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EXPLORING THE SERVICE RECOVERY PARADOX[*]

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ABSTRACT

Service recovery paradox refers to situations where satisfaction of recovered customers actually exceeds that of customers who have not encountered any problems with the initial service. The growing debate on the existence of a service recovery paradox has not yet reached a conclusion. Based on interviews with more than 11,000 customers of a bank, our results lead to the conclusion that a very satisfying initial service is what is most preferred. Nevertheless, a very good service recovery leads to higher overall satisfaction and more positive word-of-mouth intention than an error-free initial service which is "just" satisfying.

SERVICE RECOVERY PARADOX

Service recovery has gained increasing attention in services marketing literature in recent years (e.g. Tax et al. 1998; Smith et al. 1999; McCollough et al. 2000; Andreassen 2001; Swanson and Kelley 2001). Since service failure leads to negative disconfirmation and to dissatisfaction, it is suggested that appropriate service recovery can restore a dissatisfied customer to a state of satisfaction. A early definition of service recovery was suggested by Grönroos (1988): "Service recovery refers to the actions a service provider takes in response to service failure." More recently, Smith et al. (1999) treat "service recovery as a 'bundle of resources' that an organization can employ in response to a failure." Service recovery differs from complaint management in its focus on service failures and the company's immediate reaction to it. Complaint management is based on customer complaints that may be triggered by service failures. However, since most dissatisfied customers are reluctant to complain (Andreasen and Best 1977; Singh 1990), service recovery attempts to solve problems at the service encounter before customers complain or before they leave the service encounter dissatisfied (Lewis 1996). Both complaint management and service recovery are considered to be customer retention strategies (Halstead et al. 1996).

The term "recovery paradox" (McCollough and Bharadwaj 1992) refers to situations where satisfaction and repurchase rates of recovered customers actually exceed those of customers who have not encountered any problems (Blanchard 1993; Oliver 1996).

LITERATURE REVIEW

The growing debate on the existence of a service recovery paradox has not yet reached a conclusion. In one of the earliest studies concerning service recovery, Berry et al. (1990) found that service quality is highest when no failure happened. If a failure is resolved satisfactorily, about half of the loss on the satisfaction score can be recovered. Remarkably, this is one of the rare studies in the field that used actual customers (not students) as respondents, who evaluated a real-life service encounter (as opposed to a written scenario) where dissatisfied customers and a control group were compared (not only complainers and non-complainers). The existence of a service recovery paradox was further denied (by Halstead and Page 1992; Brown et al. 1996; Boshoff 1997; McCollough et al. 2000, and Andreassen 2001) in various settings. Most of these authors conclude that there is no way to please customers more than with a reliable, first-time error-free service. According to these findings, service recovery is considered a strategy to limit the harm caused by a service failure rather than to impress the customer with a special effort when something goes wrong. Nevertheless, a positive impact of service recovery on dependent variables such as satisfaction, image, and loyalty is still suggested.

Based on almost 700 critical incidents from the airline, hotel and restaurant industries, Bitner et al. (1990) concluded that failures could be remembered as highly satisfactory encounters if they were handled properly.

In summary, results of empirical studies on service recovery paradox are not only contradictory but also difficult to compare. Discrepancies result from differences in (a) research methodology, (b) the incidents in question, and (c) the dependent variable.

(a) Using scenario-based experiments is common in studying service recovery (Boshoff 1997; Brown et al. 1996; Dubé and Maute 1996; Kelley and Davis 1994; McCollough et al. 2000; Smith and Bolton 1998; Smith et al. 1999; Swanson and Kelley 2001; Webster and Sundaram 1998). Although external validity is claimed for this methodology, the service recovery paradox effect may be underestimated. Experimental situations are more cognitively controlled, and the respondents are not involved emotionally as they would be in real-life settings. Assuming that emotions do play an important role in recovery situations (Dubé and Maute 1995), respondents may conclude logically that a good service in the first place has to be better than a recovered failure. Because of this logic, the term "paradox" has been coined.

