensions. Consequently, it can be inferred that services, when conceptualized as a resource category within this framework, can be differentiated based on both their degree of tangibility and their direction to people or possessions.

2.4.2.1 Tangibility of service In the absence of cross-industry analyses, comparisons must rely on studies conducted in different sectors. Mattila (2001) examined three sectors (hairdressers, restaurants, and dry cleaners) representing a high contact service, a service directed at people's possessions and a standardized service directed at people. Davidow (2003) highlights that in cases like banking services, the importance of the service process and interaction with the provider affects the expected level of compensation. This suggests that in the case of services including intangible actions, consumers may more easily assess the fairness of the complaint-handling process and interaction, while the equity of the outcome is harder to determine. In contrast, distributive justice is more easily identified for services where the nature of the service act is tangible. Thus, we hypothesize:

H3: For services including tangible actions, consumers expect higher monetary compensation than for intangible services.

2.4.2.2 Direction of service Services that directly involve the body—such as medical procedures, beauty treatments, or fitness training—form a unique category of psychological ownership, where the self becomes the target of ownership (Peck & Luangrath 2023). Because psychologically owned targets are valued more personally, failures in bodily services are seen as not merely functional issues but self-relevant losses. From a justice perspective, these losses heighten the perceived unfairness between the consumer's investment (physical and emotional vulnerability) and the service result. To restore fairness, consumers are likely to expect higher compensation to reestablish equity.

After a failure, consumers may also feel increased uncertainty about future occurrences and risks. Compensation thus serves not only as restitution for the immediate loss but also as a symbolic act of fairness, signaling acknowledgement of harm and demonstrating a commitment to restoring balance in the exchange. The more person-

ally connected the service is to the individual, the greater the perceived loss and the stronger the expectation for restitution based on fairness.

H4: For services directed at people, consumers expect higher monetary compensation than for services directed at possessions.

2.4.3 Type of failure

2.4.3.1 Process vs. outcome Service quality depends on both the outcome (technical quality) and the process (functional quality) of the service (Grönroos 1988). Service failures can occur in either area, leading to a distinction between outcome and process failures (Borah et al. 2020; Jeon and Kim 2016). Outcome failures occur when the provider cannot fully deliver the core service, whereas process failures refer to deficiencies in the delivery itself, such as excessive waiting times.

Drawing on resource exchange theory (Brinberg and Wood 1983) -which posits that customer are inclined to exchange resources from similar categories- prior research shows that customers facing outcome failures require tangible recovery efforts from the service providers (economic resources), while those incurring process failures are more satisfied with psychological recovery (social resources) (Chuang et al. 2012).

In addition, in instances of outcome failures, customers are typically aware of the losses incurred, as the results of the service are clearly unsatisfactory. Conversely, in cases of process failures, the extent of the loss is more ambiguous and difficult for customers to evaluate. Consequently, it is proposed that outcome failures elicit higher compensation expectations due to a stronger perceived need for fairness. In contrast, the uncertainty surrounding appropriate redress in process failures may result in comparatively lower compensation expectations.

H5: In cases of outcome failure, consumers expect higher monetary compensation than in cases of process failure.

2.4.3.2 Severity of failure The severity of a service failure plays a crucial role in determining appropriate compensation, as the severity of failure influences satisfaction with service recovery (Sidhu et al. 2023). More severe service failures lead to lower consumer satisfaction and reduce repurchase intention (Cantor and Li 2019; Chuang et al. 2012; Harris et al. 2006; Mattila 2001) or increase negative WOM (Swanson and Hsu 2011). In line with perceived justice theory, we propose that with more severe service failures, the consumer perceives greater loss and thus expects more extensive service recovery efforts to maintain equity. We hypothesize that:

H6: As the severity of the service failure increases, consumers expect higher monetary compensation.

2.4.3.3 Locus of responsibility The attribution of responsibility for a service failure significantly affects the success of service recovery. In line with attribution theory,

consumers' attributions of responsibility influence their satisfaction and future behavior (Grewal et al. 2008). Attributions have three dimensions: locus of responsibility, stability, and controllability (Folkes 1984). Locus of responsibility suggests that a failure can be attributed to the service provider, the consumer, or factors outside the provider's responsibility. Post-recovery satisfaction is determined by the locus of responsibility. When consumers attribute the failure to the service provider, they will perceive lower satisfaction and will engage in negative WOM (Chang et al. 2015; Swanson and Hsu 2011). If the service provider is to blame, compensation becomes necessary, especially in cases of recurring failures (Grewal et al. 2008). We propose that:

H7: When the service provider is responsible for the service failure, consumers expect higher monetary compensation compared to when the service provider is not to blame.

3 Methods and results

Four independent studies were conducted to test the effect of service characteristics, failure type, and recovery effort on the amount of compensation demanded. We used scenario-based experiments to manipulate the independent variables. The specific scenarios of the four studies can be found in the Web Appendix. The scenarios have been carefully designed and pretested on a similar group of respondents. The detailed implementation and manipulation checks are discussed in the upcoming sections.

The dependent variable in all four studies is the amount of compensation consumers expect after the failure situation as a percentage of the original value of the service. In addition, in Study 1, the value of the service was indicated, and respondents were asked about the exact value of the expected compensation.

In the first three scenarios, we used different service contexts to manipulate the different service types, failure types, and recovery efforts, and different settings to assess the effect of the independent variables. While the heterogeneity of services can help generalisability of results across industries, it can also make it difficult to compare results. To avoid this, we conducted a fourth study in which we controlled this heterogeneity. In the fourth study, we used a similar context to that in the first scenario (restaurants) to check the robustness of our results and to add a double confirmation of our results from studies 1 and 3. All studies were conducted in Hungary. Sample characteristics for each study are presented in Table 1, while the summary of the experimental design is presented in Table 2.

