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WORKING PAPER

Assessing the additional impact of Process Recovery Communications on Customer Outcomes: A Comprehensive Service Recovery Approach¹

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Structured abstract

Purpose – Services recoveries following service failures not only imply customer recovery opportunities in which customer-company relationships can be restored, they can also result in process improvements (i.e. process recoveries in literature). This paper seeks to identify the additional impact of process recoveries on four customer outcome variables (satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth) by communicating these improvements back to the complaining customers. In addition, we test for outcome differences depending on the level of customer recovery a complaining customer received (no, unsatisfactory or satisfactory), and question whether the use of one-to-one versus one-to-many communication yields different effects.

Design/methodology/approach – A 3 (no, unsatisfactory, and satisfactory customer recovery) x3 (no, one-to-one, and one-to-many process recovery communication) scenario-based experiment was set up to investigate our research goals.

Findings - Our results indicate that communicating process recoveries to a complaining customer significantly increases satisfaction with service recovery, overall satisfaction, repurchase intent and positive word-of-mouth. We also find evidence for different effects depending on the level of customer recovery in combination with the type of communication being used.

Originality/value – This is the first study to test the effectiveness of communicating process recoveries to complaining customers as part of a more comprehensive service recovery approach. Our findings clearly demonstrate the importance of communicating process recoveries back to customers; especially in situations where customer recovery was absent or perceived as unsatisfactory.

Keywords

Service failure, service recovery, customer recovery, process recovery, communication

Paper type

Research paper

1. Introduction

According to Schibrowsky and Lapidus (1994), the task of a customer service department is twofold. First, individual complaints have to be handled, so problems are resolved, customers satisfied and third-party complaints reduced. A second task consists of analyzing the obtained complaint data, in order to find the root cause of a complaint and make the necessary process improvements so a similar future failure seems remote. Both tasks have recently been named customer and process recovery respectively (Johnston and Michel, 2008) and are considered important domains of service recovery (Brown et al, 1996; Tax and Brown, 1998). In the remainder of this text, the label “customer recovery” refers to the actions taken by a service provider in order to return a dissatisfied customer to a state of satisfaction following a service failure, “process recovery” refers to the improvement of the process which caused the failure to occur in order to avoid future failures, whereas “service recovery” categorizes all types of recovery that follow service failures, including customer recovery, process recovery and employee recovery^[1] (Johnston and Michel, 2008; Michel et al, 2009).

Service recovery has received extensive research attention. The majority of previous studies focussed on customer recovery, mainly considering the different aspects of a customer recovery such as giving an apology, showing empathy, providing compensation, etc. (e.g. Andreassen, 2000; Boshoff, 1997; Boshoff and Leong, 1998; Davidow, 2003; Grewal et al, 2008; Wirtz & Mattila, 2004) or its impact on satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth (e.g. Maxham, 2001; DeWitt et al, 2008; Smith and Bolton, 1998; Smith et al, 1999). In contrast, empirical research examining the area of process recovery is limited. The available literature typically adopted a company perspective (for a recent overview, see Johnston & Michel, 2008) by investigating how firms can use complaints for process recovery (e.g. Johnston and Clark, 2008) or how process recovery can benefit the company’s financial performance (e.g. Johnston, 2001; Johnston and

Michel, 2008). However, process recovery can also be considered from a customer perspective. Some authors suggested that companies should communicate process recoveries back to the complaining customer in order to increase satisfaction, loyalty and word-of-mouth recommendations (e.g. Boshoff, 1999; Gronroos, 2007; Hart et al , 1990; Van Ossel et al, 2003); unfortunately, these suggestions are not yet supported by empirical research.

This study fills the voids left by previous service recovery studies by integrating both customer and process recovery. More specifically, this study contributes to the service recovery literature by demonstrating how process recovery might be linked to customer recovery and customer outcomes through the communication of organisational improvements following service failures. In this paper, we aim to answer the following research questions: (1) Is communicating a process recovery back to a complaining customer beneficiary in terms of increasing satisfaction with service recovery, overall customer satisfaction, repurchase intentions and word-of-mouth? (2) Is there a difference in benefits of the process recovery communication depending on the level (no, unsatisfactory or satisfactory) of customer recovery received earlier in the service recovery process by the customer? (3) Is there a difference in customer evaluations following a one-to-one (e.g. a personalized mail) or a one-to-many (e.g. a brochure sent to all customers) process recovery communication?

2. Theoretical background

Since customer complaints are driven by a customer's dissatisfying experience with a service provider due to a service failure (Grönroos, 1988; Oliver, 1980), companies should use this information to identify the root cause of a complaint and improve their processes so the occurrence of a similar failure in the future is prevented (Johnston, 2001; Schibrowsky and Lapidus, 1994). The outcomes of process recovery for organisations can be quite large. Past

research by Spreng et al (1995) indicated that complaints should be viewed as opportunities to make those improvements that will ultimately result in more satisfied customers due to the fact that they will not experience a similar failure in the future (e.g. Maxham and Netemeyer, 2002). Other research, investigating the financial outcomes of service recovery, not only indicated that process recovery positively benefits the bottom-line, but even found it has a higher impact on financial outcomes than customer recovery (Johnston, 2001; Johnston and Michel, 2008), which is an indication of the importance of process recovery for organisations.

2.1. Communicating process recoveries back to the complaining customer

Some authors suggested that once a process is recovered, companies might inform the complaining customer about the improvements made. Boshoff (1999) called this feedback, which “refers to the situation in which once the problem is solved, the service firm provides information about the problem and what is being done to resolve it. For example, if a customer lodges a complaint and the firm’s procedures are changed in some way due to the customer’s input, then the service firm should inform the customer of the developments.” (p. 140). Hart et al (1990) indicated that companies might “close the loop” (p. 156), meaning that companies could tell customers about the improvements the company has undertaken following a customer complaint (see also Gronroos, 2007, p. 130). Unfortunately, the aforementioned suggestions have not been empirically investigated in previous research. In this paper, we will investigate the impact of process recovery communications on four customer outcomes, namely satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth intentions.