(b) The service recovery process starts with customer dissatisfaction and not with a customer complaint. Complaint handling is only one aspect of service recovery, since most dissatisfied customers do not complain (Andreasen and Best 1977; Singh 1990). If complainers are compared to non-complainers, service recovery paradox is more likely to be found. It can be assumed that dissatisfied customers in the non-complainer group diminish overall satisfaction and loyalty, whereas complainers are often highly involved and may reward service recovery particularly well. Therefore, very successful complaint handling may exceed the increase in the level of satisfaction and loyalty above average. Consequently, studies on service recovery paradox should not be based on complaining customers, but on dissatisfied customers who must be compared to satisfied customers.

(c) Several suggestions for the dependent variable of the service recovery paradox have been put forward in the literature. Some researchers argue that service recovery will impact satisfaction (Andreassen 2000; Boshoff 1997; McCollough et al. 2000; Smith et al. 1999), service quality (Berry et al. 1990), loyalty (Chung and Hoffman 1998), repurchase intention (Halstead and Page 1992), positive word-of-mouth behavior (Swanson and Kelley 2001), image (Andreassen 2001), commitment and trust (Bejou and Palmer 1998; Tax et al. 1998), and combinations of those constructs (Dubé and Maute 1996; Smith and Bolton 1998; Spreng et al. 1995; Webster and Sundaram 1998).

Moreover, satisfaction as well as loyalty is not defined uniformly across the studies. Regarding satisfaction, either transaction-specific satisfaction or overall satisfaction is concerned. Loyalty, on the other hand, is measured as intended loyalty, word-of-mouth behavior, or repurchase behavior.

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The following overview provides a comprehensive picture of the proposition that service recovery studies hold more dissimilarities than similarities.

SATISFACTION

Satisfaction as a construct is commonly defined by the expectancy disconfirmation paradigm (Oliver 1980), by equity theory (Oliver and Swan 1989a), or by attribution theory (Weiner 1986). However, it is justified to focus on the expectancy disconfirmation paradigm, since it dominates the literature and is able to integrate the other two approaches (Stauss 1999).

In the simple model suggested by Oliver (1996), satisfaction results from expectations and from disconfirmation. If expectations are met or exceeded, positive disconfirmation leads to satisfaction. On the other hand, if expectations are not met, negative disconfirmation leads to dissatisfaction.

In service recovery research, there is not just one but at least two evaluation phases. As Oliver (1996) puts it: "Bear in mind, however, that recovery is necessitated by dissatisfaction". Service recovery starts, by definition, with initial customer dissatisfaction. After this first evaluation, customers go through a recovery process leading to a second evaluation. In a study with 410 complaining customers of an interstate moving company, Spreng et al. (1995) found that satisfaction with recovery has more impact on intention and word-of-mouth than satisfaction with the initial service. Parasuraman et al. (1991) argue that service-failure situations tend to raise customers' adequate service level temporarily, thereby narrowing the zone of tolerance. The service recovery process is important because of lower expectations and higher zone of tolerance. Additionally, a study by Andreassen (2000) revealed that disconfirmation rather than expectations have a dominant impact on satisfaction.

The impact of service recovery performance on satisfaction is assessed on two different levels. Service recovery affects encounter satisfaction (McCollough et al. 2000; Smith et al. 1998) as well as overall satisfaction with the company (Brown et al. 1996).

While the impact of recovery performance on encounter satisfaction is well documented in the literature, (Brown et al. 1996) are one of the few, if not the only, researchers who tested for the link between recovery performance and overall satisfaction. Their findings suggest that service recovery is important for encounter satisfaction but does not improve long-term-oriented measures. This is contrary to the assumption that overall satisfaction is based on an accumulation of encounter-specific evaluations (DeSarbo and Oliver 1988). According to the concept of "zone of tolerance" (Johnston 1995b; Zeithaml et al. 1993), recovery performance that exceeds desired expectations (Parasuraman et al. 1991) develops customer franchise. (Johnston 1995b) suggests that incursion above the zone of tolerance (e.g., state of delight) will result in high satisfaction, while performances within the zone of tolerance may not be noticed. This suggests that a service recovery paradox is likely to occur for

excellent recoveries compared to mediocre error-free service transactions, but not compared to excellent error-free service transactions.

Therefore, we hypothesize

H1a: Customers who experienced a service failure followed by a recovery which was *much better* than expected do not show higher *overall satisfaction* rates than customers who report an error-free and *very satisfying transaction* in the first place.