3.1 Study 1—impact of displayed emotions and compensation framing

3.1.1 Objectives and design of study 1

Displayed emotions, empathy, and the attentiveness of the service provider are important elements of interactional justice (Lajante and Remisch 2023). Results sug-

Table 1 Sample description of the studies

Study	Sample size	Administration	Demographic profile
Study 1	163	adults, online survey	68% men, 32% women, mean value of age = 33.4 years
Study 2	310	students, online survey,	41% males, 59% females age = 21.4 years
Study 3	165	adults, online survey	60% males, 40% females, mean value of age = 33.8 years
Study 4	192	adults, online survey	37% males, 63% females, mean value of age = 32.7 years

Table 2 Summary of the design and the related hypotheses of the studies

Study	Context	IVs	IV levels	DV	Design	Related hypotheses
Study 1	Restaurant	• Displayed emotion • Framing of the amount of compensation	• Positive, neutral, negative • % vs exact amount	Expected compensation	3 × 2	H1, H2
Study 2	Hairdresser Education Dry cleaning Bookkeeping	• Tangibility of the service, • Direct recipient of the service • Type of failure	• Tangible vs intangible • Directed to people vs directed to things • Outcome vs process failure	Expected compensation	2 × 2x2	H3, H4, H5
Study 3	Taxi	• Failure severity • Locus of responsibility	• High, Moderate, Low • Taxi driver's fault, external factor	Expected compensation	3 × 2	H6, H7
Study 4	Restaurant	• Displayed emotion • Failure severity	• Positive, negative • High, Low	Expected compensation	2 × 2	H1, H6

gest that higher levels of interactional justice can compensate for lower levels of distributive justice, and that service provider rudeness cannot be compensated for even by a full exchange (Blodgett et al. 1997). Interactional justice is often manipulated on two levels, with an inattentive, rude service provider without an apology versus an emotionally attached service provider with a sincere apology (Sparks and McColl-Kennedy 2001). There are instances where frontline workers exhibit no discernible emotion-neither positive nor negative-responding instead in a correct but emotionally detached manner. The literature does not clearly establish whether such neutral behavior in the context of service failures is perceived by consumers as acceptable or as a negative outcome. To address this gap, we manipulated displayed emotions at three levels-negative, neutral, and positive-and investigated their impact on consumers' expected compensation levels (H1).

In Study 1, we included compensation framing as an independent variable and manipulated it at two levels (Lii and Lee 2012). In the first manipulation, respondents

had to indicate the expected compensation in percentage terms), while in the second manipulation, the scenario indicated the exact amount (in local currency) of the service and respondents were asked to indicate the exact dollar term (in local currency) of the expected compensation (H2).

The context was a dinner experience, and the type of failure was a process with slow service. Due to its frequency of occurrence, this context is commonly used in service recovery research (Bambauer-Sachse and Rabeson 2015). We selected a process failure, as interactional justice has a stronger effect on process-type failures (Blodgett et al. 1997).

The sample in Study 1 consisted of 163 adult respondents recruited from an online panel, with 32% identifying as women and 68% as men, and an average age of 33.4 years. Respondents were randomly assigned to one of six scenarios and were asked to complete an online survey. The only exclusion criterion applied during the selection process was to filter out inattentive respondents.

We checked the manipulations by asking respondents to agree with the following statements (1 – strongly disagree; 5 – strongly agree): The service provider was rude. The service provider displayed negative emotions.

To measure the compensation framing manipulation, we asked respondents to select: The service provider offered a percentage discount or a cash discount. The manipulations worked as intended. Significantly more respondents indicated that the service provider was rude (Mnegative = 4.23) and displayed negative emotions (Mnegative = 3.52) in the negative-emotion scenarios compared to the non-emotional (Mnon = 2.45, Mnon = 2.27) and the positive-emotion group (Mpositive = 1.43, Mpositive = 1.46). Significantly more respondents agreed that the refund was offered in percentage terms in cash in the percentage group (Mpositive = 4.21) compared to the cash group. The framing manipulation worked as well; significantly more respondents in the percentage group selected the percentage term (63%) than in the other group ($\chi 2 = 8.9(1)$; $p < 0{,}01$) and significantly more respondents selected cash terms in the exact amount group (81%) than in the percentage form group ($\chi 2 = 61.5(1)$; $p < 0{,}001$). Respondents perceived our scenarios as realistic (4.04 to 4.42 on a five-point Likert scale).

3.1.2 Results of study 1

A 2 × 3 analysis of variance (ANOVA) was used to identify significant effects. To make the results comparable, the exact amount was expressed as a percentage and used as a dependent variable. The main effect of emotion was significant ($F(2,157) = 5.30$; $p < 0.01$), supporting H1, while neither the main effect of compensation framing (H2; $F(1,157) = 1.83$; NS), nor the interaction between emotion and compensation framing was significant ($F(1,157) = 1.38$; NS). We tested the results with a post hoc Tuckey test. The Tukey test (see Table 5 in the Appendix) revealed that respondents expected similar amounts of compensation in the positive and neutral emotion display situations (Mpositive = 29.1, Mnon = 31.2, $p_{\text{positive-non}} > 0.1$), while the negative displayed emotion situation resulted in significantly higher expectations (Mnegative = 42.9; $p_{\text{positive-negative}} < 0.01$, $p_{\text{negative-non}} < 0.05$). Although the interaction for the whole model is not significant, the effect of compensation framing becomes significant only in

the case of negative emotions (Mexact = 36.3 (in percentage), Mpercentage = 50.4; $p < 0{,}05$) (Fig. 2, see Table 3 in the Appendix).

3.1.3 Discussion of study 1

In Study 1, we demonstrated the effect of displayed emotions on the compensation consumers expect after a service failure. By manipulating the displayed emotion on three levels, we could distinguish the seriousness of the hurt of the interactional justice dimension. Our findings suggest that consumers do not make a distinction between positive and neutral emotions in terms of expected compensation. Contrary to previous findings, this result does not support the notion that purely emotional behavior would compensate consumers for a service provider's error, even in the case of a process failure. This is only true if we compare positively expressed emotions with explicitly expressed negative emotions. In the latter case, customers indeed feel that interactional fairness has been violated to such an extent that they require higher compensation to obtain justice. While the main effect of framing was not significant, analyzing the interaction effect offers deeper insights into the reason.

While the effect of compensation framing is not significantly different for the positive and neutral emotional attachment situations, it is significant for negative emotions. The results show that when negative emotions are expressed, customers expect a significantly higher amount of compensation in dollar terms than in percentage