In literature, we find three inspiration points which indicate that the communication of a process recovery might be effective.

First, a qualitative study by Johnston and Fern (1999) demonstrated that if customers experienced a service failure they wanted to be reassured it will not happen again (p. 80; see also Barlow and Møller, 1996). This is in line with two research reports which indicated that recovering processes is also important to complaining customer. A first report by MORI (1997) for the Citizen's Charter Unit in the UK revealed that about 50 percent of people complain in order that the organisation might improve its services; and more recently, the UK's National Complaints Culture Survey (2006) indicated that people not only complain in order to get their own problem solved, but also to fix the problem for future users. Basically, complainers have certain expectations about process recovery. Following Oliver's (1980) expectation disconfirmation theory, which posits that customer satisfaction is a function of expectation and expectancy disconfirmation, we might expect that when a complaining customer has heard about the process recovery the organisation has undertaken, this means that a complainer's expectations about process recovery were met and he or she will be satisfied since satisfaction occurs when expectations are met or exceeded (Schiffman and Kanuk, 2007).

Second, stability attributions might also be important in the context of explaining the effectiveness of process recovery communications. Customers who attribute outcomes to stable and permanent causes are more confident that the same failure will recur than customers who attribute outcomes to unstable causes (Weiner, 1986). Past research revealed that stability attributions influence a customer's repurchase intention (Folkes, 1984, 1988), and Smith and Bolton (1998) argued that "when a service failure is attributed to a stable cause, customers will have lower cumulative satisfaction and be less likely to repatronize the organization". Likewise, Johnston and Clark (2008, p. 433) indicated that what seems to annoy and anger customers is not necessarily the occurrence of a dissatisfying experience but rather their belief that the company might not take the necessary action to change the systems,

and as such, the problem might arise again. Communicating process recoveries might therefore ensure customers that a similar failure seems remote in the future.

Third, the effectiveness of communicating process recoveries to complaining customers might also be explained by the complaining customer's coping strategy. It is known from previous research that service failures evoke negative emotions such as dissatisfaction, anger and disappointment (Bougie et al, 2003, Colgate and Norris, 2001). Stephens and Gwinner (1998) argued that complaining customers tend to follow a problem-focused coping strategy in order to manage these negative emotions. A problem-focused coping strategy is defined as the person's attempt to manage the source of a stressful emotional experience (Yi and Baumgartner, 2004) or stated differently, "to eliminate [...] the conditions that produce stress" (Menon and Dubé, 2007, p. 269). As process recovery concerns the elimination of the root cause and the improvement of those processes which caused the failure to occur (Johnston and Michel, 2008), it might be interesting to communicate this back to the complaining customer, in order to provide reassurance that the organisation eliminated the main cause of the service failure. Based on the three aforementioned inspiration points, we postulate that:

H1a: Complaining customers who received the communication of a process recovery will have higher satisfaction with service recovery than customers who did not receive the communication of a process recovery.

Research by Spreng et al (1995) suggested that process improvements based on customer complaints should increase customers' overall satisfaction, due to the fact that customers will not experience similar failures in the future and subsequently have to go through the feelings of anger and dissatisfaction again (Bougie et al, 2003). Research by Maxham and Netemeyer (2002) indicated that customers will absolutely be discontented when a second similar failure

reoccurs. Smith and Bolton (1998) found that a customer's overall satisfaction is higher when he or she believes that the service failure is unlikely to happen again. Summarized, communicating the process recovery back to the complaining customer gives him or her some kind of reassurance that the company has taken the necessary steps to actually ensure the similar failure from reoccurring, resulting in a higher overall satisfaction.

H1b: Complaining customers who received the communication of a process recovery will have higher overall satisfaction than customers who did not receive the communication of a process recovery.

Van Ossel et al (2003) argued that the communication of a process recovery might increase customer loyalty. Customer loyalty is often researched as an outcome of the service recovery process, measured as one "loyalty"-construct which combines repurchase intent- and word-of-mouth-variables into one construct (e.g. De Ruyter and Wetzels, 2000) or as repurchase intent and word-of-mouth separately (E.g. Maxham, 2001). We follow Söderlund (2006), who argued that loyalty is best measured using repurchase intent and word-of-mouth separately. In a product setting, Rust et al (1999) predicted that by reducing a consumer's uncertainty regarding perceived product quality, the chance of increased purchase likelihood rises substantially. Since process recovery is about preventing future failures, communicating the process recovery efforts to the complaining customer might give him or her some sort of reassurance that a similar failure will not occur again during the next purchase, and as such, reduces the complaining customer's uncertainty regarding the stability of the service. In addition, research by Folkes (1984; 1988) and Smith and Bolton (1998) found higher repurchase intentions for customers, who believed that the failure will not happen again, which might be an indication that:

H1c: Complaining customers who received the communication of a process recovery will have higher repurchase intent than customers who did not receive the communication of a process recovery.

Past research has been indicating that an excellent customer recovery can increase positive word-of-mouth, as customers tell family and friends about their positive experience (e.g. Maxham, 2001). Van Ossel et al (2003) suggested that the communication of a process recovery might yield positive word-of-mouth recommendations as well. Therefore, we expect that:

H1d: Complaining customers who received the communication of a process recovery will have higher word-of-mouth intentions than customers who did not receive the communication of a process recovery.

