The Impact of Process Recovery Communication on Customer Satisfaction, Repurchase Intentions, and Word-of-Mouth Intentions

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Abstract

Complaint management should not be restricted to a firm’s efforts to fix the problem and restore customer satisfaction after a service failure (i.e., customer recovery [CR]). Rather, firms should learn from customer complaints and improve their processes to prevent similar failures (i.e., process recovery [PR]). PR communication, or the feedback to customers that describes how an organization has executed complaint-based process improvements, thus may be critical. Four studies investigate the impact of PR communication on customer outcomes for customers (1) who experienced a failure, complained, and received satisfactory CR; (2) who experienced a failure, complained, and received unsatisfactory CR; (3) who experienced a failure but did not complain; and (4) who did not experience a failure. PR communication positively affects customers’ overall satisfaction, repurchase intentions, and word-of-mouth intentions through higher perceptions of the firm’s relationship investment and overall justice. In addition, such communication is most effective for the second and third types of customers; the effects for the first and fourth types are less pronounced. Managers who want to maximize the return on their complaint-handling efforts should communicate process recoveries to customers.

Keywords

service failure, service recovery, customer recovery, process recovery communication, satisfaction, repurchase intentions, word of mouth

The task of a customer service department is twofold. First, take actions to return dissatisfied customers to a state of satisfaction after a service failure, or customer recovery (CR; Johnston and Michel 2008). From a marketing perspective, such efforts take different forms, such as apologizing, showing empathy, or providing compensation or restitution (e.g., Andreassen 2000), which have varying influences on satisfaction, repurchase intentions, and word-of-mouth intentions (e.g., Gelbrich and Rosch 2011). Second, customer service departments must analyze complaint data to find the root cause of a complaint and make necessary process improvements to avoid future failures, which represents process recovery (PR; Johnston and Michel 2008). Both CR and PR are important service recovery domains¹ (Michel, Bowen, and Johnston 2009), yet empirical research into PR remains rather limited.

An operations management perspective on how firms can use complaints (e.g., Johnston and Clark 2008) or how PR can improve the firm’s financial performance (e.g., Johnston and Michel 2008) centers less on pleasing and saving customers and more on how to balance aggregate performance metrics by optimizing service processes (Michel, Bowen, and Johnston 2009).

We adopt a marketing perspective to study PR and empirically investigate a new variable, process recovery communication (PRC), which we define as the service provider’s communication about complaint-based process improvements to customers. Communicating about complaint-based process improvements could enhance customer outcomes. In this sense, our research bridges both service recovery research streams. Homburg and Fürst (2007) already have posited that complaint research would benefit from studies that link aspects of organizational complaint management to customer reactions; we propose PRC as a link between CR and PR.

Although prior research notes the potential of PRC for appealing to complaining customers (Boshoff 1999; Hart, Heskett, and Sasser 1990; Homburg and Fürst 2007; Van Ossel, Stremersch, and Gemmel 2003) and the real use of PRC in practice, no empirical research has examined its impact.

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Belgacom, Belgium’s largest telecom operator indicated though that 70% of its dissatisfied customers, who formerly gave it 1 or 2 points on a 5-point customer satisfaction survey, now assigned values of 4 or 5, simply because the provider had contacted these customers and explained how it had changed its processes, in response to past complaints (Trends 2010). Lovelock and Wirtz (2011) observe PRC (referred to as you told us, and we responded communica- tion) in some companies’ customer newsletters. As these examples show, PRC might reach four types of customers: (1) those who experienced a failure, complained to the company, and received satisfactory CR; (2) those who experienced a failure, complained to the company, and received unsatisfactory CR; (3) those who experienced a failure but did not complain; and (4) those who did not experience a failure. To date, it remains unclear how PRC effectiveness might differ among these types, whether complaining (first two types) or noncomplaining (latter two types) customers (Larivière and Van den Poel 2005).

To examine the role of PRC in service recovery, we conducted four studies. Study 1 focuses on complaining customers (Types 1 and 2) and tests the impact of PRC on overall satisfaction, repurchase intentions, and word-of-mouth intentions. Study 1 also investigates the impact of satisfactory versus unsatisfactory CR on the effectiveness of PRC. Researching PRC at different CR satisfaction levels is important, because few consumers ever perceive CR as satisfactory (Michel, Bowen, and Johnston 2009). Study 2 focuses on noncomplaining customers (Types 3 and 4) and examines the extent to which a failure experience influences PRC effectiveness. That is, most customers who experience a service failure never complain to the organization (Voorhees, Brady, and Horowitz 2006), but PRC could enable the firm to recover noncomplaining, dissatisfied customers who experienced a service failure (Type 3). Because the latter customers are unknown to the organization, it must send PRC to the entire customer base to reach them, meaning that the PRC also reaches customers who did not experience the service failure. Thus, an examination of both customer groups is warranted and relevant. Studies 1 and 2 use scenario-based experiments. Study 3 strengthens the external validity of our findings by examining the effectiveness of PRC in a real-world context with actual customers of a telecom operator. Finally, Study 4 is conducted to determine whether perceived relationship investment and perceived justice are theoretical mechanisms of PRC’s impact on customer outcomes.

We structure the remainder of this article as follows: we first provide the theoretical background and the research design. After a discussion of the results, we outline some limitations and implications for further research.

**Theoretical Background**

Customer complaints are driven by a dissatisfying experience with a service provider due to a service failure; therefore, companies should use complaint information to identify the root cause and improve their processes to avoid the occurrence of similar failures in the future (Johnston and Michel 2008). When companies improve their processes in response to customer complaints, they should inform complaining customers about those improvements, especially once the problem is solved (Boshoff 1999), when the improvements were initiated directly in response to the specific customers’ complaints (Homburg and Fürst 2007), or when the firm needs to “close the loop” by telling customers about improvements (Hart, Heskett, and Sasser 1990). However, none of these suggestions has been examined empirically.

Because PRC refers to communication about complaint-based process improvements to customers, it represents a form of feedback to customers. The benefits of feedback have been examined in several forms. For example, research exploring the effectiveness of explanations after service failures distinguishes two types: retrospective and prospective explanations (Gelbrich 2010). When customers receive a retrospective explanation, they know what caused a service failure, whereas prospective explanation informs them about the likelihood of future failures (Mattila 2006). Another form of feedback, known as credibility feedback, describes what the company is doing to prevent the problem (Davidow 2003).

Although PRC also is feedback, it differs from the other types in three main ways. First, whereas the preceding types give indications of the failure cause (retrospective), the likelihood that the failure will occur in the future (prospective), and intentions to improve processes (credibility), PRC informs customers about what the company actually has done to prevent recurring failure, due to its analysis of prior customer complaints. Second, the timing differs: Retrospective, prospective, and credibility feedback take place during CR, whereas PRC usually arrives some time after the complaining customer has received CR, because PR is time intensive (Johnston and Clark 2008). Third, PRC can be communicated to both complaining and noncomplaining customers, whereas feedback during CR is restricted to complainers only.

Hart, Heskett, and Sasser (1990) indicate that communicating complaint-based process improvements to customers might give customers a positive impression; Van Ossel, Stremersch, and Gemmel (2003) suggest it might increase customer loyalty and positive word of mouth. Overall, providing feedback can have significant impacts on customer outcomes, (Davidow 2000; Liao 2007). Therefore, we expect that PRC improves these three outcomes.

Theoretical foundations for the claim of enhanced customer outcomes following PRC appear in both perceived relationship investment theory and perceived justice theory. De Wulf, Odekerken-Schroder, and Iacobucci (2001) define perceived relationship investment as consumers’ perceptions of the extent to which an organization devotes time, resources, and effort to maintain or enhance its relationships with customers. Prior studies show that such investments in customer relationships induce favorable impressions and create a psychological bond that encourages customers to stay in the relationship (Smith and Barclay 1997). According to the reciprocity principle,
perceived relationship investment thus improves satisfaction and behavioral intentions (De Wulf, Odekerken-Schroder, and Iacobucci 2001; Liang and Wang 2007).

De Wulf, Odekerken-Schroder, and Iacobucci (2001) show that communicating with customers increases their perceptions of relationship investments. In a follow-up study, De Wulf, Odekerken-Schroder, and Van Kenhove (2003) also find that investments in service quality are strong predictors of perceived relationship investments. Informing customers about complaint-based process improvements (i.e., PRC) encompasses both these communication and service quality investments. Customers can infer from PRC that organizations have put time, resources, and effort into assuring the reliability of future service, so customers are less likely to experience failures (Johnston and Clark 2008). These communications thus imply investments in service quality on behalf of customers to prevent dissatisfaction. Therefore, PRC could positively affect perceived relationship investment, which enhances customer outcomes.

Perceived justice theory also states that customers want service providers to play fair: they pay for service, and they expect reliable service in return (Parasuraman, Berry, and Zeithaml 1991). Justice theory research applied in a service failure and recovery context usually distinguishes among distributive, interactional, and procedural justice (Smith, Bolton, and Wagner 1999), though it may be more appropriate to minimize the differences among justice types and focus more on overall perceived justice (DeWitt, Nguyen, and Marshall 2008). Because consumers’ overall justice drives their attitudes and behaviors (Liao 2007), we focus on overall justice as another theoretical mechanism to explain why PRC relates to customer outcomes.