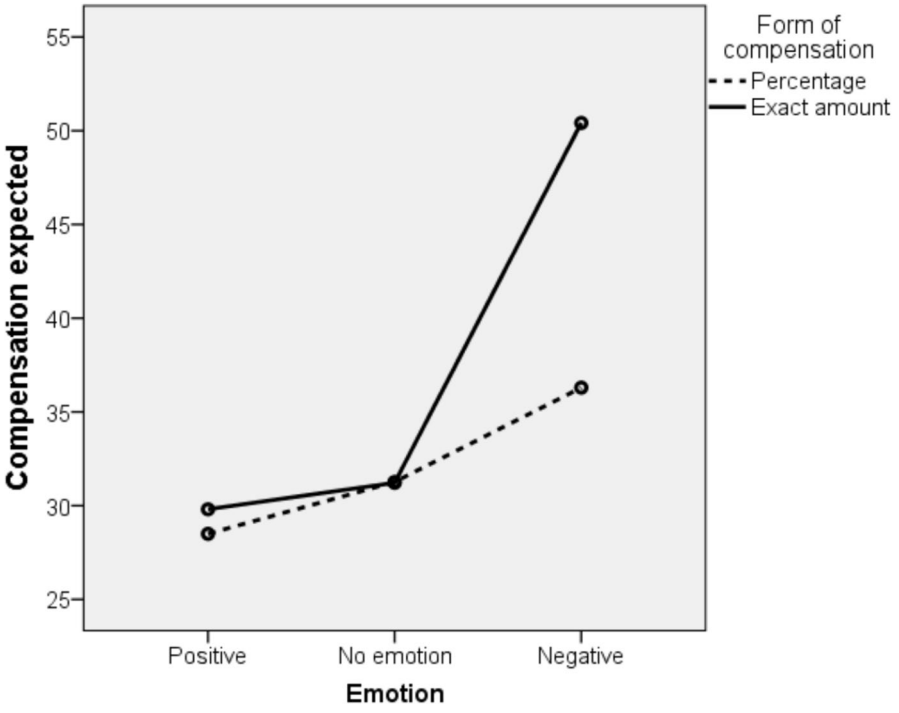

Fig. 2 Interaction between displayed emotion and compensation framing

terms. This suggests that when there is a serious threat to the justice of recovery (i.e., interactional justice), the amount of expected compensation may be unrealistically high when expressed in dollar terms as compared to a percentage. The absence of a significant main effect may be attributable to the complex interplay between compensation framing and consumers' expectations regarding the amount of expected compensation. It is possible that the effectiveness of amount versus percentage framing depends on specific conditions, as prior research has produced contradictory findings concerning which framing yields more favorable consumer responses (Gonzalez et al., 2016).

In addition to the interaction effect, there can be other contextual and cultural differences in fairness norms and compensation expectations. For instance, cross-cultural variation in equity norms and differing levels of numeracy could further moderate how consumers interpret framed compensation amounts, leading to variability across contexts. Identifying these conditions requires further empirical investigation.

3.2 Study 2—impact of service type and failure type

3.2.1 Objectives and design of study 2

Study 2 had two objectives: first, to demonstrate the effect of different service types on the expected compensation (H3 and H4), and second, to assess the effect of failure type (H5). We used a 2 × 2x2 between-subjects experimental design and developed eight scenarios, where the nature of the service act (tangible/intangible), the direct recipient of the service (people/things), and the types of service failure (process/outcome) were the independent variables.

When developing the scenarios, we represented the combinations of the service types with specific services. Based on preliminary interviews, we defined hairdressing (tangible and directed at people), education (intangible and directed at people), dry cleaning (tangible and directed at things), and bookkeeping (intangible and directed at things). In each scenario, an unexpected 40-min wait indicated process failure (Hess et al. 2003; Bonifield and Cole 2008; Roschk and Kaiser 2013), while outcome failure was represented by an error in the core service (Kelley and Davis 1994) by a shorter haircut, an unproductive class, stained clothes, and incorrectly filled out paperwork.

The dependent variable was the amount of the expected monetary compensation. The respondents were requested to specify the expected amount of compensation as a percentage, with 100% representing the original price of the service. To ensure that the effect was solely due to the type of service and the type of failure, and not the recovery effort, we fixed the level of interactional and procedural justice by providing a quick and polite response to consumer complaints in each scenario (Web Appendix).

Perceived realism was measured on a five-point Likert scale using the statement: I think the situations described in the scenario are realistic. Respondents perceived our scenarios as realistic (4.22 to 4.44). Manipulation checks were performed to ensure that experimental treatments were perceived differently for the different manipulations. After reading the scenarios, participants were asked to answer the following

questions. To measure the direction of service: To whom do you think the service was directed? (1 – a thing; 2 – myself). To measure manipulation of tangibility: How would you rate the tangibility of this service? (1 – very tangible; 5 – very intangible). To measure the type of failure manipulation: How would you rate the waiting time? (1 – I didn't have to wait at all; 5 –I had to wait a long time). Outcome failure manipulation was measured on a five-point Likert scale, with respondents rating their agreement with the statement: The outcome of the service was appropriate.

The sample in Study 2 was composed of 310 students from a university subject pool (59% women, 41% men). Respondents were randomly assigned to one of the eight scenarios and asked to fill out an online survey. There were no exclusion criteria for selecting respondents, except for respondents who were inattentive.

The manipulations worked as intended. Respondents reported that the service was directed at people in the hairdressing and math class scenarios (93%) and directed at things in the bookkeeping and dry-cleaning scenario (75%), ($\chi 2 = 102.6$ $p < 0{,}001$). They rated the hairdressing and dry-cleaning scenarios as more tangible than the education and bookkeeping scenarios (Mtangible = 4.74, Mintangible = 1.44, $p < 0.001$). Subjects viewed the outcome of the service as much less appropriate in the outcome failure situation (Moutcome = 2.04, Mprocess = 4.4, $p < 0.001$) and perceived the waiting time as much longer in the process failure situation than in the outcome failure situation (Moutcome = 2.00, Mprocess = 4.22 =, $p < 0.001$).

3.2.2 Results of study 2

A 2 × 2x2 ANOVA for expected compensation revealed the main effects of service tangibility ($M_{intangible} = 42.9$, $M_{tangible} = 55.8$; F (1, 302) = 13.13; $p < 0{,}001$) and the main effects of failure type ($M_{outcome} = 61.9$, $M_{process} = 36.8$; F (1, 302) = 34.20; $p < 0{,}001$) supporting H3 and H5. The direction of the service has no impact on the expected compensation ($M_{things} = 51.7$, $M_{people} = 46.5$; NS), thus H4 is rejected.

Regarding the interaction of the manipulations, the type of failure has a significant interaction with the two types of service. As Fig. 3 shows when customers experience an outcome failure, tangibility increases the amount of compensation they expect (F (1, 302) = 12.63, $p < 0{,}001$; $M_{outcome,\ tangible} = 77.1$; $M_{outcome,intangible} = 47.3$; $p < 0{,}001$), while in the case of a process failure the difference is not significant ($M_{process,\ tangible} = 36.8$; $M_{process,\ intangible} = 36.9$; NS). Results of the mean values and ANOVA analyses are displayed in see Table 3 in the Appendix and see Table 4 in the Appendix.

We also found an interaction between service direction and failure type (see Fig. 4; F (1,302) = 6.56; $p < 0.05$). When customers are the direct recipients of the service, they expect more compensation for outcome failures than for process failures ($M_{process,\ people} = 29.4$; $M_{outcome,\ people} = 65.0$; $p < 0{,}001$). This difference decreases in the case of services directed to things when there is no significant difference between the expected amount of compensation, whether it is a process or outcome failure. ($M_{process,\ things} = 45.4$ $M_{outcome,\ things} = 58.4$; NS).