2.2. Interaction between customer and process recovery

The literature distinguishes three levels of customer recovery: First, a customer might receive no reaction from the company at all, leading to a greater dissatisfaction (e.g. Clark et al, 2001). Second, the employee dealing with the customer's complaint might display maladaptive and unhelpful behaviour, leading to more customer dissatisfaction (e.g. Bowen and Johnston, 1999; Liao, 2007). Third, if the company handles the customer's complaint well, this might restore the customer's satisfaction (e.g. Maxham, 2001; De Ruyter and Wetzels, 2000; Wirtz and Mattila, 2004), which in some cases might even produce a higher level of satisfaction in comparison to a situation in which no failure occurred (e.g. de Matos et al, 2007; Michel and Meuter, 2008).

The two first situations, in which a customer does not receive any response, or receives an unsatisfactory response to his/her complaint, are often referred to as a double deviation effect,

in which the company's (lack of) response only produces greater dissatisfaction (Bitner et al, 1990). In their research on how to offset a double deviation effect, Johnston and Fern (1999) found that customers wanted a written assurance that "it would not happen again", in order to be satisfied again. Their findings indicate that the communication of a process recovery might increase the complaining customer's evaluations, even after a dissatisfying customer recovery.

In the third level of customer recovery, in which a customer receives a satisfactory customer recovery, a study by Ok et al (2007) found that any additional effort following an excellent customer recovery did not substantially increase the customers' evaluations of a service provider due to the occurrence of a ceiling effect (i.e. a positive improvement is hardly attainable because of very little margin or even no margin to improve). This might be an indication that the effectiveness of communicating a process recovery differs depending on the level of customer recovery a complaining customer already received, which leads to the following hypothesis:

H2: The impact of a process recovery communication on customer evaluations (satisfaction with service recovery, overall satisfaction, repurchase intent, word-of-mouth) is larger for complaining customers who received no or an unsatisfactory customer recovery than for customers who received a satisfactory customer recovery.

2.3. Type of communication

Organizations can communicate with customers in various ways, by using one-to-one and one-to-many communications. It would therefore be interesting to assess whether differences in effectiveness of communicating process recoveries might occur depending on the use of a personal letter or a general brochure to convey the message. This decision might be important, as the costs associated with personal communication per reached person are much higher than

costs for one-to-many communication; while on the other hand, the attention value for one-to-one communication is higher than for one-to-many communication (De Pelsmacker et al, 2006). De Wulf et al (2001) indicated that adding a personal touch to communication between a store and its customers is an important aspect in relationship marketing, by e.g. using the customer's name in order to increase customer evaluations. Personalizing communication received extensive attention in the response rates-literature, suggesting that "personalization creates the impression that respondents are receiving the researcher's special attention, which reinforces respondents' self-image" and as a result of social exchange theory, induces the respondent to participate with a survey (Gendall, 2005, pp. 368). In a services context, personalization is also considered as an important issue as it taps into the specific recognition of the customer's uniqueness as an individual instead of his/her status as an anonymous service recipient (Surprenant and Solomon, 1987). As such, we predict that:

H3: The use of one-to-one communication for process recovery communications yields higher customer outcomes (satisfaction with service recovery, overall satisfaction, repurchase intent, word-of-mouth) than the use of one-to-many communication

3. Research design

A 3 (no, unsatisfactory, and satisfactory customer recovery) x 3 (no, one-to-one, and one-to-many process recovery communication) factorial between-subjects design was set up to test our hypotheses, and involved a scenario-based method. A food retail setting was chosen to address our research objectives since (1) consumers are quite familiar with retailers making it easier to imagine the described situation in the scenarios and (2) retailers often communicate with their customers through one-to-one and one-to-many communication such as personalized letters, free coupons, advertising, brochures, etc.

Scenario-based design are frequently used in service recovery research (e.g. Brown et al, 1996; De Ruyter and Wetzels, 2000; DeWitt et al, 2008; Menon and Dubé, 2007; Smith and Bolton, 1998; Smith et al, 1999). Scenarios enable expensive and otherwise difficult manipulations to be operationalised easily, such as the communication of a process recovery, which is the focal research variable in this study^[2]. We followed the suggestion by Bitner (1990) to use real customers in our sample who are randomly assigned to one of the nine experimental conditions to enhance external validity. Respondents were recruited using a random walk-technique in different locations.

3.1. Manipulations

As Gerstner and Libai (2006) noted that an often occurring problem in a retail setting is that customers are overcharged which ultimately results in increased customer defections, we have decided to use a similar failure in our scenarios. Price differences might occur due to the fact that stores advertise discounted prices, but charge another (full) price at the cash register (Goodstein, 1994). This was operationalized due to the fact that the check-out employee forgot to scan price coupons, resulting in a customer overpaying his goods for 3 euro. In the base scenario, we fixed potentially confounding elements, such as failure severity (e.g. Smith et al, 1999), past transactions (e.g. Hess et al, 2003, 2007) and type of relationship with the retailer (e.g. Mattila, 2001). Similar to Brown et al (1996), all respondents were loyal customers to the store.

The customer recovery-levels were structured and manipulated based on findings from previous studies (E.g. Andreassen, 2000; Clark et al; 1992; Liao, 2007). The retailer's unsatisfactory or satisfactory response was manipulated on the four aspects of customer recovery identified by Andreassen (2000): offering an apology and an explanation about what has happened, showing empathy and providing restitution. These aspects were operationalized

using manipulations by Liao (2007). The communication of a process recovery was operationalized by mentioning a respondent received the announcement that the food retailer introduced a new loyalty card, which automatically accounts for the price coupons a customer normally receives at home. Due to this new loyalty card, a check-out employee cannot forget to scan a particular price coupon as it is all bundled into one card, requiring only one scan^[3]. A description of the base scenario and different manipulations can be found in the Appendix.