Perceived justice results from a comparison of one’s own outcome-to-input ratio with the outcome-to-input ratio of another party (Walster, Berscheid, and Walster 1973). Customers who experience service failures experience losses (financial or nonfinancial) and perceive that the service provider’s outcome-to-input ratio is larger than their own outcome-to-input ratio. This results in inequity perceptions (Homburg, Furst, and Koschate 2010). We propose that PRC might help attenuate these inequity perceptions. The act of communicating with customers through PRC forms an input from the service provider. Moreover, PRC signals that the organization has invested in the reliability of its service delivery system, so customers are more likely to receive good service in the future (Parasuraman, Berry, and Zeithaml 1991). This again forms an input from the service provider. Thus, if a service provider increases his input by investing in the reliability of its service delivery system, and communicates these improvements, the service provider’s outcome-to-input ratio decreases and the relationship between the customer and the service provider becomes more equitable. This leads to an increased perception of justice. The resulting perception of justice may enhance customer outcomes (De Matos et al. 2009; Liao 2007). Based on the above, we hypothesize:

**Hypothesis 1:** Customers who receive PRC report more favorable (a) overall satisfaction, (b) repurchase intentions, and (c) word-of-mouth intentions, than customers who do not receive this communication.

### PRC Toward Complaining Customers (Types 1 and 2)

As noted in previous research, companies’ responses to customer complaints are not always satisfactory (Michel, Bowen, and Johnston 2009). Unsatisfactory CR might occur if the company provides no reaction at all, or if the employee dealing with the complaint displays maladaptive or unhelpful behavior (Liao 2007). The high prevalence of both forms means that we must examine the effectiveness of PRC across both levels of CR. The impact of PRC on customer outcomes should be stronger for customers who have received an unsatisfactory, rather than a satisfactory, CR. We offer several rationales, the first of which is based on perceived relationship investment. If customers experience a service failure, they might infer that an organization did not invest sufficient time, resources, or effort to provide a failure-free service. In other words, their perceived relationship investment diminishes. If they complain and receive unsatisfactory CR, perceived relationship investment further decreases, because the organization does not appear to have invested time, resources, or effort to restore customers’ satisfaction (De Wulf, Odekerken-Schroder, and Iacobucci 2001). If these customers receive PRC, they instead might start to perceive that the organization is investing in its customer relationships by improving poor processes, which should cause their perceived relationship investment to increase. In contrast, a satisfactory CR already should have restored the perceived relationship investment, because customers observe that the organization devoted time, resources, and effort to respond to their complaints. With already restored perceived relationship investment, PRC cannot further increase perceived relationship investment. Similarly, research on product harm crises shows that new positive information cannot improve an already positive evaluation, but positive information can improve negative evaluations (Dawar and Pillutla 2000). A PRC should have less impact after a satisfactory CR rather than an unsatisfactory CR. Customers’ perceived justice also comes into play. Customers who experience service failures experience (financial or nonfinancial) losses and perceive inequity (Homburg, Furst, and Koschate 2010). If they then complain and receive unsatisfactory CR, they suffer even more inequity (Liao 2007). However, if a customer then receives a positive message that an organization has invested in the reliability of its service, the signal from the service provider might improve the input–output ratio that determines equity perceptions. In contrast, if customers experience a service failure and receive a satisfactory CR, the inequity already should have been restored (Liao 2007). Because a restored sense of equity makes additional efforts superfluous (Smith, Bolton, and Wagner 1999), PRC should have less impact after a satisfactory rather than an unsatisfactory CR. Finally, in terms of customer outcomes, if the company handles the customer’s complaint well, satisfaction should already
be restored (Hocutt, Bowers, and Donovan 2006). Jones and Suh (2000) find that when customers’ overall satisfaction is already high, another positive encounter with a service provider does not have a great impact on customer outcomes. In contrast, if customers’ overall satisfaction is low, a positive encounter with a service provider strongly influences those outcomes. Similarly, research on product harm crises shows that new positive information cannot improve an already positive evaluation, but positive information can improve negative evaluations (Dawar and Pillutla 2000). A similar effect emerges in a study of CR: Following satisfactory CR, additional effort does not increase customers’ evaluations of a service provider, but after unsatisfactory CR, additional efforts by the service provider exert stronger impacts on customer outcomes (Ok, Back, and Shanklin 2007). Therefore, a PRC should have less impact after a satisfactory CR rather than an unsatisfactory CR.

In the context of our study, these findings imply that customers who receive unsatisfactory CR suffer poorer customer outcomes than customers who receive a satisfactory CR. If they then hear PRC, it should have a stronger impact on outcomes for customers who received an unsatisfactory CR. We predict:

**Hypothesis 2:** The effect of PRC on (a) overall satisfaction, (b) repurchase intentions, and (c) word-of-mouth intentions is stronger among complaining customers who receive an unsatisfactory CR compared with customers who receive a satisfactory CR.

**PRC Toward Noncomplaining Customers (Types 3 and 4)**

Prior research notes the potential of PRC to complaining customers; yet, the majority of customers never experience a service failure, and the majority of customers who experience a service failure decide not to complain to an organization (Voorhees, Brady, and Horowitz 2006). We propose that PRC toward these noncomplaining customers could also be beneficial.

The effectiveness of PRC also could differ according to whether an uncomplaining customer has experienced a particular service failure. When customers experience a particular service failure, it lowers outcomes compared with not experiencing the service failure (Hocutt, Bowers, and Donavan 2006). Because positive service encounters have a stronger impact on customers with initial negative (vs. positive) evaluations of the service provider (Jones and Suh 2000), we can expect that PRC has a stronger impact on outcomes for customers who experienced a service failure (and whose outcomes thus are low to start) than for customers who did not experience a service failure (who have higher outcomes to start). In addition, comparable to complaining customers, noncomplaining customers who experienced a service failure and receive PRC could get the impression that the organization has invested such time, resources, and effort to improve its processes, and has restored perceived inequity which should lead to improved customer outcomes. Customers who never experienced a service failure already perceive high relationship investment and experience equity. Thus, PRC might not further increase their perceived relationship investment or equity perceptions, because new information does not improve an already positive evaluation (Dawar and Pillutla 2000). We thus hypothesize:

**Hypothesis 3:** The effectiveness of a PRC on customer outcomes, including (a) overall satisfaction, (b) repurchase intentions, and (c) word-of-mouth intentions, is stronger for customers who have experienced the service failure than for customers who have not experienced the service failure.

**Studies**

We present four studies designed to test the hypotheses. Study 1 tests the main effect of PRC on overall satisfaction, repurchase intentions, and word-of-mouth intentions (Hypothesis 1). In addition, Study 1 tests whether PRC is more effective for complaining customers who receive an unsatisfactory recovery (Type 2) than for complaining customers who receive a satisfactory recovery (Type 1; Hypothesis 2). Study 2 focuses on noncomplainers and tests whether PRC is more effective for customers who experienced the service failure (Type 3) or those who did not (Type 4; Hypothesis 3). Study 3 provides external validity regarding the effectiveness of PRC for complaining and noncomplaining customers (Types 1–4) with a field study approach. Finally, Study 4 provides preliminary evidence for perceived relationship investment and perceived justice as theoretical mechanisms for the effects found in the first three studies.

**Study 1**

**Method**

Study 1 used a 3 (no PRC, PRC one to one, PRC one to many) × 2 (unsatisfactory vs. satisfactory CR) scenario-based, between-subjects experiment. We used a one-to-many communication (brochure, website) or one-to-one communication (e-mail, letter) as the contact mode for PRC sent to complaining customers (Types 1 and 2), as organizations might use both types of communication to communicate with complaining customers.

We conducted our experiment in three settings (bookstore, telecom operator, and food retailer), with different samples, different types of service failures, and different PR, to enhance the generalizability of our results. In the first two settings, undergraduate student samples evaluated service failures by a bookstore (n = 154; 39.9% men; M_age = 19.18) and a telecom operator (n = 143; 46.9% men; M_age = 19.15), which should be familiar settings. The participants in the bookstore setting bought their textbooks at a local bookstore, and all participants in the telecom operator setting possessed a mobile phone and thus had contracted with a telecom operator. The third setting, a food retail context, involved an adult sample (n = 180; 49.4% men; M_age = 41.61).
Manipulations. In the bookstore setting, respondents ordered a book they needed for a university course, because it was out of stock when they visited the store. The bookstore employee processed the order and promised to notify the customer when the book arrived, which should be within the week. After 1 week, the customer returned to the store, asking whether the book already arrived; it had. After paying, the customer complained that he or she had expected a phone call from the bookstore but never received it. In the unsatisfactory CR condition, the employee tells the customer that this promise was made by a colleague who is not present at that time. The bookstore employee asks contact details, so that the other employee can contact the customer the next day. The customer does not receive any response. The satisfactory CR condition reflected aspects identified by Andreassen (2000): offering an apology, showing empathy, and providing compensation (5 euro). The PRC, communicated through the website (one to many) or a direct e-mail (one to one), announced the introduction of an online tracking system that allows customers to follow the status of an order at all times. When an ordered book arrived at the bookstore, the system would automatically send a notification to the customer, to avoid similar failures in the future. The bookstore had chosen to make this process improvement in response to a number of complaints.