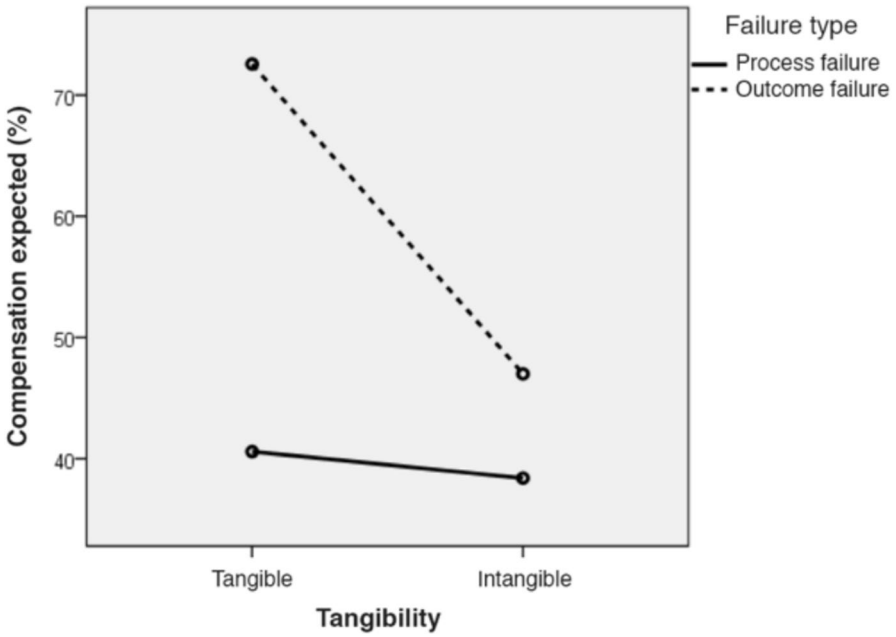

Fig. 3 Compensation expected by consumers in the context of tangibility and failure type

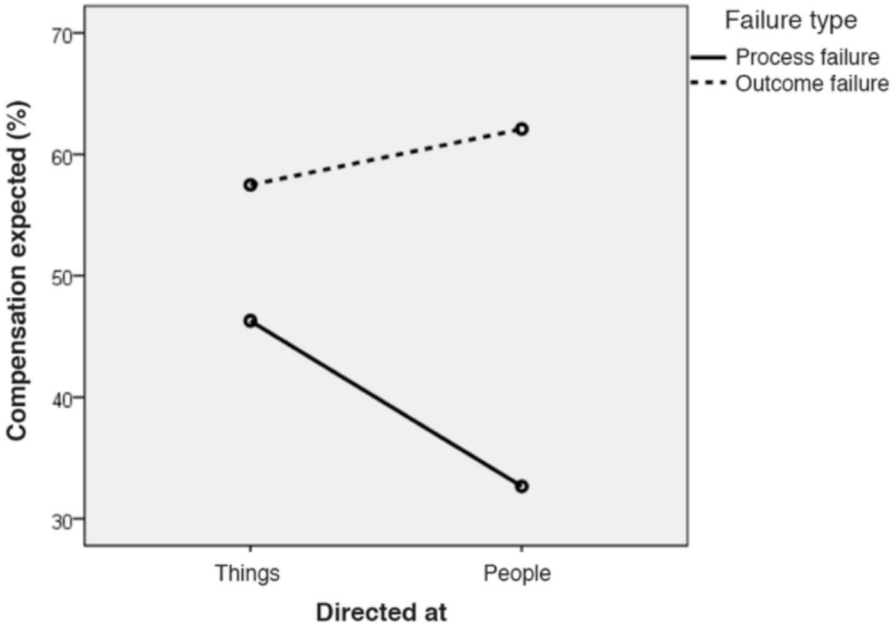

Fig. 4 Compensation expected by consumers in the context of the recipient of the service and failure type

3.2.3 Discussion of study 2

In line with our hypotheses H3 and H5, consumers expect a higher amount of compensation in the case of services including tangible actions and outcome failures. As our hypothesis regarding the main effect of the direction of services (H4) was not supported, we assumed that the type of service failure may offer a plausible explanation. Specifically, in the context of bodily services, outcome failures (e.g. bad haircut) entail more enduring consequences than process failures (e.g., waiting), as they directly impact consumers' well-being (e.g., physical appearance).

Figure 4 shows that process failures in the case of services directed at things require more compensation than process failures in services directed at people. In the case of outcome failure, however, the opposite is true. An important finding is that consumers are more sensitive to waiting if they expect no waiting at all. In services focused on products, customers typically take the item and leave immediately. However, when they are the direct recipients of a service, they anticipate some waiting time, as they need to be physically present until the service is completed. They seem to be more tolerant of process failures. In the case of outcome failures, consumers expect more compensation when the service is directed at themselves (hairdressing, education) than when it is directed at things (dry-cleaning, bookkeeping). It seems that the loss of social resources (Smith et al.1999) is more important for services directed at people, as this may affect self-esteem, self-actualization, and increase perceived risk for future service encounters.

Apart from the interaction effect, the lack of a consistent effect for H4 could be due to boundary conditions related to the relational and temporal context of the service exchange. In ongoing or relationship-based services, consumers might assess fairness based on long-term reciprocity rather than a single transactional event, reducing the differences between person- and possession-focused services. Additionally, fairness judgments in such settings are often cognitively complex, weighing emotional investment, trust, and prior experiences, which can lessen the prominence of service type when forming expectations about compensation.

3.3 Study 3—impact of failure magnitude and locus of responsibility

3.3.1 Objectives and design of study 3

As the magnitude of failure is an important factor in service recovery (Bambauer-Sachse and Rabeson 2015; Sparks and Fredline 2007), we manipulated the severity of failure on three levels: low, medium, and high (H6). Besides failure magnitude, attributions of responsibility (H7) may play a significant role in determining the amount of compensation (Grewal 2008). In Study 3, we incorporated the locus of responsibility as a two-level factor, distinguishing between failures attributable to the service provider and those caused by external factors. We developed a 3×2 experimental design in which a new service context, taxi services, was selected for its suitability in evaluating the locus of responsibility and severity of service failures. Participants were asked to imagine taking a taxi to the airport, a scenario in which traffic jams often cause significant delays. The severity of the failure was manipu-

lated across three levels: (1) the taxi was late but they still caught their flight (low severity), (2) they missed their flight but were rescheduled free of charge, resulting in a loss of time but no financial cost (medium severity), and (3) they missed their flight and had to pay to be rescheduled (high severity). The locus of responsibility was also manipulated: in the taxi driver fault condition, the driver failed to take alternative routes to avoid traffic, whereas in the external condition, the driver attempted alternative routes but was impeded by city-wide congestion due to an event.