3.2. *Measurement scales*

Manipulations checks. The manipulation checks for this study included an assessment of the customer recovery-level using Maxham and Netemeyer's (2002) satisfaction with service recovery 7-point scale. The manipulation of the process recovery communication was tested by using a three-item measure developed after a review of literature (Sample item: '*The retailer takes the necessary precautions so this problem cannot occur again in the future*'), which was rated on a 7-point Likert scale. The scenarios' realism was measured using Liao's (2007) 7-point Likert scale.

Covariates. As perceptions of failure severity moderate the expectations and satisfaction of complaining customers (Smith et al, 1999), we included failure severity as a control covariate, measured on a 7-point Likert scale from Maxham & Netemeyer (2002).

Dependent variables. Satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth were measured using the 7-point Likert scales of Maxham and Netemeyer (2002), adapted to our retail setting.

3.3. *Pretests*

A first pretest (between-subjects, n=58) was conducted in order to assure that the failure really caused dissatisfaction by comparing a failure scenario (overpaying 3 euro, without

mentioning any customer recovery or communication of a process recovery) with a control scenario (no failure) in terms of overall satisfaction (measures from Maxham and Netemeyer, 2002). An independent-samples t-test demonstrated that respondents in the failure-group had a significantly lower overall satisfaction ($M= 4.76$; $SD= 1.59$) than respondents in the control group ($M= 6.22$; $SD=0.71$) ($t_{(36,69)}= 4.474$; $p<0.001$).

A second pretest ($n=161$ adult consumers) tested for the effectiveness of the manipulations as for the realism of the used scenarios. The manipulation of the level of customer recovery, was found successful ($F_{(2,263)} = 26.996$, $p<0.001$) A satisfactory customer recovery ($M= 5.81$; $SD= 1.22$) led to a significantly higher satisfaction with service recovery than no customer recovery ($M= 3.82$, $SD= 1.84$) and an unsatisfactory customer recovery ($M= 3.54$; $SD= 1.92$). The manipulation for the communication of a process recovery was also found successful ($F_{(2,263)}= 13.574$, $p<0.001$), as respondents felt more assured that the failure will not occur again when they received the communication of a process recovery (one-to-one: $M= 5.19$; $SD= 1.16$; one-to-many: $M= 5.27$; $SD= 1.56$) in comparison to those respondents who did not ($M= 2.82$; $SD= 1.77$). Finally, one-sample t-tests revealed that all scenarios were found realistic (all p -values ≤ 0.032), easy to comprehend (all p -values ≤ 0.001) and easy to imagine (all p -values < 0.001).

4. Main study

4.1. Sample

266 adult consumers participated in this research (47.9% male, 52.1% female), with 27-35 respondents in each of the nine conditions. The mean age was 39.97 years ($SD= 12.59$); and 82.2% of our sample visited a food retailer at least once a week. Furthermore, 61.5% of respondents were the main responsible for grocery shopping in their family. Respondents in each experimental condition did not differ significantly on gender ($\chi^2_{(8)}= 7.172$, $p= 0.518$), age

($F_{(8;257)}= 1.951, p= 0.053$), frequency of food retail store visits ($\chi^2_{(32)}= 33.177, p= 0.410$), being main responsible for grocery shopping in their family ($\chi^2_{(8)}= 3.912, p= 0.865$), and which retailer they visited most often ($\chi^2_{(48)}= 54.961, p= 0.228$).

4.2. *Manipulation checks and scenario realism*

As expected, the manipulation of the level of customer recovery groups was found successful ($F_{(2,263)}= 78.241, p<0.001$), as customers in the satisfactory customer recovery-conditions had a significantly higher satisfaction with service recovery ($M= 6.20; SD= 1.03$) in comparison with respondents in the two dissatisfying customer recovery-conditions (Unsatisfactory customer recovery: $M= 3.38; SD= 2.05$; no customer recovery: $M= 3.64, SD= 1.86$). Next, the manipulation of a process recovery was also found successful ($F_{(2,263)}= 131.628, p<0.001$), as respondents in the process recovery communication-condition indicated they had a significantly higher belief that the failure would not occur again (one-to-one: $M= 5.93; SD= 1.05$; one-to-many: $M= 5.84; SD= 1.84$) in comparison to customers who did not receive the communication of a process recovery ($M= 3.14, SD=1.75$). Finally, each scenario was found significantly realistic (all p -values <0.001), and the average realism-perceptions did not differ significantly between the different scenarios ($F_{(8,257)}= 0.811, p= 0.59$).

4.3. *Reliability and discriminant validity*

Satisfaction with service recovery (Cronbach's $\alpha= 0.898$), overall satisfaction with the service provider (Cronbach's $\alpha= 0.863$), repurchase intent (Cronbach's $\alpha= 0.890$), word-of-mouth (Cronbach's $\alpha= 0.956$) and failure severity (Cronbach's $\alpha= 0.872$) demonstrated sufficient reliabilities, exceeding the 0.70 cut-off point (Hair et al, 2006).

To ensure discriminant validity between all constructs, we performed a confirmatory factor analysis on the four dependent variables ($\chi^2= 153.79; df= 48; \chi^2/df= 3.20; GFI= 0.91; CFI=$

0.99). Discriminant validity is achieved when a χ^2 -test reveals that two constructs are not perfectly correlated (Steenkamp and Van Trijp, 1991), and was assessed by specifying the correlation between two constructs at a time as equal to one and assessing whether there were significant differences in χ^2 between the unconstrained and constrained model (Anderson and Gerbing, 1988). The lowest χ^2 -value obtained from a constrained model was 202.38, suggesting discriminant validity of our dependent variables. As a result of both reliability and discriminant validity assessments, an average score of each item was calculated for use in subsequent analysis.