H1b: Customers who experienced a service failure followed by a recovery which was *much better* than expected show higher *overall satisfaction* rates than customers who report an error-free and just *satisfying transaction* in the first place.

WORD-OF-MOUTH

Not only will positive disconfirmation with service recovery increase overall satisfaction but also positive word-of-mouth (Spreng et al. 1995; Swanson and Kelley 2001). For example, a study by (Oliver and Swan 1989b) shows strong links from satisfaction with complaint handling to word-of-mouth behavior. That means that customers who were recovered successfully recommend the company to others. This is important since many services possess credence qualities (Zeithaml and Bitner 1996), and since word-of-mouth communication can have an extremely powerful influence on the consumer purchasing process (Richins 1983). In correspondence to the proposed effect on overall satisfaction, we hypothesize that

H2a: Customers who experienced a service failure followed by a recovery which was *much better* than expected show higher *recommendation intentions* than customers who report an error-free and *very satisfying transaction* in the first place.

H2b: Customers who experienced a service failure followed by a recovery which was *much better* than expected show higher *recommendation intentions* than customers who report an error-free and *just satisfying transaction* in the first place.

PERCEIVED JUSTICE

Recent contributions have shown that perceived justice is a significant construct for evaluating service recovery (Smith et al. 1999; Tax et al. 1998). When perceived justice is high, customers feel fairly treated by the service company. Whenever customers report a service failure, it must be assumed that this failure is, to some extent, an "unfair" treatment of the customer. Hence, service recovery must reestablish a situation of fairness in the perception of the customer.

Clemmer and Schneider (1996) revealed that the justice concept consists of three dimensions: distributive justice, procedural justice, and interactional justice. Distributive justice focuses on the allo-

cation of benefits and costs (Deutsch 1985). Customers consider the benefit they received from a service in the light of the cost associated with the service (money, time, etc.). Procedural justice does not focus on the results of a transaction, but rather on the process by which the results are obtained (Lind and Tyler 1988). Finally, interactional justice considers interpersonal fairness. Since our study was based neither on scenarios nor on written complaint letters, the variety of justice aspects was very broad. As a consequence, only very general items could be used in the survey. For distributive justice, we asked whether the service recovery solution was satisfactory. Procedural justice was measured by response speed (Smith et al. 1999), whereas interactional justice was dropped because many service failures and recoveries were not based on personal interaction.

According to economic principles and everyday experiences, customers who received greater benefit to lesser costs are more satisfied. Hence, distributive justice will enhance positive disconfirmation with service recovery.

But the outcome of a service recovery is not the only thing that matters. Since customers are present at most service encounters, timing is also important. Customers do not want to wait for a service, they prefer a quick response to their request (Bitner et al. 1990; Parasuraman et al. 1985; Taylor 1994). This is especially true for situations in which something has gone wrong. Accordingly, complaint literature has identified speed as an important factor of procedural justice (Clemmer and Schneider 1996; Tax et al. 1998). Since speed is an aspect of procedural justice, and since justice is supposed to influence customer satisfaction positively, we hypothesize that a speedy recovery will enhance positive disconfirmation with service recovery. Hence,

H3a: Distributive justice (solution provided) and procedural justice (speed of recovery) have a positive impact on disconfirmation with service recovery.

Satisfaction research indicates that not all satisfaction factors possess a linear impact on dependent measures such as overall satisfaction, quality and loyalty. (Oliver 1996) distinguishes between three categories. Monovalent satisfiers have a positive impact when expectations are met, while monovalent dissatisfiers have a negative impact when expectations are not met. Bivalent satisfiers are the only factors that may lead to both a negative outcome (when expectations are not met) as well as to a positive outcome (when expectations are met). In similar vein, a study by Cadotte and Turgeon (1988) reveals four groups of factors: dissatisfiers, satisfiers, criticals and neutrals.

Within the context of a service failure, a speedy recovery that leads to a fair solution is a "must have" rather than a "should have" or "nice to have" attribute. Accordingly, distributive justice and procedural justice are assumed to be monovalent dissatisfiers.

H3b: Impact of distributive justice (solution provided) and procedural justice (speed of recovery) on recovery disconfirmation is not linear. Both have a stronger impact on negative than on positive disconfirmation with service recovery.