In the telecom operator scenarios, the customer used a prepaid mobile phone plan that added call credits to the customer’s account when the customer made advance payments. The customer had ordered additional call credits through the telecom operator’s website but accidentally typed in the wrong mobile phone number, so the credit was added to another customer’s account. The customer sees, when checking his or her bank account, that the amount has been paid to the telecom operator but is unaware of the service failure. Only when he or she goes to call a friend 2 days later does the customer receive a message about low call credits, which prevent him or her from making the phone call. The customer sends an e-mail to the telecom operator, asking why the call credits have not been added to his or her account. In the unsatisfactory CR condition, the customer does not receive any response. In the satisfactory CR condition, the complaining customer received a phone call, during which the customer service manager apologized, showed empathy, and offered a refund. In addition, the customer service manager explained that the customer accidently typed in the wrong mobile phone number. The PRC, communicated through the website (one to many) or a personal e-mail (one to one), informed customers that because of a number of complaints, customers would need to type in their phone number twice, instead of once when recharging call credits. This procedure ensures that the right account received the credit and no further mistakes were possible.

In the food retailer setting, the checkout employee has forgotten to scan a coupon, so the customer has overpaid by 3 euro. The customer notices this problem in the parking lot and reenters the store. The checkout employee indicates that the customer service manager has already gone home and he or she cannot handle complaints. The customer leaves contact details so that the person responsible for complaints can call him or her the next day. In the unsatisfactory CR, the customer does not receive a phone call. In the satisfactory CR, the customer service manager called the complaining customer the next day and apologized, showed empathy, and offered a refund. The PRC, communicated through a brochure (one to many) or a letter (one to one), announced the introduction of a new loyalty card that would automatically account for coupons a customer normally receives at home. With the new loyalty card, employees cannot forget to scan a particular coupon, because all discounts are bundled onto the card. The scenario noted that the retailer had chosen to make this process improvement after receiving a number of complaints. In reality, a similar loyalty card has been introduced by a large national retailer, which enhances the scenario’s realism.

Procedure. For the bookstore and telecom operator settings, we collected data from different classes at a Belgian university, before the start of a lecture. For the food retailer setting, we recruited an adult sample through random solicitations in different locations in Belgium. Participants were randomly assigned to one of the six experimental conditions and asked to imagine themselves as the customer in the scenario. After reading the scenario, participants rated their overall satisfaction (bookstore $a = .928$; telecom $a = .919$; food retail $a = .863$), repurchase intentions (bookstore $a = .842$; telecom $a = .875$; food retail $a = .890$), word-of-mouth intentions (bookstore $a = .969$; telecom $a = .959$; food retail $a = .956$), and failure severity (bookstore $a = .863$; telecom $a = .945$; food retail $a = .872$), on 3-item, 7-point Likert-type scales from Maxham and Netemeyer (2002a). The manipulation checks for this study included an assessment of the different CR levels, according to Maxham and Netemeyer’s (2002a) 7-point satisfaction with CR scale (bookstore $a = .898$; telecom $a = .943$; food retail $a = .898$). The test of the PRC manipulation used a 7-point Likert-type scale (bookstore $a = .914$; telecom $a = .896$; food retail $a = .931$) with 3 items: “[Service provider] takes the necessary precautions so this problem cannot reoccur in the future,” “[Service provider] communicates that they have taken the necessary steps so the same failure cannot recur in the future,” and “I feel confident that this problem will not reoccur in the future.” We assessed scenario realism with a 2-item, 7-point Likert-type scale (Liao 2007; bookstore $a = .833$; telecom $a = .916$; food retail $a = .895$).

Results

Manipulation checks. The means of the manipulation check measures were significantly different and in the desired directions ($p < .001$, Table 1). An unsatisfactory CR yielded significantly lower satisfaction with the CR than a satisfactory one. Similarly, customers who received no PRC noted significantly lower ratings on the relevant manipulation check than customers who received PRC. They also evaluated the scenarios as realistic (bookstore $M = 5.46$; telecom $M = 5.42$; food retail
Table 1. Manipulation and Scenario Realism Checks (Studies 1 and 2)

|                        | Bookstore | Telecom | Food Retail |
|------------------------|-----------|---------|-------------|
| Study 1                |           |         |             |
| Customer recovery (CR) | Unsatisfactory CR | 4.19<sup>a</sup> | 3.87<sup>a</sup> | 3.64<sup>a</sup> |
|                        | Satisfactory CR   | 5.86<sup>b</sup> | 6.13<sup>b</sup> | 6.20<sup>b</sup> |
|                        | t statistic       | 7.620*** | 9.532***    | 11.255***  |
| Process recovery communication (PRC) | No PRC | 3.06<sup>a</sup> | 2.54<sup>a</sup> | 3.53<sup>a</sup> |
|                        | PRC one to one     | 5.37<sup>b</sup> | 5.74<sup>b</sup> | 6.09<sup>b</sup> |
|                        | PRC one to many     | 5.46<sup>b</sup> | 5.34<sup>b</sup> | 5.87<sup>b</sup> |
|                        | F statistic        | 47.655*** | 77.893***   | 75.496***  |
| Scenario realism       | Mean realism       | 5.46     | 5.42        | 5.80        |
|                        | F statistic<sup>c</sup> | 2.136<n.s.> | 1.310<n.s.> | 1.074<n.s.> |
| Study 2                |           |         |             |
| PRC                    | No PRC     | 2.56<sup>a</sup> | 2.84<sup>a</sup> | 3.79<sup>a</sup> |
|                        | PRC        | 5.13<sup>b</sup> | 5.40<sup>b</sup> | 5.47<sup>b</sup> |
|                        | t statistic  | 6.949*** | 7.575***    | 3.861***   |
| Scenario realism       | Mean realism   | 5.59     | 5.59        | 5.79        |
|                        | F statistic<sup>c</sup> | 1.753<n.s.> | 1.807<n.s.> | 1.892<n.s.> |

Note. <sup>a,b</sup>Denote significant differences.  
<sup>c</sup>Tests whether scenario realism differs between the experimental manipulations.  
<sup>***</sup>p < .001; n.s. = not significant.

Main findings. To evaluate the hypotheses across the three settings, we ran three separate multivariate analyses of covariance (one per setting). At the multivariate level, the main effect of PRC was significant in all three settings, bookstore 
\( F(6, 288) = 6.449, p < .001; \) telecom 
\( F(6, 268) = 8.290, p < .001; \) food retailer 
\( F(6, 336) = 6.288, p < .01. \) At a univariate level, PRC had a positive impact on the three dependent variables in all three settings 
\( p < .001, \) see Tables 2 and 3). For example, in the bookstore, telecom, and food retail settings, customers who did not receive PRC expressed less overall satisfaction 
\( M = 3.89, \) 4.20, and 4.58) than those who did receive PRC, regardless of whether they received one-to-one communication 
\( M = 5.03, \) 5.50, and 5.93) or one-to-many communication 
\( M = 4.99, \) 5.44, and 5.49). The significant influence of PRC also held for repurchase and word-of-mouth intentions in all three settings. Thus, we find support for Hypothesis 1.

In our test of Hypothesis 2, at the multivariate level, we found significant interaction effects in the bookstore, 
\( F(6, 288) = 2.452, p < .05, \) telecom, 
\( F(6, 268) = 2.410, p < .05, \) and food retailer, 
\( F(6, 336) = 2.313, p < .05, \) samples. Table 2 contains the results of the univariate tests. The interaction effects between CR and PRC were significant for overall satisfaction, repurchase intentions, and word-of-mouth intentions in all three settings 
\( p < .05. \) The follow-up 
\( F \) tests and effect sizes (Table 3) also reveal a stronger positive effect of PRC on customer outcomes when customers received unsatisfactory compared with satisfactory CR. For example, in the bookstore sample, the overall satisfaction ratings for complaining customers who received unsatisfactory CR were 2.54 without PRC, 4.29 with PRC one to one, and 4.23 with PRC one to many 
\( F = 18.005, p < .001, \) \( \eta^2 = .337 \); for complaining customers who received a satisfactory CR, they were 5.29 without PRC, 5.62 with PRC one to one, and 5.80 with PRC one to many 
\( F = 5.210, p > .05, \) \( \eta^2 = .042. \) No significant differences were found between a one-to-one and a one-to-many PRC. Similar findings hold for all dependent variables across all three settings. In Figure 1, Panels a–c, we plot the interaction effects for the dependent variables in the telecom setting: PRC, regardless of how it is communicated, leads to strong increases in the dependent measures for complaining customers who receive an unsatisfactory CR, but it is less strong for complainers who receive a satisfactory CR.