4.4. *Research Findings*

A MANCOVA was used to test the hypotheses, using failure severity as a covariate. The mean ratings for the dependent variables in terms of main effects and interaction effects are listed in Table 1, and the MANCOVA results are shown in Table 2.

The covariance analysis (Table 2) indicates that failure severity significantly influences all dependent variables (satisfaction with service recovery, overall satisfaction, repurchase intent, and word-of-mouth) at the multivariate (*Wilk's Λ* = 0.948, $F_{(4,261)} = 3.407$, $p = 0.010$) and univariate level (p -values ranging between <0.001 and 0.047). As such, the results in the remainder of this study are each time obtained using MANCOVA with failure severity as covariate. However, it is important to note that the impact and significance of our focal main effects as well as interaction effects (e.g. Table 1 and Table 2) did not change when using a MANCOVA with failure severity as a covariate in comparison to a MANOVA where failure severity was not included.

We hypothesized that communicating process recoveries back towards complaining customers might yield higher satisfaction with service recovery (H1a), overall satisfaction

(H1b), repurchase intent (H1c) and word-of-mouth (H1d) in comparison to complaining customers who did not receive this communication. At a multivariate level, the main effect of communicating process recoveries was found significant (*Wilk's A* = 0.743, $F_{(8,257)} = 9,955$, $p < 0.001$) with acceptable effect size (= 0.138) and perfect power (= 1.000). At a univariate level, the communication of a process recovery had a significant impact on all dependent variables (all p -values < 0.001 , see Table 1, Column 3), as well as acceptable effect sizes (ranging between 0.134 and 0.199) and perfect power (=1.000). As postulated, communicating process recoveries yields significant higher satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth, regardless of the use of one-to-one or one-to-many communication. Our findings provide full support for Hypotheses 1a to 1d.

Insert Table 1 about here
Insert Figure 1 to 4 about here

Insert Table 2 about here

Hypothesis 2 proposed that the impact of process recovery communications on customers' evaluations of the service provider (satisfaction with service recovery, overall satisfaction, repurchase intent, and word-of-mouth) would be larger for complaining customers who received no or an unsatisfactory customer recovery in comparison to complaining customers who received a satisfactory customer recovery. Although we did not find statistical significance at a multivariate level (*Wilk's A* = 0.917, $F_{(16,249)} = 1.370$, $p = 0.149$), at a univariate level, significant results were found for satisfaction with service recovery, repurchase intent and word-of-mouth (p -values < 0.024), whereas the interaction-effect was only found to be marginally significant for overall satisfaction ($p = 0.067$).

The univariate results in Table 1 (Columns 4 to 6) denote that the increases in the four dependent variables (satisfaction with service recovery, overall satisfaction, repurchase intent,

and word-of-mouth) in the no customer recovery and the unsatisfactory recovery conditions are all highly significant (p -values <0.001), whereas in the satisfactory customer recovery condition, this increase is only significant for satisfaction with service recovery and overall satisfaction when one-to-one process recovery communication was used. Increases in repurchase intent and word-of-mouth were not significant for this latter group.

When comparing effect sizes across the three levels of customer recovery for each dependent variable, it is noteworthy that the effect sizes are each time lowest for the satisfactory customer recovery group. As such, we find support for Hypothesis 2, which postulated that the increases in the dependent variables would be greatest for the no and unsatisfactory customer recovery-group.

Our third hypothesis stated that the use of one-to-one communication would yield higher customer outcomes (satisfaction with service recovery, overall satisfaction, repurchase intent, and word-of-mouth) than one-to-many communication. The means of the process recovery communications-factor were compared using a Bonferroni test (Table 1, significant differences are denoted by ^a, ^b). Notwithstanding the fact that the absolute mean values are highest for one-to-one communications, there is no significant difference between the use of one-to-one or one-to-many communication when solely considering the main effects (Table 1, Column 3). However, when considering different levels of customer recovery (no, unsatisfactory and satisfactory) (Table 1, Columns 4 to 6), we observe significant differences within the satisfactory customer recovery group (Table 1, Column 6). In case the customer received a satisfactory customer recovery, only the use of one-to-one communication significantly yields higher customer outcomes than not communicating process recoveries for satisfaction with service recovery and overall satisfaction. The use of one-to-many communication did not yield higher satisfaction with service recovery and overall satisfaction

when compared to customers who did not receive the communication of a process recovery. Finally, the use of one-to-one or one-to-many communications did not yield enhanced customer outcomes in terms of repurchase intent and word-of-mouth. Hence, we find partial support for Hypothesis 3.

5. Discussion

5.1. Summary of results

The objective of this research was to introduce a more comprehensive service recovery approach by communicating process recoveries back to the complaining customer. The extant service recovery literature focussing on customer outcomes has mainly investigated the impact of customer recovery efforts, whereas the impact of communicating subsequent process improvements on customer outcomes has been left unexplored, despite its importance and suggestions by several authors (e.g., Boshoff, 1999; Grönroos, 2007; Hart et al, 1990; Van Ossel et al, 2003).

Overall, our findings highlight the benefits of communicating process improvements to complaining customers since these communications enhance customers' satisfaction with service recovery, overall satisfaction, repurchase intent and word-of-mouth (providing support for H1a, H1b, H1C, and H1d). Also, considering the main effects (Table 1, Column 3), the beneficial impacts of process recovery communications on the former four outcome variables were not found to differ significantly between one-to-one versus one-to-many communications.