METHODOLOGY

Despite growing interest in service recovery, methodological problems regarding the measurement of service recovery antecedents, processes and outcomes remain evident. Most empirical work has been done either by collecting actual critical incidents from respondents (Chung and Hoffman 1998; Edvardsson and Strandvik 1999; Johnston 1995a; Kelley et al. 1993), by describing hypothetical scenarios to respondents (Dubé and Maute 1996; Kelley and Davis 1994; Smith et al. 1998), or by using written complaints (Tax et al. 1998).

However, "very little research has directly compared post-recovery satisfaction with consumers who experienced an error-free service…" (McCollough et al. 2000).

Our study overcomes this limitation by using a stratified random sampling of satisfied and dissatisfied customers instead of focusing on dissatisfied or complaining customers only. The survey used is process-oriented rather than dimension-oriented like SERVQUAL. Similar approaches have been suggested by (Botschen et al. 1996; Michel 2001; Stauss and Weinlich 1997). Botschen et al. (1996) introduced the SOPI (sequence-oriented problem identification) research method that includes: (1) blueprinting the sequence of steps that occur in a service encounter, (2) asking customers to provide evaluations for each step they experience in the process of interacting with a service provider or a service-related process, and (3) assessing their responses. Since our main focus is service recovery, the respondents did not evaluate each step in the process. In this respect, we did not follow the SOPI procedure. But we did use blueprints to track the path of the customer's service experience before we asked for specific negative incidents.

The disadvantage of this design for the purpose of studying service recovery lies in its costs. It is difficult to design a survey that encompasses complex blueprints for various processes. And it is expensive to go through all process steps with all respondents. Finally, only a minority will report a service failure, making a multiple over-sampling necessary. As a consequence, this kind of design is efficient only as part of a general service quality and customer satisfaction study, as was the case in our setting.

STUDY

Our study was conducted within the framework of a large-scale service-quality study of a major Swiss bank. After identifying six service core processes, the sampling procedure randomly selected customers of different branches who were involved in at least one of the six processes. 11,929 customers participated in interviews of an average length of 15 minutes. 61.5% of the respondents were male, 38.5% were female. This quota mirrors the distribution of the primary contact person within the customers' households. 12.3% of the respondents were younger than 30, 24.8% were

between 30 and 39, 21.2% were between 40 and 49, 20.6% were between 50 and 59, and 21.1% of the respondents were over 60.

To overcome possible limitations due to recall and time-lag effects, the respective transaction must have taken place no more than eight weeks before the interview. After evaluating overall satisfaction with the bank and its representatives, every step of the service process was checked by means of a questionnaire based on the blueprints for each core process. The many variants of these blueprints led to more than 450 items that could only be handled by interactive interviewing systems.

Whenever a service failure was reported, the interviewer switched to a specific service recovery questionnaire. Since the context of the recovery incident was already known, the customer's perception of the type of failure, and its frequency, magnitude, cause, handling and outcome were assessed. By using this step-by-step questionnaire, the impact of service failures and service recoveries on overall process and outcome satisfaction could be measured against the control group who did not report a service failure.

Customers who reported a failure or error in the core process or in another process during the last twelve months were then asked to specify the failure incident. The following standardized questions were used for this part of the questionnaire:

- Please describe the failure or error in detail. What exactly happened?

- How did the staff react to the incident?

- What reaction did you expect from the staff?

For the present study, failure incidents were only considered if the verbal description was precise enough to comprehend what the failure was. Furthermore, if customers were dissatisfied with bank policies (e.g., interest rates), if they attributed the failure to a third party, or if the service recovery process was still pending, the incident was omitted from further analysis. Satisfaction with recovery speed and recovery solution, disconfirmation with service recovery, overall satisfaction, and intention to recommend were measured by using a 5-point likert scale.

RESULTS

The analyzed sample was split into two main groups with five subgroups each. The first five groups in table 1 are customers who reported a service failure (n=1078). The control group (6 to 10) is defined as customers who did not report a failure (n=8243). The service recovery group was further split according to disconfirmation with service recovery, while the control group was split according to satisfaction with initial (error-free) service.

Table 1 shows the impact of service recovery on the dependent variables "overall satisfaction" and "recommendation intention" for all of the 10 subgroups.