Regardless of using one-to-one communication or one-to-many communication, PRC had strong positive effects on overall satisfaction, repurchase intentions, and word-of-mouth intentions for customers who receive unsatisfactory CR, but these effects were weaker for customers who receive satisfactory CR in all settings. These findings support Hypotheses 2a–2c.

Even after satisfactory CR, customers who receive PRC displayed some higher customer outcomes than those who did not. Yet, these increases were modest and significant only for overall satisfaction in the telecom and food retailer settings 
\( p < .05, \) not in the bookstore setting 
\( p > .05. \) It did not affect repurchase or word-of-mouth intentions.

Although PRC was less effective after satisfactory CR, our results underscore the importance of providing satisfactory CR. If we compare the means in Table 4, we find that a customer who received PRC following unsatisfactory CR still indicated lower mean ratings than a customer who received satisfactory CR without PRC. That is, PRC may attenuate customer outcomes following an unsatisfactory CR, but it cannot fully restore them. Our results show that both satisfactory CR and PRC are important service recovery activities.
Discussion

Study 1 provides support for the effectiveness of PRC to complaining customers; it significantly increases their overall satisfaction, repurchase intentions, and word-of-mouth intentions. Moreover, the level of CR significantly clarifies the role of PRC. Especially in situations in which respondents regard the CR as unsatisfactory, PRC offers viable benefits: Following unsatisfactory CR, PRC has a positive and strong impact on all dependent variables, whereas if the CR seems satisfactory, PRC has less impact on customer outcomes.

Ideally, complaining customers should receive both satisfactory CR and PRC, because this combination yields the highest customer outcomes. Although PRC is most effective after unsatisfactory CR, the role of satisfactory CR should not be underestimated, in that unsatisfactory CR with PRC still yields lower customer outcomes than satisfactory CR without PRC. If a customer complains to a firm, the first priority should be to provide satisfactory CR.

After such satisfactory CR, PRC can produce increases in overall satisfaction in some instances, but it has no discernible effect on repurchase or word-of-mouth intentions. These findings might be explained by two factors: the nature of the dependent variables and the type of failure. First, according to Gustafsson, Johnson, and Roos (2005), overall satisfaction is a backward-looking perception (i.e., evaluation of what the customer has encountered thus far), whereas repurchase and word-of-mouth intentions are forward-looking, involving the respondents’ future intentions toward a service provider. Backward-looking perceptions are more subject to influence and therefore should increase more easily after a PRC, but forward-looking perceptions are more difficult to influence. Second, these findings might reflect the nature of the service failure. The bookstore setting described a process failure (employee promised to notify the customer but did not), whereas the other two settings involved outcome failures (customer experienced monetary losses). In Table 3, we observe that PRC significantly influences satisfaction after outcome failures but not process failures, which suggests that customers may find it more important that service providers rule out the root causes of outcome failures. This argument aligns with service quality research that reveals that customers find it more important that service reliability, largely determined by service outcomes, is flawless rather than that service quality is perfect (Parasuraman, Berry, and Zeithaml 1991). Thus, our findings suggest that firms could provide PRC to customers who experience an outcome failure, even after they receive satisfactory CR, because it is likely to increase their overall satisfaction.

Although Study 1 delivers valuable insights into the role of PRC toward complaining customers (Types 1 and 2) on various customer outcomes, its impact on the largest group of customers, that is, noncomplaining customers who have experienced failures (Type 3) and customers who have not experienced failures (Type 4), remains unanswered. If a company decides to employ one-to-many PRC, the message automatically reaches

Table 2. Multivariate Analysis of Variance/Multivariate Analysis of Covariance (MAN(C)OVA) Models (Studies 1 and 2)

|                  | Bookstore |              | Telecom |              | Food Retail |              |
|------------------|-----------|--------------|---------|--------------|-------------|--------------|
|                  | F        | $\eta^2$    | F       | $\eta^2$    | F           | $\eta^2$    |
| Study 1          |          |             |         |              |             |             |
| Overall satisfaction |          |             |         |              |             |             |
| CR               | 92.647*** | 0.388       | 127.503*** | 0.484       | 88.125***   | 0.341       |
| PRC              | 15.815*** | 0.178       | 24.562*** | 0.265       | 17.627***   | 0.172       |
| CR $\times$ PRC  | 6.141**   | 0.078       | 6.199**  | 0.084       | 4.829**     | 0.054       |
| Severity         | 9.187***  | 0.059       | 2.525n.s. | 0.018       | 1.592n.s.   | 0.009       |
| Repurchase intentions |          |             |         |              |             |             |
| CR               | 38.710*** | 0.210       | 54.894*** | 0.288       | 50.832***   | 0.230       |
| PRC              | 16.144*** | 0.181       | 12.750*** | 0.158       | 12.203***   | 0.126       |
| CR $\times$ PRC  | 3.075*    | 0.040       | 4.092*   | 0.057       | 6.417*      | 0.070       |
| Severity         | 9.456**   | 0.061       | 0.363n.s. | 0.003       | 12.241***   | 0.067       |
| Word-of-mouth intentions |          |             |         |              |             |             |
| CR               | 47.217*** | 0.244       | 91.958*** | 0.403       | 47.471***   | 0.218       |
| PRC              | 15.060*** | 0.171       | 12.106*** | 0.151       | 12.188***   | 0.125       |
| CR $\times$ PRC  | 6.094**   | 0.077       | 3.154*   | 0.044       | 3.371*      | 0.042       |
| Severity         | 7.321**   | 0.048       | 0.059n.s. | 0.000       | 6.549*      | 0.037       |
| Study 2          |          |             |         |              |             |             |
| Overall satisfaction |          |             |         |              |             |             |
| FE               | 48.953*** | 0.401       | 59.571*** | 0.453       | 14.409***   | 0.077       |
| PRC              | 0.876n.s. | 0.012       | 2.383n.s. | 0.032       | 3.199n.s.   | 0.028       |
| FE $\times$ PRC  | 9.551**   | 0.116       | 8.063*** | 0.101       | 9.329***    | 0.077       |
| Repurchase intentions |          |             |         |              |             |             |
| FE               | 19.796*** | 0.213       | 20.962*** | 0.225       | 10.079***   | 0.083       |
| PRC              | 2.393n.s. | 0.032       | 3.670n.s. | 0.049       | 0.018n.s.   | 0.000       |
| FE $\times$ PRC  | 7.819***  | 0.097       | 11.624*** | 0.139       | 0.099n.s.   | 0.001       |
| Word-of-mouth intentions |          |             |         |              |             |             |
| FE               | 28.161*** | 0.278       | 29.223*** | 0.289       | 8.128*      | 0.068       |
| PRC              | 4.504*    | 0.058       | 8.559**  | 0.106       | 0.000n.s.   | 0.000       |
| FE $\times$ PRC  | 9.373**   | 0.114       | 8.935**  | 0.110       | 2.701n.s.   | 0.018       |

Note. CR = customer recovery; FE = failure experience; PRC = process recovery communication.

$***p < .001$. $**p < .01$. $*p < .05$. n.s. = not significant.
### Table 3. Main and Interaction Effects: Means, \( F \) Values, and Effect Sizes (Study 1)