When distinguishing between different levels of customer recovery a complaining customer received (no, unsatisfactory, or satisfactory customer recovery), our findings relating to the consequences of process recovery communications even become more interesting. The

aforementioned findings still hold for the groups of customers who didn't receive a customer recovery or perceived this recovery as unsatisfactory. In contrast, for the individuals who experienced a satisfactory customer recovery we found that only one-to-one communications are likely to enhance satisfaction with the service recovery and overall customer satisfaction whereas the other two outcome variables (purchase intent and word-of-mouth) were not significantly affected. As such, the impact of a process recovery communication on customer outcomes is larger for complaining customers who received no or an unsatisfactory customer recovery than for customers who received a satisfactory customer recovery (providing support for H2). In this context it is important to remark that satisfaction with service recovery and overall satisfaction can be classified as "backward-looking perceptions", as they form a summary of what they customer has encountered until now, whereas repurchase intent and word-of-mouth are "forward-looking perceptions", which question the respondents' future intentions (e.g., Gustafsson et al, 2005). Our findings indicate that this distinction between forward and backward-looking perceptions in the analysis of service recovery communications might be important.

Finally, considering the magnitude of estimates for all outcome variables (satisfaction with service recovery, overall satisfaction, purchase intent, and word-of-mouth) for the no and unsatisfactory customer recovery group (Table 1), it is clear that the observed values are much lower than these for the satisfactory customer recovery group even if the former two groups received a process recovery communication. In contrast, the satisfactory customer recovery group already report high values for all dependent variables without process recovery communications, and as a consequence, only one-to-one communications were found to significantly increase some outcome variables (providing partial support for H3).

5.2. Managerial implications

For both researchers and managers it is very valuable to acknowledge these findings regarding the communication of process recoveries. First, our results imply that whenever a company has improved its processes based on the input of customer complaints, communicating these process recoveries back to the complaining customers might result in increased satisfaction with service recovery, overall satisfaction, repurchase intent and positive word-of-mouth. Another implication stems from the interaction with the different levels of customer recovery the complaining customer has received earlier in the service recovery process. Given the fact that only few companies succeed in restoring complaining customers' evaluations of a service provider through customer recovery procedures (Johnston and Michel, 2008; Michel et al, 2009), our findings suggest that through the communication of process recoveries, the negative evaluations following no or an unsatisfactory customer recovery might be overcome part of the potential negative customer outcomes caused by service failures and failed recoveries.

Third, our results suggest that companies might use one-to-one communication or one-to-many communication interchangeably, as the customer outcomes did not differ substantially in terms of repurchase intent and word-of-mouth. However, in case the company already provided a satisfactory customer recovery, the use of one-to-one communication might be advisable in order to enhance satisfaction with service recovery and overall satisfaction-perceptions as the use of one-to-many communication did not significantly increase satisfaction with service recovery and overall satisfaction in comparison with not communicating the process improvement.

5.3. Limitations and future research

Although our study contributes to the service recovery literature by proposing how the communication of a process recovery towards a complaining customers reduces tensions between customer and process recovery perspectives (Michel et al, 2009), some limitations remain.

A scenario-based experimental design was used to induce service failure and recovery. Respondents were given a hypothetical scenario about service failure and customer recovery efforts as well as process recovery communications and were asked to respond to series of questions. Although we assessed the realism of the used scenarios in a pretest as well as the main study, a discrepancy could exist between actual experiences and hypothetical scenarios. Thus, the scenario could cause an external validity issue concerning the results of this study. Further research might therefore explore the impact of process recovery communications by relying on real complaint data obtained from a field experiment. In this context, the investigation of actual behavioral data (e.g. churn, repeat purchase behavior) instead of perceptual outcome variables also represents a fruitful area for further research.

Second, our empirical insights are based only on one research setting (retailing) which limits the generalizability of our results. This limitation creates an opportunity to test similar applications in other settings and contexts.

Finally, in a recent research paper, Challagalla et al (2009) distinguished proactive and reactive post-sales service. While in this paper we treated the communication of a process recovery as a reactive post-sales service strategy as it follows a complaint, future research might consider this communication as a proactive post-sales service by informing non-complaining customers (i.e. customers who experienced the service failure, but decided not to complain as well as customers who did not experience the service failure) about the process recovery.

¹ Johnston and Michel (2008) identified three types of service recovery: customer recovery, process recovery and employee recovery. Employee recovery is not considered further, since our research focuses on the external customers and employee recovery is more directed towards internal customers (Bowen and Johnston, 1999).

² Advantages and disadvantages of a scenario-based method in service recovery research can be found in Bitner (1990), Michel (2001) and Smith et al (1999).

³ Such process improvement was recently introduced by a large Belgian food retailer, enhancing realism for our process recovery.

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Appendix: Scenarios and manipulations

Base scenario

-
- Loyal customer to the store
 - Overpaid 3 euro
 - Check-out clerk forgot to scan price coupon
 - Person responsible for complaints was not available
 - Promise to call back the next day

Customer recovery-manipulations

<i>No</i>	<i>Unsatisfactory</i>	<i>Satisfactory</i>
<ul style="list-style-type: none"> - Respondent does not receive any reaction from the retailer 	<ul style="list-style-type: none"> - Employee calls the next day - No apology - No explanation - Becomes rude and impolite - No restitution of overcharged amount 	<ul style="list-style-type: none"> - Manager calls the next day - Apology - Explanation - Shows empathy - Restitution of overcharged amount

Process recovery communication-manipulations

<i>No</i>	<i>One-to-one</i>	<i>One-to-many</i>
<ul style="list-style-type: none"> - (not applicable) 	<ul style="list-style-type: none"> - “Some time later” - Personal letter - Process recovery: all-in-one loyalty card - “Partly based on your complaint,...” 	<ul style="list-style-type: none"> - “Some time later” - Brochure - Process recovery: all-in-one loyalty card - “Based on a number of complaints,...” without explicit referral to the customer

Table 1: Main and interaction effects: Means, Standard Deviations, F-Values, Effect Sizes and Power