Table 1 *Impact of service recovery and transaction satisfaction on overall satisfaction and recommendation intention*

Means for customer groups

Customer group		Satisfaction with bank (1=very satisfied)	Recommend the bank (1=very likely)
1 Service recovery much better than expected	Mean	1.72	1.52
	N	50	50
	Std. Deviation	.573	.735
2 Service recovery better than expected	Mean	1.99	1.90
	N	105	102
	Std. Deviation	.753	1.000
3 Service recovery as expected	Mean	2.04	2.03
	N	674	659
	Std. Deviation	.770	1.011
4 Service recovery worse than expected	Mean	2.31	2.26
	N	176	171
	Std. Deviation	.880	.923
5 Service recovery much worse than expected	Mean	2.81	2.98
	N	53	53
	Std. Deviation	1.093	1.337
6 w/o failure, very satisfied with process	Mean	1.45	1.46
	N	4562	4489
	Std. Deviation	.575	.738
7 w/o failure, satisfied with process	Mean	1.88	1.72
	N	3491	3408
	Std. Deviation	.558	.817
8 w/o failure, neither satisfied nor dissatisfied with process	Mean	2.16	2.10
	N	279	269
	Std. Deviation	.704	.989
9 w/o failure, dissatisfied with process	Mean	2.24	2.22
	N	90	86
	Std. Deviation	.798	1.162
10 w/o failure dissatisfied with process	Mean	2.42	2.38
	N	36	34
	Std. Deviation	1.079	1.371
Total	Mean	1.71	1.66
	N	9516	9321
	Std. Deviation	.667	.849

In order to test for service recovery paradox, mean differences of four groups are analyzed. Customers within group 1 and 2 perceived service recovery as "much better than expected" or "better than expected" respectively. Customers within group 6 and 7 did not encounter a service failure and were "very satisfied" or "satisfied" with the initial transaction. Figures 1 and 2 show the means for overall satisfaction and recommendation intention respectively.
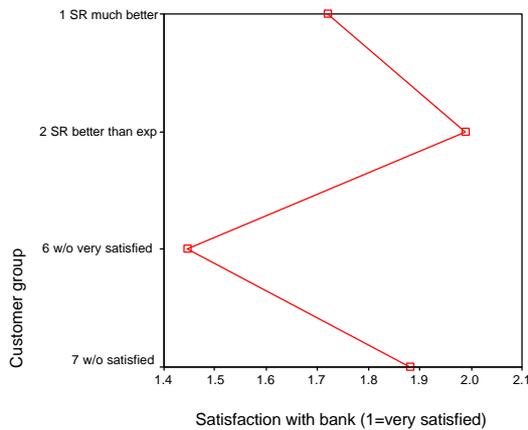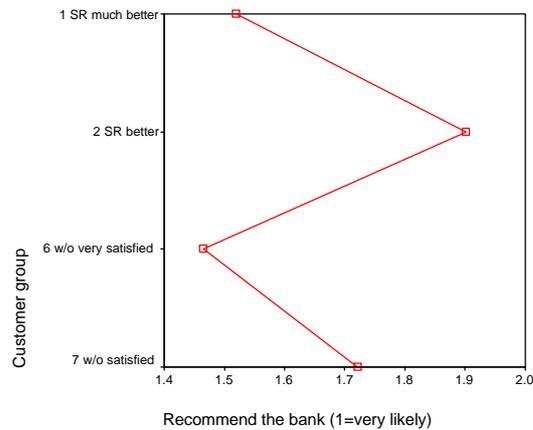
Since the Levene test showed that homogeneity of variances cannot be assumed, and since sample sizes are very unequal, ANOVA and t-test are not appropriate. Instead, the Mann-Whitney U test was applied for significance testing. Mean differences in overall satisfaction with the bank (figure 1) are significant between group 1 and 6 ($z=-3.587$, $p<0.01$), 1 and 7 ($z=-2.090$, $p<0.02$) and 2 and 6 ($z=-8.154$, $p<0.01$). Customers who did not report a failure and who were very satisfied with the transaction show significantly higher overall satisfaction (1.45) than any other group. In respect of this group, a recovery paradox was not found and H1a is supported. However, if customers did not report a failure and were just satisfied with the transaction, overall satisfaction (1.88) was significantly lower compared to the group who evaluated service recovery as "much better than expected" (1.72). This supports H1b.