| CR | Unsatisfactory | Satisfactory | Main Effect | UNSAT CR | SAT CR | MAIN EFFECT |
|----|----------------|--------------|-------------|----------|--------|-------------|
| **Bookstore** | | | | | | |
| Overall satisfaction | No PRC | 2.54\(^a\) | 5.29\(^a\) | 3.89\(^a\) | 2.83\(^a\) | 5.56\(^a\) | **4.20** \(^a\) | 3.28\(^a\) | 5.80\(^a\) | **4.58** \(^a\) |
| | PRC one to one | 4.29\(^b\) | 5.62\(^a\) | 5.03\(^b\) | 4.83\(^b\) | 6.20\(^b\) | **5.50** \(^b\) | 5.35\(^b\) | 6.40\(^b\) | **5.93** \(^b\) |
| | PRC one to many | 4.23\(^b\) | 5.80\(^a\) | 4.99\(^b\) | 4.55\(^b\) | 6.26\(^b\) | **5.44** \(^b\) | 4.65\(^b\) | 6.33\(^b\) | **5.49** \(^b\) |
| **F** statistic | 18.005\(^***\) | 1.624 | **15.815** \(^***\) | 23.850\(^***\) | 3.291\(^+\) | **16.144** \(^***\) | 12.597\(^***\) | 4.154\(^b\) | **15.060** \(^***\) |
| \( \eta^2 \) | 0.337 | 0.042 | 0.178 | 0.416 | 0.088 | **0.181** | 0.239 | 0.085 | 0.171 |
| **Telecom** | | | | | | |
| Overall satisfaction | No PRC | 2.96\(^a\) | 4.97\(^a\) | 3.95\(^a\) | 3.48\(^a\) | 5.61\(^a\) | **4.55** \(^a\) | 3.53\(^a\) | 5.84\(^a\) | **4.73** \(^a\) |
| | PRC one to one | 4.62\(^b\) | 5.50\(^a\) | 5.11\(^b\) | 5.03\(^b\) | 6.10\(^b\) | **5.55** \(^b\) | 5.55\(^b\) | 6.12\(^b\) | **5.87** \(^b\) |
| | PRC one to many | 4.58\(^b\) | 5.76\(^a\) | 5.15\(^b\) | 5.04\(^b\) | 6.00\(^b\) | **5.54** \(^b\) | 5.00\(^b\) | 6.17\(^b\) | **5.58** \(^b\) |
| **F** statistic | 18.227\(^***\) | 3.017\(^*\) | **24.562** \(^***\) | 11.109\(^***\) | 1.789\(^\text{n.s.}\) | **12.750** \(^***\) | 10.893\(^***\) | 0.871\(^\text{n.s.}\) | **12.106** \(^***\) |
| \( \eta^2 \) | 0.339 | 0.075 | 0.265 | 0.249 | 0.050 | **0.158** | 0.214 | 0.019 | 0.151 |
| **Food Retail** | | | | | | |
| Overall satisfaction | No PRC | 1.86\(^a\) | 4.57\(^a\) | 3.19\(^a\) | 2.73\(^a\) | 5.30\(^a\) | **4.02** \(^a\) | 2.95\(^a\) | 5.25\(^a\) | **4.14** \(^a\) |
| | PRC one to one | 3.98\(^b\) | 4.83\(^a\) | 4.46\(^b\) | 4.46\(^b\) | 5.88\(^b\) | **5.16** \(^b\) | 4.96\(^b\) | 5.80\(^b\) | **5.43** \(^b\) |
| | PRC one to many | 3.81\(^b\) | 5.32\(^a\) | 4.54\(^b\) | 3.99\(^b\) | 5.68\(^b\) | **4.87** \(^b\) | 4.42\(^b\) | 5.64\(^b\) | **5.03** \(^b\) |
| **F** statistic | 26.187\(^***\) | 1.609\(^*\) | **17.627** \(^***\) | 12.153\(^***\) | **1.648** \(^\text{n.s.}\) | **12.203** \(^***\) | 10.03\(^***\) | **1.686** \(^\text{n.s.}\) | **12.188** \(^***\) |
| \( \eta^2 \) | 0.425 | 0.042 | 0.172 | 0.266 | 0.046 | **0.126** | 0.201 | 0.191 | 0.125 |

CR = customer recovery; PRC = process recovery communication.

\(^a,b\) Denote significant differences using post hoc tests.

\(^*\) \( p < .05 \). \(^**\) \( p < .01 \). \(^***\) \( p < .001 \). \(^\text{n.s.}\) = not significant.
customers who have not experienced a service failure. The impact of PRC on customer outcomes of customers who have not experienced a service failure is investigated in Study 2.

Study 2

Method

Study 2 used a 2 (no PRC vs. PRC one to many) × 2 (no failure vs. failure but no complaint) scenario-based, between-subjects experiment to examine the impact of PRC toward noncomplaining customers (Types 3 and 4). We again used three settings: a bookstore (n = 77 undergraduates; 49.4% men; \( M_{age} = 18.97, SD = 1.47 \)), telecom operator (n = 76 undergraduates; 50.0% men; \( M_{age} = 18.80, SD = 0.86 \)), and food retailer (n = 116 adults recruited randomly; 31.9% men; \( M_{age} = 44.39, SD = 15.05 \)). After reading the scenarios, participants rated their overall satisfaction (bookstore \( a = .925 \); telecom \( a = .872 \); food retail \( a = .899 \), repurchase intentions (bookstore \( a = .872 \); telecom \( a = .899 \); food retail \( a = .823 \), word-of-mouth intentions (bookstore \( a = .937 \); telecom \( a = .925 \); food retail \( a = .909 \)) and scenario realism check (bookstore \( a = .889 \); telecom \( a = .834 \); food retail \( a = .922 \)).

Manipulations. To manipulate the failure experience and distinguish between complaining (Study 1) and noncomplaining scenarios, we followed Hocutt, Bowers, and Donovan’s (2006) approach. Each scenario described an experience similar to those in Study 1. If a customer experienced a service failure (Type 3), the manipulations were similar to those in Study 1 but did not include a complaint or CR; the descriptions indicated that the customer did not complain due to lack of time (Voorhees, Brady, and Horowitz 2006). If a customer did not experience the service failure (Type 4), respondents read that the initial service had been carried out as intended. The PRC manipulations were identical to the PRC one-to-many manipulations in Study 1.

Results

Manipulation checks. The PRC manipulations were successful in all three settings; customers who received no PRC displayed lower ratings on the manipulation checks than customers who received a PRC (\( p < .001 \), Table 1). Respondents also evaluated the scenarios as realistic (bookstore \( M = 5.59 \); telecom \( M = 5.59 \); food retail \( M = 5.79 \)).

Main findings. To evaluate Hypothesis 3 across the three settings, we ran three separate multivariate analyses of variance. The PRC main effects at the multivariate level were significant in the telecom setting, \( F(3, 70) = 2.830, p < .05 \), but not in the bookstore, \( F(3, 71) = 2.015, p > .05 \), or food retail, \( F(3, 110) = 1.470, p > .05 \), settings. At the univariate level, we found mixed results. As the results in Tables 2 and 4 show, PRC did not yield a significant increase in overall satisfaction and repurchase intentions across all settings (\( p > .05 \)). For word-of-mouth intentions, we found significant differences in the bookstore, no PRC \( M = 3.73 \), PRC \( M = 4.38 \); \( F(1, 71) = 4.475, p < .05 \), and telecom, no PRC \( M = 4.02 \), PRC \( M = 4.82 \); \( F(1, 70) = 7.957, p < .01 \), settings, but not in the food retail setting (\( p > .1 \)).

Noncomplaining customers’ failure experience significantly clarifies the role of PRC. We predicted that customer outcomes
Table 4. Main and Interaction Effects: Means, F Values, and Effect Sizes (Study 2)

|                           | Bookstore     | Telecom      | Food Retail  |
|---------------------------|---------------|--------------|--------------|
|                           | No PRC        | Failure, No  | Main Effect  |
|                           |               | Complaint    |              |
| Overall satisfaction      | 5.89          | 2.88         | 4.34         |
| PRC                       | 5.25          | 4.08         | 4.63         |
| \(F\) statistic           | \(1.581^{\text{n.s.}}\) | \(5.142^{\text{n.s.}}\) | \(0.876^{\text{n.s.}}\) |
| \(\eta^2\)                | 0.046         | 0.125        | 0.012        |
| Repurchase intentions     | 5.61          | 3.49         | 4.52         |
| PRC                       | 5.25          | 4.76         | 4.99         |
| \(F\) statistic           | \(0.475^{\text{n.s.}}\) | \(7.046^{\text{n.s.}}\) | \(2.393^{\text{n.s.}}\) |
| \(\eta^2\)                | 0.014         | 0.164        | 0.032        |
| Word of mouth             | 4.74          | 4.06         | 4.38         |
| PRC                       | 4.74          | 4.06         | 4.38         |
| \(F\) statistic           | \(0.113^{\text{n.s.}}\) | \(10.646^{**}\) | \(4.504^{*}\) |
| \(\eta^2\)                | 0.003         | 0.228        | 0.059        |
|                           |               | 5.16         | 4.49         | 4.82 |
|                           |               | \(0.064^{\text{n.s.}}\) | \(13.767^{***}\) | \(8.559^{**}\) |
|                           |               | 0.002        | 0.288        | 0.102 |
|                           |               | 0.002        | 0.005        | 0.000 |

Note. FE = failure experience; PRC = process recovery communication.
***p < .001. **p < .01. *p < .05. n.s. = not significant.

would reveal more positive influences of PRC for noncomplaining customers who experienced the service failure than for those who did not experience it. At a multivariate level, the interaction effects between PRC and failure experience were significant in all three settings: bookstore \(F(3, 71) = 3.530, p < .05\); telecom \(F(3, 70) = 4.397, p < .01\); food retailer \(F(3, 110) = 3.703, p < .05\). The univariate tests (Table 2) revealed significant interaction effects for overall satisfaction, repurchase intentions, and word-of-mouth intentions in the bookstore and telecom operator settings \((p < .05)\), though in the food retailer setting, the interaction effect was significant only for overall satisfaction \((p < .01)\), not for repurchase or word-of-mouth intentions. Across all three settings, PRC had a significant positive influence on overall satisfaction for customers who experienced the service failure, but we found no significant differences for customers who did not. For example, in the bookstore setting, the means for noncomplaining customers who experienced the service failure were 4.08 with PRC and 2.88 without, \(F(1, 36) = 5.142, p < .05\). \(\eta^2 = .125\); for those who did not experience it, the comparable means were 5.25 and 5.89, \(F(1, 33) = 1.581, p > .1\). \(\eta^2 = .046\). These findings support Hypothesis 3a. As Table 4 shows, the findings were similar for repurchase and word of mouth in the bookstore and telecom operator settings. However, the interaction effects between failure experience and PRC on repurchase and word of mouth were not significant for the food retailer, because PRC did not significantly increase these intentions for customers who either did or did not experience the service failure \((p > .05)\). Therefore, we found only partial support for Hypotheses 3b and 3c.