		Main Effects (H1a,b,c,d) (H3) (n=266)	Interaction-effect (H2)		
			No Customer Recovery (n=85)	Unsatisfactory Customer Recovery (n=86)	Satisfactory Customer Recovery (n=95)
Satisfaction with service recovery (DV 1)	No PRC	3.42 (2.14) ^a	2.21 (1.19) ^a	2.18 (1.54) ^a	5.71 (1.24) ^a
	PRC one-to-one	5.18 (1.81) ^b	4.70 (1.44) ^b	3.98 (2.03) ^b	6.55 (0.59) ^b
	PRC one-to-many	4.81 (1.99) ^b	4.12 (1.91) ^b	4.06 (2.05) ^b	6.25 (1.04) ^{a,b}
	F ₍₁₎	31.387***	17.473***	8.996***	6.113**
	Effect Size	0.199	0.304	0.182	0.121
	Power	1.000	1.000	0.969	0.878
Overall satisfaction (DV 2)	No PRC	4.10 (1.78) ^a	3.28 (1.71) ^a	3.10 (1.67) ^a	5.80 (1.19) ^a
	PRC one-to-one	5.55 (1.03) ^b	5.35 (1.10) ^b	4.73 (1.27) ^b	6.40 (0.59) ^b
	PRC one-to-many	5.12 (1.61) ^b	4.65 (1.56) ^b	4.38 (1.58) ^b	6.33 (0.86) ^{a,b}
	F ₍₁₎	26.247***	12.597***	9.408***	4.154*
	Effect Size	0.172	0.239	0.189	0.085
	Power	1.000	0.996	0.975	0.719
Repurchase intent (DV 3)	No PRC	4.20 (1.97) ^a	3.53 (1.78) ^a	3.13 (1.77) ^a	5.84 (1.07) ^a
	PRC one-to-one	5.51 (1.32) ^b	5.55 (1.03) ^b	4.74 (1.56) ^b	6.12 (0.96) ^a
	PRC one-to-many	5.20 (1.59) ^b	5.00 (1.42) ^b	4.44 (1.79) ^b	6.17 (0.95) ^a
	F ₍₁₎	19.437***	10.893***	7.245**	n.s.
	Effect Size	0.134	0.214	0.152	0.019
	Power	1.000	0.989	0.927	0.196
Word-of-mouth (DV 4)	No PRC	3.47 (1.97) ^a	2.95 (1.74) ^a	2.08 (1.29) ^a	5.25 (1.28) ^a
	PRC one-to-one	5.06 (1.44) ^b	4.96 (1.15) ^b	4.25 (1.60) ^b	5.80 (1.14) ^a
	PRC one-to-many	4.47 (1.79) ^b	4.42 (1.53) ^b	3.36 (1.78) ^b	5.64 (1.28) ^a
	F ₍₁₎	25.743***	10.039***	13.804***	n.s.
	Effect Size	0.170	0.201	0.254	0.036
	Power	1.000	0.982	0.998	0.346

Notes:

*** p<0.001; ** p< 0.01; * p<0.05

Different letters ^{a,b} delineate significant differences in pairwise comparisons

DV= Dependent variable; PRC= Process Recovery Communication

Table 2: MANCOVA results (n=266)

Source	Multi- variate: Wilks Λ	F	df	Univariate F: Satisfaction service recovery	Univariate F: Overall satisfaction	Univariate F: Repurchase intent	Univariate F: Word-of- mouth
Severity	0.948	3.407**	4	3.988*	5.849*	13.522***	8.916**
CR	0.517	24.359***	8	88.692***	62.261***	42.178***	57.342***
PRC	0.743	9.955***	8	31.387***	26.247***	19.437***	25.743***
CR*PRC	0.917	1.370	16	2.862*	2.224 ^a	3.003*	2.951*

Notes:

*** p<0.001; ** p< 0.01; * p<0.05

CR= Customer Recovery; PRC= Process Recovery Communication

^a: The interaction-effect on overall satisfaction was marginally significant (p=0.067)