According to these results, service recovery efforts that exceed customer expectations can improve customer overall satisfaction with the company, except for those customers who are very satisfied with the transaction. However, if customers receive an error-free service that "just" satisfies their needs, their overall satisfaction is lower compared to the group which was recovered successfully after a service failure.

A slightly different pattern was found for "recommendation intention" (figure 2). Here, mean differences for group 1 and group 6 are not significant ($z=-0.637$, $p>0.524$). A very good service recovery can lead to about the same recommendation intention (1.52) as indicated for the group which was very satisfied with the transaction (1.46). H2a is supported. However, customers who assessed a transaction as only "satisfying" showed a weaker recommendation intention (1.72) than customers whose service recovery was much better than expected. Here, mean differences between group 1 and 7 are significant ($z=-1.832$, $p<0.04$) supporting H2b.

In summary, overall satisfaction and recommendation intention are highest for customers who receive an error-free and very satisfying service initially. However, customers who report a service recovery episode that exceeds their expectations show a higher level of satisfaction and recommendation intention than customers who initially experienced an error-free and satisfying transaction.

When assessing the service encounter, customers were asked to report any deviation from expectation, not just "critical incidents" (Bitner et al. 1990). Next, the respondents assigned the failure into one of three categories, "acceptable", "not acceptable", and "absolutely not acceptable". Pretest showed that "acceptable" failures did not call for service recovery very often. Hence, satisfaction with recovery solution provided (distributive justice) and speed of recovery (procedural justice) was only measured for "unacceptable" or "absolutely unacceptable" failures.

Both independent variables were measured on a five-point likert scale ranging from 1 (very satisfied) to 5 (very dissatisfied). The dependent variable was measured on a five-point likert scale ranging from 1 (much better than expected) to 5 (much worse than expected). Although likert scale measures are ordinal, they are regularly treated as interval scales. Linear regression model was defined as

DC (SR) = f (SF (DJ), SF (PJ)),

where DC = disconfirmation (positive or negative); SR = service recovery; SF = satisfaction; DJ = distributive justice; PJ = procedural justice.

Table 2   Linear regression model

	Unstandardized coefficient		Standardized coefficient	T	Sign.
	B	Std. Error	Beta		
Constant	2.050	.088		23.292	.000
SF (PJ)	.347	.029	.526	11.939	.000
SF (DJ)	.173	.036	.210	4.760	.000

Dependent Variable: DC (SR), r=0.646, r^2=0.418, corr. r^2=0.415, Std. error of estimate=0.646

Since both coefficients are highly significant, H3a is supported. Our findings also support exploratory research by (Parasuraman et al. 1991). They suggested that process dimension is more important than outcome for service recovery.

In order to test the nonlinearity assumption (H3b), regression with optimal scaling (CATREG) is applied. Standard linear regression maximizes the squared correlation between the dependent variable and a linear combination of metric independent variables. Ordinal variables are treated as interval level variables. Hence, only one parameter is estimated for each variable.

Regression with optimal scaling quantifies each level of an ordinal scale in order to maximize the squared correlations. In other words, each ordinal level is scaled optimally to account for as much variation in the transformed response as possible (SPSS 1998). The zero-order correlation measures
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the association between the transformed predictors and the transformed response. The partial correlation removes the effects of other predictors from the predictor and the dependent variable. The part correlation removes the effects of the other predictors from just the predictor. The importance is a measure of each predictor's contribution to the model. Procedural justice is almost three times more important than distributive justice. The tolerance measures the proportion of the variability in each predictor that is not accounted for by the other predictors (SPSS 1998).

Table 3   Regression with optimal scaling model

	Standardized coefficient		F	Correlations			Importance	Tolerance	
	Beta	Std. Error		Zero-order	Partial	Part		After transformation	Before transformation
SF (PJ)	.545	.041	179.786	.658	.570	.495	.729	.823	.805
SF (DJ)	.268	.041	43.448	.498	.323	.243	.271	.823	.805

Dependent Variable: DC (SR), multiple r=0.702, r^2=0.498, corr. r^2=0.489

Since corrected r^2 has been increased compared to standard regression, nonlinearity assumption is justified. While the quantification of the ordinal independent variables (satisfaction with outcome and satisfaction with speed) remained almost linear, the quantification of the dependent variable (service recovery disconfirmation) reveals nonlinearity.