The sample in Study 3 consisted of 165 adult respondents recruited from an online panel (40% female, 60% men; average age of 33.8 years). Respondents were randomly assigned to one of six scenarios and were asked to complete an online survey. The only exclusion criterion applied during the selection process was to filter out inattentive respondents.

To check manipulation, we asked respondents to agree with the following statements (1 – strongly disagree; 5 – strongly agree): In this situation, the failure has serious consequences. To check the locus of responsibility manipulation: The service provider made every effort to perform the service well.

The results of the manipulation checks showed that there were significant differences between the different groups. In the high severity group, the severity score was higher (Mhigh severity = 4.46) compared to the medium severity group (Mmid severity = 3.34), while the lowest score was achieved in the low-severity group (Mlow severity = 2.15; $p < 0.001$). In addition, the locus of responsibility manipulation worked as intended ($M_{\text{provider's fault}} = 2.04$, Mexternal fault = 3.73; $p < 0.001$). Respondents perceived our scenarios as realistic (4.00 to 4.35 on a five-point Likert scale).

3.3.2 Results of study 3

A 3 × 2 analysis of variance (ANOVA) showed a significant main effect for both failure severity ($F(2,159) = 26.83$; $p < 0.001$) and locus of responsibility ($F(1,159) = 16.26$; $p < 0.001$), supporting H6 and H7. As we predicted, the more severe a service failure, the higher the amount of compensation expected (Mhigh severity = 74.17, Mmid severity = 48.02, Mlow severity = 31.96; $p < 0.001$). Similarly, if the failure was caused by an external factor, expected compensation is significantly lower than in the case of the service provider's fault ($M_{\text{provider's fault}} = 62.64$, Mexternal fault = 42.31; $p < 0.001$). Our results revealed a significant interaction between failure severity and locus of responsibility. To investigate the mean differences, a post hoc Tukey analysis was conducted both for the provider's fault condition and the external fault condition (see Table 6 in the Appendix). When participants encountered the situation with the external failure condition, those who faced a low-severity failure did not expect significantly less compensation (Mlow severity = 33.79, Mmid severity = 32.69; NS) than those who faced a mid-severity failure. In contrast, those who faced a high-severity situation expected a higher amount than the other two groups (Mhigh severity = 56.29; $p_{\text{low-high}} < 0.01$; $p_{\text{mid-high}} < 0.01$). This does not hold when the service provider is to blame for the failure situation. In this case, all three levels of expected compensation differ significantly (Mlow severity = 30.00, Mmid severity = 62.78, Mhigh severity = 107.11; $p_{\text{low-mid}} < 0.05$; $p_{\text{mid-high}} < 0.01$; $p_{\text{low-high}} < 0.001$). In addition, the difference in the amount of expected compensation increases with the level of

severity (Fig. 5). Results of the mean values and ANOVA analyses are displayed in see Table 3 in the Appendix and see Table 4 in the Appendix.

3.3.3 Discussion of study 3

Study 3 extends the research on failure severity and attribution theory. Consistent with our hypotheses and prior research (Roggeveen et al. 2012), the more severe the failure, the higher the perception of loss, and based on justice theory, the expected amount of monetary compensation will be higher. The effect of locus of responsibility is significant but somewhat weaker. When consumers know that the service provider is responsible for the failure situation, they expect more monetary compensation, whereas when they perceive that environmental factors/circumstances made it impossible to provide a correct service, they are more forgiving and expect much less compensation. The interaction between the two manipulations demonstrates that locus of responsibility has such a strong effect that even in the medium-severity case, consumers do not expect significantly more money than in the low-severity case. However, when the failure results in financial loss, consumers increase their compensation claims, although to a lesser extent than when the failure is attributed to the service provider's fault.

When the failure is attributed to the service provider, the relationship between claim size and failure severity appears linear; higher severity elicits higher compensation expectations. In high-severity cases, consumers may even demand compensation exceeding the cost of the service, seeking redress for the damage caused. Conversely,

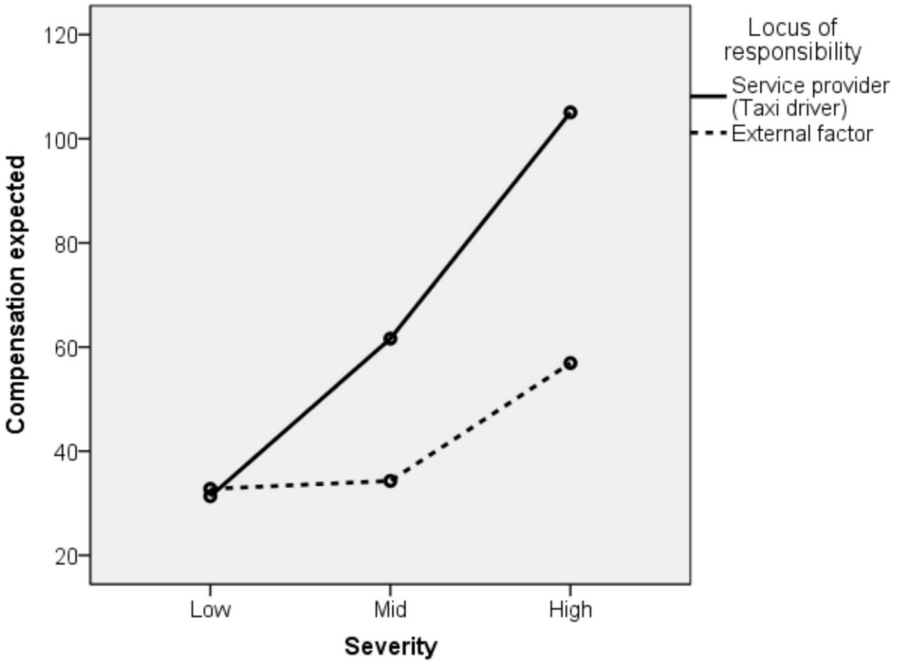

Fig. 5 Interaction between failure severity and locus of responsibility

when the failure is perceived as beyond the provider's control, the increase in compensation expectations is significantly smaller.