Figure 1: Interaction-effect satisfaction with service recovery

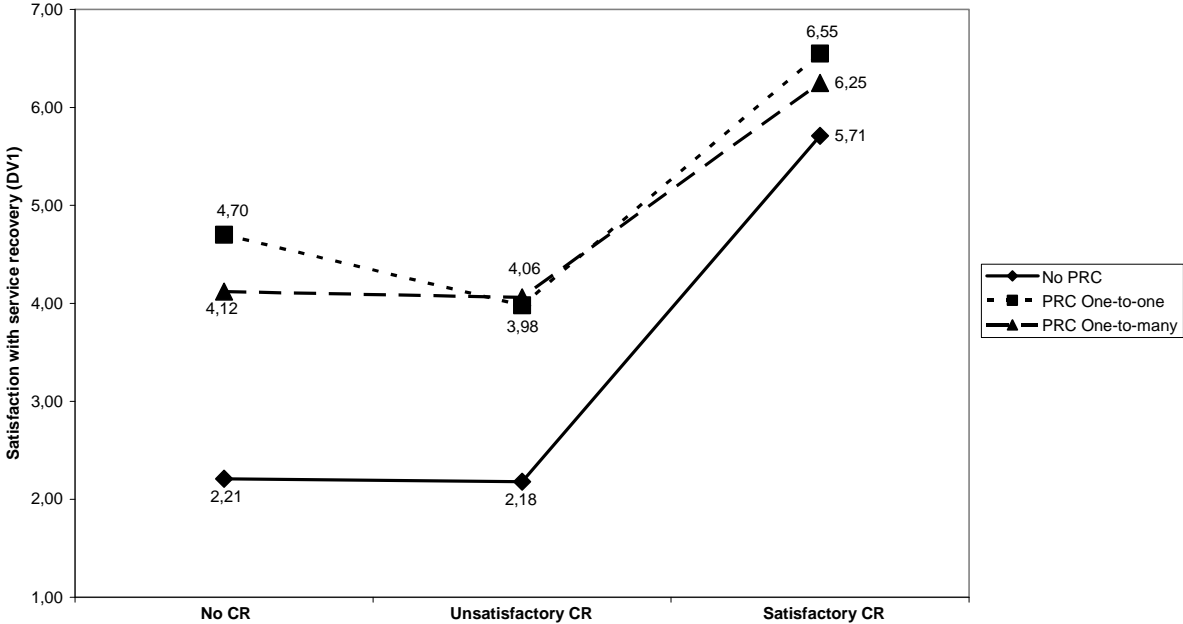


Figure 2: Interaction-effect overall satisfaction

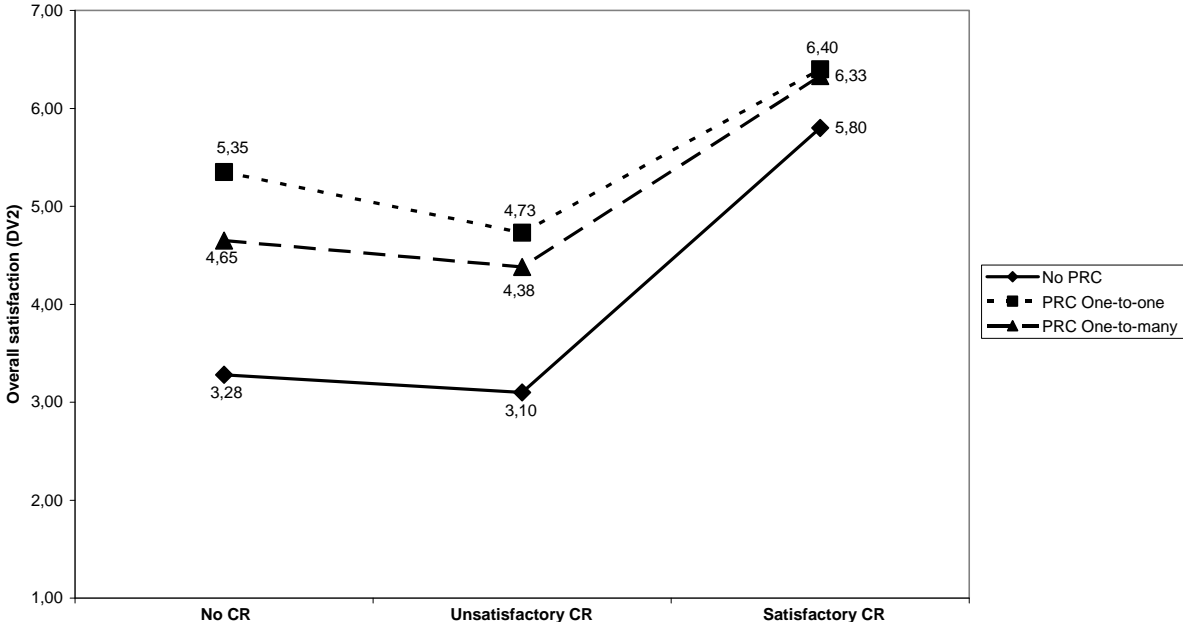


Figure 3: Interaction-effect repurchase intent

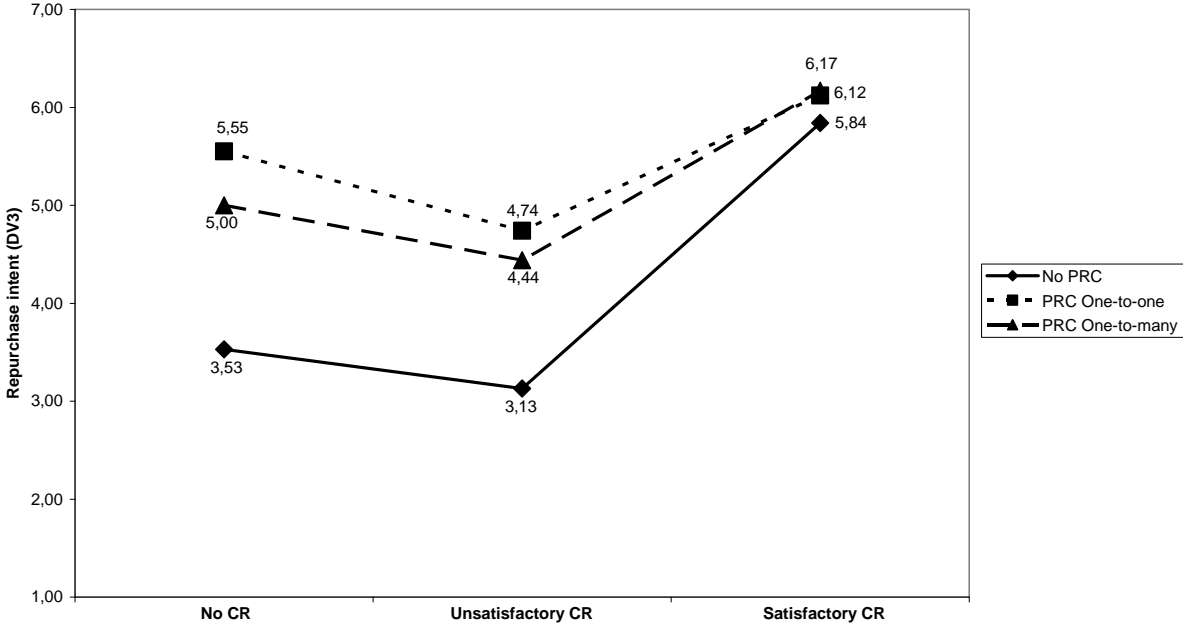


Figure 4: Interaction-effect word-of-mouth