In Figure 1, Panels d–f, we plot the interaction effects in the telecom operator setting; they are similar to those in the bookstore setting and to the overall satisfaction outcomes in the food retail setting.

Discussion

Study 2 has extended the findings of Study 1. Overall, the effectiveness of PRC for noncomplaining customers depends on whether the customer has experienced the service failure himself or herself. First, PRC does not significantly affect customer outcomes if they have not experienced the service failure. Second, for customers who experienced the service failure but did not complain, we find that PRC increases their overall satisfaction, in all three settings. Our findings also indicate that PRC increased repurchase intentions and word of mouth in two settings; however, the interaction effects of the failure experience and PRC were not significant in the food retail setting. The adult sample that assessed the food retail setting may produce lower effect sizes than the student samples (Orsingher, Valentini, and de Angelis 2010). Moreover, overall satisfaction is more subject to influence and therefore should increase following a PRC; forward-looking perceptions are more difficult to influence. These two observations help explain the insignificant interactions for repurchase and word-of-mouth intentions in the food retail setting. However, PRC strongly increases the overall satisfaction of noncomplaining customers who experienced a service failure, so we find support for the suggestion that firms should communicate PRC to noncomplaining customers. Many customers who experience a service failure do not complain, which implies that PRC might provide a compelling means to increase customer outcomes for this large segment of customers.

Together, Studies 1 and 2 demonstrate the positive effects of PRC. Yet, these scenario-based experiments achieve internal validity, potentially at the expense of external validity. In the scenarios, we presented service failure, CR, and PRC at the same time, raising the question of whether PRC is equally
effective across different time lags. To address these limitations, we conducted a field study.

**Study 3**

**Method**

Two hundred and eighteen adults (46.4% men, $M_{\text{age}} = 29.81$; $SD_{\text{age}} = 14.69$) completed an online survey. Participants in an online research panel were first asked if they were customers of a particular telecom operator; if not, they were not part of the target population. Customers then indicated if they had experienced service failures with this service provider. If they had not, they immediately completed the dependent measures. If they had, then respondents indicated the type of service failures they encountered, from a list of the six most common service failures (identified in interviews with a manager of the focal telecom operator, annual reports, and press releases). These failures have been studied in detail by the company, as it attempts to find appropriate solutions (i.e., PR) and implement them. The six most common complaints were (1) customers were unaware when technicians would arrive to install new applications or solve problems; (2) if customers had problems with the Internet connection that could not be resolved right away, they lacked an Internet connection for a long time; (3) the call center was not open during evening or weekends hours, (4) unreasonably long waiting times when contacting the call center; (5) indecipherable invoices; and (6) the telecom operator charged unexplained additional costs. Respondents also indicated when they experienced the most recent failure (less than 1 month, 1–3 months, 3–6 months, 6 months to 1 year, more than 1 year) and whether they complained about this failure. If not, respondents were asked to rate the dependent measures. If so, they rated their satisfaction with CR, using the scale from Study 1 ($\alpha = .874$). With this procedure, we classified customers as noncomplaining who did not experience the service failure (Type 4), noncomplaining who experienced the service failure (Type 3), or complaining customers who experienced different levels of satisfaction with CR (Types 1 and 2). Finally, the respondents rated overall satisfaction ($\alpha = .895$), repurchase intentions ($\alpha = .910$), and word-of-mouth intentions ($\alpha = .941$) on the same scales as in the previous studies.

Respondents then received a newsletter, entitled “You told us, and we responded” (Lovelock and Wirtz 2011). The newsletter adopted a layout previously used by the telecom operator, to ensure realism. It listed six key customer complaints, followed by a description of six associated PRs implemented by the company in actual practice: (1) If a customer has an appointment with a technician, he or she will receive a message 2 days, 1 day, and 1 hr in advance; (2) customers who experience problems with their Internet connection that are not resolved immediately receive a free Universal Serial Bus-dongle to surf on a mobile network; (3) call centers extended their hours until 10:00 p.m., 7 days a week; (4) additional call centers will be opened at peak times, with a call-back option, such that if all call center employees are busy, the telecom operator place a call back to the customer as soon as an employee is available; (5) simplified invoices now show a summary of main charges on the first page; and (6) additional costs will be communicated better in advance, to avoid any misunderstanding.

Participants were asked to read the telecom operator’s newsletter (i.e., PRC) carefully. They again rated their overall satisfaction ($\alpha = .928$), repurchase intentions ($\alpha = .856$), and word-of-mouth intentions ($\alpha = .947$). Finally, they provided some demographic information and were debriefed.

**Results**

More than half (52.5%) of respondents did not experience a service failure; 25.4% experienced a service failure and complained, and 22.1% experienced a service failure but did not to complain to the telecom operator. With a repeated measures analysis of variance (ANOVA), we first examined the impact of PRC to all customers. It significantly increased overall satisfaction: $M_{\text{before PRC}} = 5.10$, $M_{\text{after PRC}} = 5.33$; $F(1, 217) = 10.369, p = .001, \eta^2 = .046$; repurchase intentions, $M_{\text{before PRC}} = 5.17, M_{\text{after PRC}} = 5.42$, $F(1, 217) = 11.256, p = .001, \eta^2 = .049$; and word-of-mouth intentions, $M_{\text{before PRC}} = 4.44, M_{\text{after PRC}} = 4.77$, $F(1, 217) = 21.232, p < .001, \eta^2 = .090$, in support of Hypothesis 1.

We focused specifically on PRC to complaining customers by examining the level of satisfaction with CR as a moderator (Types 1 and 2). The interaction between PRC and satisfaction with CR was not significant for overall satisfaction, $F(1, 53) = .591, p = .466, \eta^2 = .011$, repurchase intentions, $F(1, 53) = 1.011, p = .319, \eta^2 = .019$, or word-of-mouth intentions, $F(1, 53) = 1.886, p = .176, \eta^2 = .035$. That is, the impact of PRC on complaining customers’ outcomes was similar across different levels of satisfaction with CR. In contrast with Study 1, we cannot confirm Hypothesis 2. PRC affects customer outcomes as much for both Type 1 and Type 2 customers.

The impact of PRC among noncomplainers differs depending on whether customers experienced a service failure or not (Types 3 and 4), as revealed by the significant interactions between PRC and failure experience for overall satisfaction; $F(1, 161) = 5.311, p = .022, \eta^2 = .032$; repurchase intentions, $F(1, 161) = 4.287, p = .040, \eta^2 = .026$; and word-of-mouth intentions, $F(1, 161) = 5.788, p = .017, \eta^2 = .035$. That is, PRC did not have significant effects on overall satisfaction ($M_{\text{before PRC}} = 5.73, M_{\text{after PRC}} = 5.77$), repurchase intentions ($M_{\text{before PRC}} = 5.79, M_{\text{after PRC}} = 5.83$), or word-of-mouth intentions ($M_{\text{before PRC}} = 5.16, M_{\text{after PRC}} = 5.26$) when customers did not experience a service failure. In contrast, it had significant effects on overall satisfaction ($M_{\text{before PRC}} = 4.41, M_{\text{after PRC}} = 4.81$), repurchase intentions ($M_{\text{before PRC}} = 4.64, M_{\text{after PRC}} = 5.04$), and word-of-mouth intentions ($M_{\text{before PRC}} = 3.63, M_{\text{after PRC}} = 4.14$) for noncomplaining customers who experienced a service failure, in support of Hypothesis 3.

Finally, for customers who experienced a service failure (Types 1–3), we tested whether the impact of PRC on customer outcomes differed depending on the time lag between service
failure and PRC. That is, 23.3% of customers experienced their latest service failure less than 1 month, 43.3% between 1 and 3 months, 17.5% between 3 and 6 months, 11.7% between 6 months and 1 year, and 4.2% experienced their latest service failure more than 1 year. However, no significant interaction effects emerged between PRC and the time lag (all \( p > .05 \)).