3.4 Study 4—impact of displayed emotions and failure severity

3.4.1 Objectives and design of study 4

To assess the robustness of our results, in Study 4, we replicated some elements from Study 1 and Study 3. We used a similar scenario as in Study 1, but we examined the severity of the error rather than the form of compensation. With this design, we hope to replicate the results from Study 1 and extend the validity of Study 3 in different service contexts. In Study 3, we examined how displayed emotions and the severity of a failure influence the expected compensation in a restaurant context. Based on previous findings, we categorized emotions into two types: negative and positive, and we classified failure severity into low and high magnitudes. This led to a 2×2 between-subjects design. Participants were asked to imagine a scenario in which they experienced either a minor issue, such as a very long wait (low severity), or a more serious situation involving a very long wait, not getting the table they had booked in advance, and dealing with a noisy room (high severity). We manipulated the displayed emotions of the waiter, portraying him as either a polite and empathetic individual offering a sincere apology or as a negative and arrogant figure lacking empathy and any form of apology. The selection of the respondents was similar to the previous studies using an online panel, resulting in 192 adult respondents (37% males and 63% females) for the four scenarios.

To check manipulations, we used a similar measure that was used in Study 1 (The service provider displayed negative emotions; Likert scale, 1–7) and in Study 3 (The failure has serious consequences; Likert scale, 1–7). The manipulations worked as intended. Significantly more respondents indicated that the service provider displayed negative emotions (Mnegative = 5.73) in the negative-emotion scenarios compared to the positive-emotion group (Mpositive = 1.96; $p < 0.001$). The result of the manipulation check of severity was also highly significant. In the high severity group, the severity score was higher ($M_{high\ severity} = 5.53$) compared to the low-severity group (M*low* severity = 3.61; $p < 0.001$).

3.4.2 Results of study 4

A 2×2 analysis of variance (ANOVA) was used to identify significant effects. Similarly to the previous three studies, the amount of expected compensation was measured in a percentage term and used as a dependent variable. The main effect of emotion was significant ($F(1,188) = 5.82$; $p < 0.05$), supporting H1, just as the main effect of failure severity (H6; $F(1,188) = 63.42$; $p < 0.001$). Respondents expected lower amounts of compensation in the positive emotion situations (Mpositive = 30.68), while the negative displayed emotion situation resulted in significantly higher expectations (Mnegative = 38.36; $p_{positive\text{-}negative} < 0.01$). Similarly to the results of Study 3, a more severe service failure leads to higher expected compensation. (Mhigh severity = 48.3, Mlow

severity = 21.28; $p < 0.001$). The interaction between emotion and severity was insignificant ($F(1,188) = 0.00$; NS) (Fig. 6, see Table 4 in the Appendix).

3.4.3 Discussion of study 4

Study 4 demonstrated that our results are robust and relevant across different services. From the perspective of justice theory, it has been demonstrated that customers tend to perceive greater compensation as appropriate when the severity of a service failure increases. Moreover, this expectation is amplified when the service provider breaches social norms by exhibiting rude or unempathetic behavior. Furthermore, the average expectation for compensation in the two restaurant situations (Study 1 and Study 4) is quite similar, with values of $M_{Study1} = 34.2$ and $M_{Study4} = 34.6$. These findings provide strong support not only for our hypotheses regarding lower or higher expected compensation but also for our estimates of the level of compensation expected.

4 Implications

4.1 Theoretical contributions

This study makes several important theoretical contributions to justice theory by advancing our understanding of distributive justice in service recovery, particularly regarding the amount of monetary compensation required following service failures. By integrating justice theory, attribution theory, emotional display research, and social resource theory, our findings both extend and refine existing frameworks in service recovery literature.

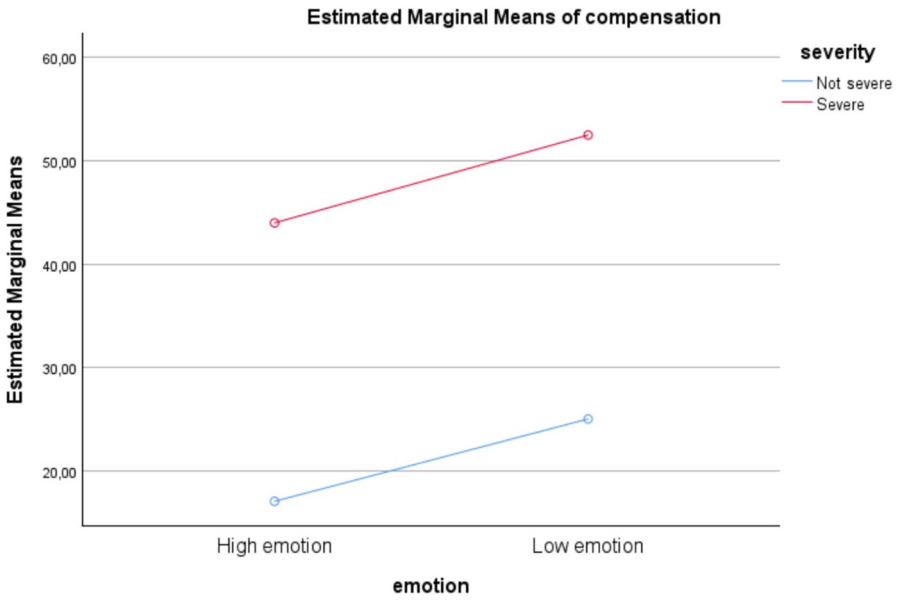

Fig. 6 Interaction between failure severity and emotion

While previous studies have established the significance of distributive justice in service recovery (e.g., Orsingher et al. 2010; Gelbrich and Roschk 2011), how different factors affect the appropriate amount of compensation has remained underexplored. This study demonstrates that customer expectations for compensation are not consistent but highly context-dependent, shaped by characteristics of the recovery effort, the type of service, and the nature of the failure. The contingency approach to distributive justice has already been proposed in a conceptual work by Hoffman and Kelley (2000) but has not yet been turned into an empirical study. This structured approach enables the service recovery literature to move beyond generalized prescriptions and toward context-specific insights. In particular, our findings challenge the traditional view that distributive justice alone can fully restore customer satisfaction, highlighting the conditional effects of process vs. outcome failures and locus of responsibility. Our results indicate that outcome failures require higher compensation than process failures, as demonstrated in Study 2 (outcome failure: 60%, process failure: 39%, expressed as a percentage of the service price). Locus of responsibility also proved to be a relevant situational factor. When consumers perceive that the service provider is not to blame for the failure, they are more forgiving than if it is clearly the service provider's fault. This result is consistent with the notion that compensation enhances satisfaction and repurchase intentions when the company is responsible for the failure (Grewal et al. 2008).

An important theoretical insight from our work concerns the role of employee-displayed emotions. The experimental results show that explicitly negative displayed emotions significantly increase the amount of expected monetary compensation. This effect is particularly strong when compensation is offered in dollar terms. While this result is consistent with past studies (Blodgett et al. 1997; McColl-Kennedy and Sparks 2003), a contribution to the existing knowledge is that this effect is nonexistent in the case of neutral emotions. Respondents expect a similar amount of compensation for an emotionally bound recovery effort as for an emotionally neutral This challenges the assumption that apologies or friendliness can serve as effective substitutes for monetary redress.