Figure 3   Quantification of ordinal disconfirmation levels

Quantification of ordinal levels
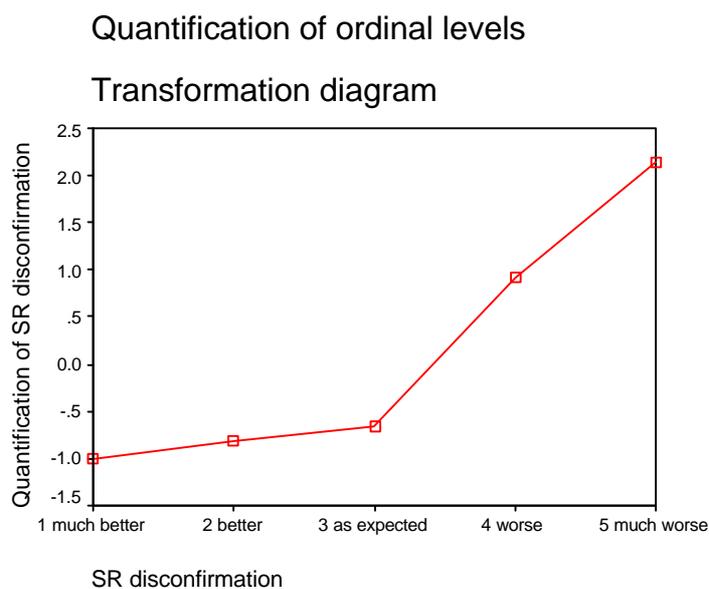
Transformation diagram

Figure 3 shows that positive and neutral levels are close together, whereas negative levels are highly dispersed. This implies that recovery outcome and speed have more impact on the negative than on the positive side. Service organization cannot rely on generous and speedy service recovery merely in order to delight dissatisfied customers. However, if the company fails on these dimensions, customers are very dissatisfied because of this "double deviation" (Bitner et al. 1990). In other words, to solve the problems quickly is a basic requirement for service recoveries, but it is not enough to delight (Andreassen 2001) customers. Therefore, H3b is supported.

LIMITATION

While this study is one of the few that provides a test of the service recovery paradox using actual satisfied and dissatisfied customers in real-life situations, some limitations remain. First, only the banking industry was considered. Despite the fact that the banking industry is well suited because of long-lasting, formal relationships, with many service transactions, generalization is not proved. Second, distributive justice and procedural justice are measured with only one item each. Scale reliability and validity cannot be confirmed.

DISCUSSION

Prior research has not come to a conclusion regarding the existence of a service recovery paradox. Some researchers suggest that customers prefer a reliable, error-free initial service over a very good service recovery after a service failure, while others hypothesize the existence of a paradox. However, most studies fail to compare initially satisfied customers with customers who experienced a service failure. By doing so, our results lead to the conclusion that a very satisfying initial service is what is most preferred. Nevertheless, a very good service recovery leads to higher overall satisfaction and more positive word-of-mouth intention than an error-free initial service which is "just" satisfying.

Managerial implications are straightforward. Service managers have to strive for a reliable error-free service in order to satisfy their customers in the first place. But, since service failures are inevitable in most settings, service recovery becomes crucial when something goes wrong.

Our study further revealed that a fair solution and a speedy recovery are mandatory for successful recovery. We found that distributive justice (e.g., satisfaction with the recovery solution) and procedural justice (e.g. satisfaction with speed) during the service recovery process explain almost 50 per cent of the variance of disconfirmation with service recovery. Regression with optimal scaling confirms the predicted non-linearity between justice and service recovery disconfirmations. Unfair solutions and slow recovery may explain negative disconfirmation, while fair solutions and fast recovery do not lead to positive disconfirmations. Hence, both factors are perceived as mandatory.

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There are many avenues for further research. Firstly, it would be interesting to replicate a similar study in other industries and in other countries. Secondly, justice constructs may be measured with multi-item scales rather than single-item scales in real-life settings. Thirdly, antecedents of the service recovery paradox should be taken into account when comparing initially satisfied and dissatisfied customers. Finally, our study did not determine service recovery factors that "delight" customers.

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