**Discussion**

The results of our field study support the positive effects of PRC: It has a positive impact on overall satisfaction, repurchase intentions, and word-of-mouth intentions. Focusing on complaining customers, the positive effects of PRC are even more pronounced in reality: even following a satisfactory CR, PRC enhances customer outcomes. In our experimental study (Study 1), the impact of PRC on customer outcomes was weaker after a satisfactory CR. This might be attributed to the difference in time lag between the experience of the satisfactory CR and the PRC. In Study 1, the satisfactory CR and PRC were presented simultaneously. In reality (Study 3), time passes, extending the gap between the moment of experiencing a satisfactory CR and the PRC event. Maxham and Netemeyer (2002b) found that customers who have not experienced failures with a certain service provider over a longer period of time may weigh satisfaction with service recovery less when deriving their customer outcomes than customers who experienced failures recently. Customers who received a satisfactory CR recently are more likely to have high customer outcomes, so PRC might not improve their already positive evaluation. In contrast, CR influences satisfaction less for customers who received a satisfactory CR some time ago. In these circumstances, PRC might improve these customers’ outcomes. To test this potential explanation, we compared Type 1 customers with less recent satisfactory CR experiences with those who experienced their satisfactory CR more recently, using subsamples from Study 3. The results indicate that the impact of PRC on customer outcomes was greater when the satisfactory CR occurred less (vs. more) recently (i.e., more vs. less than 1 month). This outcome might help explain why we find stronger effects for the impact of PRC on customer outcomes in our field study compared to the experimental study findings.

In line with Study 2, PRC had stronger effects on customers who experienced a service failure (Type 3) than on customers who did not (Type 4). Therefore, customers who experience a failure react positively to PRC, whereas customers who do not experience a failure remain neutral and do not change their evaluations of the service provider.

Finally, for all customers who experienced a service failure (Types 1–3), the field study also offers insights regarding the effectiveness of PRC across different time lags between the service failure and the PRC. Our findings illustrate that PRC can always yield positive effects, which is managerially important since PR might be time-intensive (Johnston and Clark 2008). However, for complaining customers who receive satisfactory CR (Type 1), PRC has positive effects if it occurs some time after the moment they received the satisfactory CR. If it is communicated too soon after the CR though, the effect is weaker. Considering the likelihood of unsatisfactory CR in real practice and its negative impact on customer behavior in general though, it remains important to implement PRC as soon as possible to minimize any gap between an unsatisfactory CR experience and the PRC. In addition, over time, unsatisfied customers might leave the provider, and our results cannot reveal whether PRC could induce them to come back.

Studies 1–3 do not examine whether perceived relationship investment and overall perceived justice increase due to PRC. In order to overcome this limitation, Study 4 examines perceived relationship investment and overall perceived justice as mediators of the PRC—customer outcomes relationships in case of a service failure.

**Study 4**

**Method**

One hundred and fourteen undergraduate students (33.6% men; \( M_{age} = 21.56 \)) participated in a mixed 2 (brochure with or without PRC) \( \times 2 \) (failure with or without complaint) \( \times 2 \) (measurement after failure or after receiving brochure) experiment, with the latter factor assessed within-subjects. Respondents read a scenario describing a service failure in a food retail. The service failure was identical to the food retail setting in Study 1. Afterward, the scenario described customers as either complaining (identical to Study 1) or noncomplaining customers (identical to Study 2). Next, participants rated customer outcomes, perceived relationship investment and perceived justice.

Respondents were then randomly assigned to read a scenario in which they received a brochure, with or without PRC. All participants were told that they received a brochure so the experimenters could rule out the possibility of effects from merely communicating with customers, instead of the presence or absence of PRC. In the without-PRC condition, the general brochure highlighted some products of the food retailer’s assortment and included a number of coupons. In the with-PRC condition, the brochure included the PRC as outlined in Study 1. Finally, participants again rated the customer outcomes, perceived relationship investment, and perceived justice.

**Measures.** We measured overall satisfaction (\( \alpha = .809 \)), repurchase intentions (\( \alpha = .717 \)), and positive word-of-mouth intentions (\( \alpha = .934 \)) using the scales from Study 1. The perceived relationship investment (\( \alpha = .952 \)) measured used a 3-item, 7-point Likert-type scale from De Wulf, Odekerken-Schroder, and Iacobucci (2001). Overall perceived justice (\( \alpha = .808 \)) featured 3 items from De Matos et al. (2009). We measured failure severity (\( \alpha = .830 \)) using the scales from Study 1; it serves as a covariate.

**Results**

A longitudinal, multilevel model served to test the mediating role of perceived relationship investment and perceived justice.
### Table 5. Multilevel Regression Results (Study 4)

#### Main Results (n = 114)

|                                | M1: Overall Satisfaction | M2: Repurchase Intentions | M3: Word-of-Mouth Intentions |
|--------------------------------|--------------------------|---------------------------|-----------------------------|
| Constant                       | 4.577***                 | 5.265***                  | 4.089***                    |
| Time of measurement (0 = after failure; 1 = after brochure) | 0.289*                  | -0.061 n.s.               | 0.118 n.s.                 |
| Failure (0 = complaint; 1 = no complaint) | 0.367*                  | 0.143 n.s.               | 0.566**                     |
| Brochure (0 = no PRC; 1 = PRC) | 0.109 n.s.              | 0.104 n.s.               | 0.029 n.s.                 |
| Time × Brochure                | 0.708***                 | 0.344*                    | 0.730***                    |
| Failure severity               | -0.218***                | -0.192 n.s.              | 0.107 n.s.                 |

#### Mediation analysis (n = 56)

|                                | M4: Overall Satisfaction | M5: Repurchase Intentions | M6: Word-of-Mouth Intentions | M7: Perceived Relationship Investment | M8: Overall Perceived Justice |
|--------------------------------|--------------------------|---------------------------|-----------------------------|---------------------------------------|-------------------------------|
| Constant                       | 3.744***                 | 5.133***                  | 3.385***                    | 2.731***                              | 2.813***                      |
| PRC (0 = no PRC; 1 = PRC)      | 0.999***                 | 0.281***                  | 0.848***                    | 1.564***                              | 1.502***                      |
| Failure (0 = complaint; 1 = no complaint) | 0.228 n.s.              | 0.036 n.s.               | 0.239 n.s.                  | 0.186 n.s.                           | -0.167 n.s.                  |
| Failure severity               | -0.221***                | -0.215***                 | -0.158*                    | -0.149*                              | -0.097*                       |

|                                | M9: Overall Satisfaction | M10: Repurchase Intentions | M11: Word-of-Mouth Intentions | M12: Overall Satisfaction | M13: Repurchase Intentions | M14: Word-of-Mouth Intentions |
|--------------------------------|--------------------------|---------------------------|-----------------------------|--------------------------|---------------------------|-----------------------------|
| Constant                       | 2.073***                 | 4.504***                  | 1.967***                    | 2.161***                  | 4.382***                  | 2.068***                    |
| PRC                            | —                        | —                         | —                           | —                        | —                         | —                           |
| Failure type                   | 0.197 n.s.               | 0.036 n.s.               | 0.283 n.s.                  | 0.074 n.s.               | -0.085 n.s.              | 0.076 n.s.                  |
| Failure severity               | -0.141***                | -0.189***                 | -0.092 n.s.                 | -0.144***                | -0.186***                 | -0.095 n.s.                  |
| Perceived relationship investment | 0.384***                | 0.096*                    | 0.281***                    | 0.376***                 | 0.104*                    | 0.273***                    |
| Overall perceived justice      | 0.240***                 | 0.111*                    | 0.249***                    | 0.224***                 | 0.135*                    | 0.230***                    |

**Note.** ***p < .001. **p < .01. *p < .05. n.s. = not significant.**

Unstandardized regression coefficients are reported. Failure severity was mean centered.
We used multilevel regression instead of repeated measures ANOVA, because it offers more flexibility when testing mediation hypotheses (Hox 2002). The basic idea of a longitudinal, multilevel model is that responses to the dependent measures and mediators at both times of measurement (Level 1) are nested within the same respondent (Level 2). The results in Table 4 (Models 1–3) indicate a significant interaction between the time of measurement (after failure, after the brochure) and the type of brochure (without or with PRC; \( p < .001 \)). In Figure 2, we provide a graphical interpretation. A brochure with PRC has a positive impact on overall satisfaction, repurchase intentions, and word-of-mouth intentions. A brochure without PRC has no such effects.

We focus here on respondents who received PRC (\( n = 56 \)). Multiple mediation analysis reveals whether perceived relationship investment and perceived justice explain the positive effects of PRC. The two mediators are significant correlated (\( r = .547 \)), so testing them simultaneously is appropriate (Porath, MacInnis, and Folkes 2011). To establish full mediation, we must show that (1) PRC significantly affects the dependent variables (overall satisfaction, repurchase intentions, word-of-mouth intentions) and the mediators (perceived relationship investment, perceived justice), (2) the mediators affect the dependent variables, and (3) the effect of PRC on the dependent variables disappears when the mediators are included, but the mediators remain significant (Baron and Kenny 1986).