The incorporation of framing theory (Kahneman and Tversky 1984) into the service recovery domain marks a novel theoretical contribution. While framing effects have been extensively studied in pricing literature, they have received little attention in the context of service failure compensation. We show that framing compensation in percentage vs. dollar terms can yield different expectations when paired with negative emotional cues. This interactional effect introduces a new dimension to how compensation should be communicated and evaluated, linking cognitive biases with fairness perceptions.

Drawing on Lovelock's (1983) service classification and Foa and Foa's (2012) social resource theory, we empirically validate the relevance of service tangibility and directionality in shaping compensation expectations. Our findings underscore that tangible services elicit higher compensation demands, particularly in outcome failure situations. Although the hypothesis regarding the direction of services was not supported, further analysis of the interaction effects yielded additional insights. Specifically, the findings indicate that, in the context of process failures, services directed at objects elicit higher compensation expectations than those directed at individuals. Conversely, in the case of outcome failures, consumers demand greater monetary

compensation when the service is directed at themselves (e.g., hairdressing, education) as opposed to services directed at objects (e.g., dry cleaning, bookkeeping).

Finally, this study deepens the application of attribution theory in service recovery by demonstrating that compensation expectations escalate significantly when the failure is attributed to the service provider, especially in the case of severe failures. While attribution theory has typically focused on satisfaction and repurchase intentions (Grewal et al. 2008), our research adds a new dimension: attribution affects not only emotional and cognitive responses but also the quantifiable amount of redress expected.

4.2 Managerial implications

This study presents important insights that can influence the design of effective service recovery processes. While service providers generally recognize the importance of offering compensation following service failures, they often face uncertainty regarding the appropriate amount to offer. Both undercompensation and overcompensation can be inefficient, underscoring the necessity of accurately determining compensation levels.

The effectiveness of service recovery efforts is contingent upon various situational factors, which shape customers' compensation expectations and perceptions of fairness. In terms of recovery efforts, the emotional display of frontline employees plays a vital role. Negative emotional displays during complaint-handling amplify compensation expectations, whereas neutral and positive displays are perceived similarly. Therefore, firms should invest in training programs that encourage a neutral-to-positive emotional tone during customer interactions. Additionally, firms should monitor service encounters for emotional cues that may escalate compensation demands. The framing of compensation significantly influences perceptions of fairness. Monetary compensation framed in dollar amounts tends to increase expectations more than when expressed in percentages, particularly under emotional distress. Hence, when interactional justice is weak, percentage-based framing may be more effective. To manage these dynamics, firms should develop communication scripts and strategies that frame compensation in ways that enhance the perception of fairness and balance customer expectations.

Another situational factor is the type of service. Tangible services, such as dry cleaning or hairdressing, tend to elicit higher compensation expectations compared to intangible services like bookkeeping. This indicates that organizations offering tangible services must anticipate elevated customer demands and ensure that sufficient recovery budgets and policies are in place. While the direction of the service–whether it targets people or possessions–does not independently affect compensation expectations, it interacts with the type of service failure. Specifically, in the case of outcome failures, customers expect greater compensation for people-directed services (e.g., healthcare, haircuts), which are likely due to the higher personal relevance.

The type and severity of failure also critically influence compensation expectations. Outcome failures, such as service delivery errors, result in significantly higher demands for redress than process-related failures. Consequently, firms should emphasize the prevention of failures in core service outcomes and establish compensation tiers that reflect this distinction, potentially offering reimbursements ranging from 100 to 120%. Moreover, the severity of the failure serves as a determinant of

the expected compensation amount. Firms are advised to classify service failures by severity, offering symbolic gestures (e.g., apologies) for low-severity incidents and more substantive remedies for high-severity cases. The locus of responsibility further moderates customer expectations. When the service provider is perceived as being at fault, the influence of failure severity on compensation expectations intensifies. In such scenarios, it is essential that employees are trained to acknowledge responsibility, refrain from shifting the blame, and deliver proactive compensation measures to mitigate dissatisfaction and curtail negative word-of-mouth.

Our results can be particularly noteworthy for smaller service providers. While large service companies usually have a formal service recovery policy, smaller, often one-man businesses place less emphasis on service recovery. For these smaller firms, it is essential that compensation in complaint handling is not the result of an ad hoc decision but is based on a deliberate and thoughtful process. Applying the findings of this study can support these businesses in improving their complaint-handling practices.

Our findings indicate that managers should tailor recovery strategies based on both the level of service involvement and the nature of the service target (bodily vs. possession-focused). For high-involvement, bodily services, such as education, medical, or personal care, like hairdressing or fitness training, failures tend to be deeply personal and outcome-driven. Customers in these settings see the loss as highly relevant to themselves and expect more substantial compensation to restore fairness. In such cases, firms should be ready to offer full (100%) or even higher-value refunds, especially when failures affect customer well-being or self-image. Combining monetary compensation with personalized, symbolic recovery actions—for example, complimentary follow-up services, customized treatments, or personal consultations—can enhance signals of care and commitment to justice. For low-involvement or possession-focused services, such as dry cleaning, transportation, or casual dining, the perceived loss is more functional and easier to correct. Here, quick and convenient recovery methods are key indicators of fairness. Managers should prioritize offering fast refunds, service credits, or discount coupons to minimize disruptions. Clear communication and efficient resolution often compensate for the lower monetary value of the redress, helping to maintain trust without large costs.

Highlighting hospitality industries, we have found that firms should prevent the escalation of negative emotions to avoid excessive compensation requests. In addition to refunds, discounts or vouchers could be provided, which encourage repeat visits and represent an additional opportunity for the service provider to achieve customer satisfaction. A service upgrade or small gifts could also help the consumer to stay neutral during service recovery (for example, by offering better seating or a table) customized to the individual guest's preferences and needs. As for transportation services, the typical failures are cancellations and delays. First, firms should do their best to prevent those failures by improving their operational efficiency. Once a severe failure occurs, a high amount of compensation (refunds, coupons, etc.) is hard to avoid. In addition, the way this compensation is provided influences negative word of mouth. Timeliness, proactivity as well as assistance in finding alternative solutions and clear communication could mitigate the negative consequences for consumers.

Finally, by incorporating customers into the recovery process and allowing them to choose the best solution, firms could deal with individual perceptions about the

various situational factors, such as perception of severity and the impact of emotional display.