Models 4–8 in Table 4 indicate that PRC increases overall satisfaction (\( B = .999, \ p < .001 \)), repurchase intentions (\( B = .281, \ p < .001 \)), word-of-mouth intentions (\( B = .848, \ p < .001 \)), perceived relationship investment (\( B = 1.564; \ p < .001 \)), and perceived justice (\( B = 1.502, \ p < .001 \)), supporting Hypothesis 1. With Models 9–11, we show that perceived relationship investment affects overall satisfaction (\( B = .384, \ p < .001 \)), repurchase intentions (\( B = .96, \ p < .05 \)), and word-of-mouth intentions (\( B = .281, \ p < .001 \)). Perceived justice also affects overall satisfaction (\( B = .240, \ p < .001 \)), repurchase intentions (\( B = .111, \ p < .05 \)), and word-of-mouth intentions (\( B = .249, \ p < .001 \)). Finally, Models 12–14 support the mediating roles of perceived relationship investment and perceived justice, because the effect of PRC becomes insignificant for all three dependent variables, whereas the effect of perceived relationship investment remains significant (satisfaction \( B = .376, \ p < .001 \); repurchase \( B = .104, \ p < .05 \); word of mouth \( B = .273, \ p < .001 \)). The effect of overall perceived justice also remains significant (satisfaction \( B = .224, \ p < .01 \); repurchase \( B = .135, \ p < .05 \); word of mouth \( B = .230, \ p < .01 \)). Sobel tests show that perceived relationship investment fully mediates the relationship between PRC and overall satisfaction (Sobel: \( z = 4.575, \ p < .001 \)), repurchase intentions (Sobel: \( z = 2.566, \ p < .01 \)), and word-of-mouth intentions (Sobel: \( z = 3.981, \ p < .001 \)). They also show that perceived justice fully mediates the relationship between PRC and overall satisfaction (Sobel: \( z = 4.911, \ p < .001 \)), repurchase intentions (Sobel: \( z = 2.976, \ p < .01 \)), and word-of-mouth intentions (Sobel: \( z = 4.503, \ p < .001 \)). These results show that perceived relationship investment and perceived justice mediate PRC’s impact on customer outcomes.

**Discussion**

Study 4 provides further support for the impact of PRC on customer outcomes and reveals a greater understanding of what might underlie these effects. A PRC is effective because customers perceive that an organization wants to strengthen its relationships with customers by ensuring that the potential of certain service failures become remote. They also consider it fair that organizations exert effort to rule out causes of service failures and provide more reliable services and communicates this to their customers.

**General Discussion**

Our research expands on prior suggestions to communicate process recoveries to complaining customers (e.g., Boshoff 1999; Homburg and Fürst 2007). We empirically examine the
impact of PRC for complaining customers and differentiate between customers receiving satisfactory versus unsatisfactory CR (Type 1 and 2). In addition, we discriminate between noncomplaining customers who experience the service failure (Type 3), and noncomplaining customers who have not experienced a service failure (Type 4). Overall, our findings indicate valuable benefits of PRC.

First, PRC enhances overall satisfaction, repurchase intentions, and word-of-mouth intentions, through the mediating processes of perceived relationship investment and perceived justice. Customers who receive PRC not only believe that the service provider has invested in customer relationships but also think they have been treated fairly, which affects their customer outcomes. From a theoretical perspective, finding that both perceived relationship investment and perceived justice theory independently explain the effectiveness of PRC represents a contribution to the literature. While the majority of studies in a service recovery context only draw on perceived justice theories to explain effects (e.g., Gelbrich and Roschk 2011; Orsingher, Valentin, and de Angelis 2010), our research provides preliminary evidence that perceived relationship investment might complement perceived justice in this context.

Second, PRC to complaining customers in particular can overcome negative consequences of an unsatisfactory CR (Type 2 customers). Few companies successfully restore customer outcomes after service failures (Michel, Bowen, and Johnston 2009), which confirms the advisability of PRC. If a customer receives satisfactory CR (Type 1), the study findings suggest that PRC still can have positive influences on customer satisfaction, though our follow-up analysis also indicates that the time lag between the satisfactory CR and the PRC has a notable effect. If customers recently have experienced a service failure and received a satisfactory CR, PRC is less effective; if the service failure and CR were farther in the past, PRC significantly enhances customer outcomes. Notwithstanding the positive effects of PRC on complaining customers, our findings underscore the importance of satisfactory CR.

Third, for noncomplaining customers who do not experience a service failure (Type 4), we consistently find that PRC has no significant impact. However, if noncomplaining customers experience the service failure (Type 3), our results clearly indicate that a PRC attenuates some of the negative outcomes created by the service failure. Because most customers do not complain when they experience a service failure (Voorhees, Brady, and Horowitz 2006), PRC is an interesting option for reducing their negative outcomes.

This research also contributes to the broader debate about whether an organization should invest in delivering reliable service to prevent problems or in providing superior CR service when problems occur (Parasuraman 2006). Michel, Bowen, and Johnston (2009) find a trade-off in the context of service recovery, between restoring individual customers’ satisfaction through CR (i.e., marketing perspective) or investing in optimizing the service process through PR (i.e., operations management perspective). We demonstrate that both activities influence customers’ outcomes. CR has a undeniable influence on complaining customers, so organizations must make investments in CR activities and establish an appropriate complaint handling design (Homburg, Furst, and Koschat 2010). Because PRC yields enhanced customer outcomes, organizations also should invest in a strong PR system, which includes communication within the organization about customer service complaints. Then the firm can analyze information, find the root cause of complaints, and improve its processes (Johnston and Michel 2008). When the process is recovered, it should be communicated to customers to enhance their outcomes.

Managerial Implications

The main conclusion from this research is that PRC should be an integral part of service recovery. Whenever a company improves its processes, based on the input of customer complaints, PRC can result in increased overall satisfaction and behavioral intentions. In their service recovery efforts, firms should consider PRC a valuable tactic that they can combine with CR tools such as providing compensation or apologizing (Davidow 2003; Gelbrich and Roschk 2011). If PRC targets noncomplaining customers who experienced a service failure, it can attenuate negative outcomes of service failures. Therefore, PRC to complaining and noncomplaining customers represents a valuable opportunity to increase customer outcomes, particularly if the firm has failed to recover dissatisfied customers. Because relatively few customers complain or remain dissatisfied following a CR, we strongly advise managers to communicate PRC to all customers.

Such communications might take various forms. Study 1 shows that PRC to complaining customers that uses both one-to-one and one-to-many media yield similar effects. The decision of which medium to use might be important though, because the costs associated with personal communication are much higher than those for one-to-many communication, but the attention value for one-to-one communication is higher than for one-to-many communication (De Pelsmacker, Geuens, and Van den Bergh 2006). Adding personal touch to communication might increase customer evaluations, but it requires higher costs (De Wulf, Odekerken-Schroder, and Iacobucci 2001). In our field study, the customer newsletter listed six common service failures and the company’s responses to them (Lovelock and Wirtz 2011); if the same newsletter had been communicated by e-mail, it might offer greater cost effectiveness. In addition, noting the rise of new media in service relationships, service providers might announce their PRC through Facebook or Twitter, which would increase the reach of this message very cost effectively (Hennig-Thurau et al. 2010). New media might offer a short summary of the PRC to consumers, then direct them to more detailed messages posted on the company’s website or blog, which would increase the attention value of PRC.

Limitations and Further Research

Several limitations in this study present opportunities for ongoing research. Inherent to the design of our studies all
participants read the PRC, whereas in real-life settings, PRC is not always noted by customers when using for example one-to-
many PRC. Additional research should investigate the attention value of the medium with regard to the effectiveness of PRC. However, we also found that when PRC does reach a customer, it yields enhanced customer outcomes. Second, our findings indicate that PRC to complaining customers who receive satisfactory CR is more effective for outcome failures than for process failures. Further research should provide a more formal assessment of this distinction. Third, PRC might also reach customers who have already quit the service provider. Our results indicate that PRC prevents switching, but future research might explore whether PRC can induce customers who have already quit the provider to come back. Fourth, we did not control for blame attributions in Studies 1 and 2. Although our results confirm that PRC, regardless of locus of control, yields positive effects, future research might formally examine this issue. Fifth, research might explore the impact of PRC on other dependent variables. Our study has demonstrated that PRC has a positive effect on customer satisfaction and behavioral intentions; investigating actual behavioral data such as churn or repeat purchase behavior would make a fruitful research extension. Finally, research should explore the boundary conditions of PRC to offer further insights into the circumstances in which PRC works best.

In summary, though this study offers the first empirical investigation of the effectiveness of PRC, more work in this area could further enhance our understanding of PRC’s effectiveness.

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Notes
1. Johnston and Michel (2008) and Michel, Bowen, and Johnston (2008) identify three types of service recovery: customer, process, and employee recovery. We do not consider employee recovery, because our research focuses on external customers, whereas employee recovery is internally directed.
2. We tested the interactions with both satisfaction with CR as a continuous variable and a trichotomy (low, moderate, or high satisfaction with CR); the results did not differ.
3. We also examined the robustness of our results by including control variables in the analysis. The impact of PRC on customer outcomes remains significant after controlling for age, gender, educational level, attitude toward complaining, and perceived credibility of the telecom operator.
4. Reflecting the repeated measures design, measurement time was included as a Level-1 factor to the multilevel regression model. It represents whether variables were measured before or after receiving the scenario with brochure.
5. The effect of PRC on customer outcomes was not moderated by whether the customer complained (p > .05), so we dropped this interaction from the model.

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