4.3 Limitations and future research

The primary limitation of our research lies in the necessity to narrow the scope of factors examined in assessing the size of compensation. While numerous other intriguing factors could have been explored, our primary objective was to highlight for service providers the importance of identifying the key elements that influence compensation expectations specific to their services. In addition, our research methodology involves limitations with respect to ecological validity. While scenario-based designs allow for control, they often fail to capture the emotional and contextual richness of real service encounters.

Another limitation relates to the composition of the samples and the cultural setting. While some studies relied on responses from adult consumers, others used university students, who may not be representative of the general population. Students may differ from the general consumer population in terms of financial resources, consumption habits and expectations of service recovery. For example, younger respondents may have lower purchasing power and therefore different ideas of what constitutes 'adequate' compensation. Furthermore, all four studies were conducted in Hungary, where cultural norms around fairness and accountability may differ from those in other markets. Therefore, future research should replicate these findings with more diverse demographic groups and across cultural contexts to test the robustness and generalizability of the results.

Further research opportunities arise in relation to the effect of service type, as the selection of services may bias the results. Thus, it would be interesting to replicate this study using a similar typology but with different services. Although the service typology used in this study is valid in many cases and correctly distinguishes different types of services, further research could reinterpret Lovelock's service groups based on a distinction between online and offline delivery. For example, a banking service might provide a very different experience when it is delivered online (technology-based self-service) than when it is delivered in a traditional way. Thus, how a service is provided (online or offline) could affect perceived quality and customer experience and could influence customers' perception of failure. There could also be different effects depending on whether the act of complaint handling occurs online, over the phone, or offline (in person). It would also be worthwhile conducting further research on the types of failure. We have distinguished between process and outcome failure, but there may be additional aspects to this dimension, as it is sometimes difficult to decide which type to consider. Perhaps because of a wrong process (slow service), the outcome is at stake (cold meal) or as it was in our Study 2, the slow and careless taxi driver caused a missed flight.

In addition, other aspects would also be interesting to add; for example, the relationship with the service provider influences the expected compensation (Gelbrich and Roschk 2011), or the level of collaboration (Arsenovic et al. 2023) between frontline employees and customers can influence the impact and the expected amount of monetary compensation. The study of framing effects in relation to monetary compensation opens interesting avenues for research, especially when contextual factors

such as price levels or the size of the compensation are included. Further promising research directions would be combining service recovery research with emerging digital trends (Gregoire and Mattila 2021) such as artificial intelligence, big data, with the final objectives of providing actionable recommendations for managers.

Appendix

See Tables 3, 4, 5, and Table 6

Table 3 Mean values of the scenarios

		Study 1		
Emotion	Compensation frame		N	Mean (SD)
Positive	Percentage		30	28.5000 (24.43)
	Value		26	29.8077 (21.23)
Neutral	Percentage		30	31.2667 (21.20)
	Value		26	31.2179 (21.05)
Negative	Percentage		27	36.2963 (27.93)
	Value		24	50.4167 (28.22)
		Study 2		
Failure type	Tangibility	Direction	N	Mean (SD)
Process	Tangible	Things	41	44.04 (26.88)
		People	38	30.65 (22.35)
	Intangible	Things	40	46.40 (29.88)
		People	40	28.06 (17.79)
Outcome	Tangible	Things	38	80.87 (50.11)
		People	37	73.89 (37.62)
	Intangible	Things	40	37.8 (19.74)
		People	36	56.11 (31.54)
		Study 3		
Severity	Locus		N	Mean (SD)
Low	Service provider		29	30.00 (19.75)
	External factor		28	33.79 (25.92)
Mid	Service provider		27	62.78 (29.30)
	External factor		27	32.69 (20.99)
High	Service provider		21	107.11 (74.04)
	External factor		33	56.29 (34.31)
		Study 4		
Emotion	Severity		N	Mean (SD)
High	Not severe		46	17.09(17.08)
	Severe		47	44.00 (25.59)
Low	Not severe		51	25.06 (22.9)
	Severe		48	52.5 (27.46)

Dependent variable: amount of expected compensation in percentage of the price of the service

Table 4 Results of the ANOVA analyses

	df	F	p	η^2
Study 1				
Emotion	2	5.301	0.006	0.063
Framing	1	1.830	0.178	0.012
Emotion * Framing	2	1.377	0.255	0.017
Study 2				
Tangibility	1	13.128	0.000	0.061
Direction	1	1.500	0.222	0.007
Failure_type	1	34.204	0.000	0.145
Tangibility * Direction	1	1.491	0.224	0.007
Tangibility * Failure_type	1	12.629	0.000	0.059
Direction * Failure_type	1	6.560	0.011	0.031
Study 3				
Propensity to complain	1	9.715	0.002	0.059
Severity	2	26.458	0.000	0.256
Locus of responsibility	1	16.256	0.000	0.095
Severity * Locus	2	6.946	0.001	0.083
Study 4				
Emotion	1	5.824	0.017	0.030
Severity	1	63.421	0.000	0.252
Emotion* Severity	1	0.006	0.938	0.000

Table 5 Tukey analysis of Study 1

Displayed emotion						
(I) emotion	(J) emotion	Mean difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower bound	Upper bound
positive	no	−2.1369	4.55691	0.886	−12.9193	8.6454
	negative	−13.8340*	4.66726	0.010	−24.8775	−2.7906
no	positive	2.1369	4.55691	0.886	−8.6454	12.9193
	negative	−11.6971*	4.66726	0.035	−22.7406	−0.6537
negative	positive	13.8340*	4.66726	0.010	2.7906	24.8775
	no	11.6971*	4.66726	0.035	0.6537	22.7406

Dependent Variable: Expected compensation

*The mean difference is significant at the 0.05 level

Table 6 Tukey analysis of Study 3

(I) severity	(J) severity	Mean difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower bound	Upper bound
Taxi driver is to blame for the failure						
low	mid	-33.12*	11.452	0.014	−60.53	−5.72
	high	-77.45*	12.639	0.000	−107.70	−47.20
mid	low	33.12*	11.452	0.014	5.72	60.53
	high	-44.33*	12.823	0.003	−75.01	−13.64
high	low	77.45*	12.639	0.000	47.20	107.70
	mid	44.33*	12.823	0.003	13.64	75.01
External factor is to blame for the failure						
low	mid	1.56	7.614	0.977	−16.59	19.72
	high	-22.50*	7.157	0.006	−39.57	−5.43
mid	low	-1.56	7.614	0.977	−19.72	16.59
	high	-24.06*	7.230	0.004	−41.30	−6.82
high	low	22.50*	7.157	0.006	5.43	39.57
	mid	24.06*	7.230	0.004	6.82	41.30

Dependent Variable: Expected compensation

*The mean difference is significant at the 0.05 level

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Declarations

Conflict interest The authors have no competing interests to declare that are relevant to the content of this article.

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