

How online service recovery approaches bolster recovery performance? A multi-level perspective

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Abstract Employees are often sandwiched between understandable customer grievances and unchangeable organizational policies: only when employees feel fairly treated will they treat customers fairly. Most previous studies focused on external service recovery systems for customers, but neglected internal service recovery systems for frontline employees. By extending Homburg and Fürst's research, this study adopts a multi-level perspective to explore the influences of the mechanistic approach (process guidelines, behaviour guidelines, and compensation guidelines) and the organic approach of service recovery (empowerment and recovery culture) on frontline employees' responses (recovery efficacy, accountability, and performance) towards implementing a service recovery within an online auction context.

Keywords Mechanistic approach of service recovery · Organic approach of service recovery · Recovery efficacy · Recovery accountability · Recovery performance

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1 Introduction

The topic of service failure and recovery has received considerable attention in recent years. Even the most customer-oriented organization is not likely to avoid or eliminate service failures, such as late deliveries or service quality not meeting customers' expectations (Vázquez-Casielles et al. 2010). Further, a lack of significant switching costs enables customers to easily switch to an alternative service provider (Forbes et al. 2005); this is especially true in the context of online auctions. Service recoveries are the actions a service provider takes in response to service failures, such as rectifying the loss experienced by customers. Customers who experience a service failure followed by superior recovery might rate their satisfaction as high as or even much higher than they would have had no failure occurred (Sousa and Voss 2009). Since the costs associated with keeping existing customers are three to five times less than those associated with obtaining new customers (Hoffman and Kelley 2000), firms have to design appropriate service recovery mechanisms to ensure customer satisfaction.

Service recovery performance is not only determined by the success of recovering customers, but also by helping employees recover from the frustration experienced during recovery situations (Kim and Oh 2012; Michel et al. 2009). Only when employees feel fairly treated will they treat customers fairly (Ashill et al. 2008). Most previous studies have been primarily concerned with external service recovery of customers (Akinci et al. 2010; Beverland et al. 2010). Few studies focus on internal service recovery, such as providing incentives for employees or supporting them as they deal with grumbling customers. Since frontline employees play a crucial role for responding to service failures and building relationships with customers (Kim et al. 2012; Rod and Ashill 2009), research on internal service recovery of frontline employees deserves further validation.

A formal recovery approach that provides guidelines for employees to follow helps firms systematically monitor and benchmark the types of failures they face, and thereby helps to minimize the chance of future occurrences (Gonzalez et al. 2010). Well-constructed online service recovery approaches guide employees to implement recovery actions (Huang and Lin 2011). Past studies have examined service recovery strategies and their linkages to consumer satisfaction (Harris et al. 2006; Tsai and Su 2009). However, a paucity of research has investigated recovery strategies that aid managers in identifying recovery guidelines (Ashill et al. 2008; Johnston and Michel 2008). Firms may reap the benefits of improved customer satisfaction though establishing service recovery guidelines. In turn, a better understanding of how a firm's service recovery guidelines influence employees' responses in terms of improving recovery performance is required.

By extending Homburg and Fürst's (2005) research on customer complaints, this study explores the influences of the mechanistic approach and the organic approach of service recovery on frontline employees' responses within the online auction context. The mechanistic approach of service recovery establishes guidelines for employees to follow, while the organic approach of service recovery creates a favourable internal environment that motivates and supports employees' customer-oriented behaviours (Gonzalez et al. 2010). More specifically, a multi-level perspective is adopted to

consider both firm-level recovery approaches and employee-level responses towards implementing a service recovery. This study further investigates these employee responses towards implementing a service recovery, in terms of recovery efficacy, recovery accountability, and recovery performance.

2 Theoretical background

Based on existing organizational theory, Homburg and Fürst (2005) suggested that firms use the mechanistic approach and the organic approach to handle customer complaints. The mechanistic approach of online service recovery is rooted in the “organization as machine” paradigm and refers to standard operation procedures that employees should follow. In contrast, the organic approach of online service recovery is closely linked to the “organization as organism” paradigm and represents the supportiveness of the internal environment, which motivates employees to implement online service recovery processes. The current study adopts the mechanistic approach and the organic approach of service recovery to describe online auction sellers’ service recovery mechanisms. Although both approaches were originally used to respond to customer complaints, prior studies have extended them to the service recovery context (Gonzalez et al. 2010; Johnston and Michel 2008; Michel et al. 2009). Consequently, an extension of the research context from customer complaints to service recovery seems viable.

According to Homburg and Fürst (2005), the mechanistic approach for handling customer complaints includes process guidelines, behaviour guidelines, and compensation guidelines. Process guidelines are defined as “the degree to which a formal organizational procedure for registering and processing customer complaints exists and is consistent with complainants’ needs (Homburg and Fürst 2005, p. 96).” Process guidelines provide a structured manner to efficiently record customers’ information and respond to their needs. Behaviour guidelines refer to “the degree to which an explicit organizational policy for employees’ behaviour towards complainants exists and is consistent with complainants’ needs (Homburg and Fürst 2005, p. 96).” Behaviour guidelines provide directions for employees to be polite and thoughtful, and take responsibilities for customer problem. Compensation guidelines represent “the degree to which a formal organizational policy for providing compensation to complainants exists and fits customers’ needs (Homburg and Fürst 2005, p. 96).” Compensation guidelines include the allowance of generous compensation that should satisfy complainants’ needs. More specifically, the mechanistic approach can be regarded as standard operating procedures, such as systematic identification and specification of service failures (Gonzalez et al. 2010). Following Homburg and Fürst (2005), this study uses process guidelines, behaviour guidelines, and compensation guidelines to represent the mechanistic approach of online service recovery.

The organic approach of online service recovery implies whether a firm’s leadership facilitates or hinders recovery efforts. Based on Homburg and Fürst (2005), the organic approach for handling complaints is defined as the extent “to which human resource management practices and the organizational culture favour effective complaint handling (Homburg and Fürst 2005, p. 97).” This approach

includes two facets: personnel-related activities and culture. Personnel-related activities are leadership behaviours that support employees' customer orientation. Given that empowerment is consistent with a decentralized management strategy, it can be regarded as one of the most important determinants for personnel-related activities (Boshoff 1997). This study adopts empowerment and culture to represent the organic approach of online service recovery: empowerment refers to employees' degree of discretion to make daily decisions about activities relating to service recovery (Lashley 1995), while culture is related to the shared values and norms that reveal management's support for employees to implement service recovery procedures (Gonzalez et al. 2010).

3 Hypotheses development

Self-efficacy reflects an individual's self-perceptions of whether he/she has the necessary abilities to achieve a desired outcome (Brazeal et al. 2008; Kickul et al. 2008). Self-efficacy determines how much effort people exert and how long they persist in the face of obstacles. Employing self-efficacy to the study of online service recovery is highly appropriate, since most frontline employees frequently have to deal with customers' anger and negative emotions. Self-efficacy represents their confidence in terms of being able to solve problems and maintain relationships with customers. This study adapts self-efficacy to the online service recovery context by defining recovery efficacy as a frontline employee's belief in his/her capability to effectively enact a service recovery.

Guidelines increase role clarity by informing employees about how to perform their jobs (Homburg and Fürst 2005). According to Bandura (1986), personal experience, role modelling and vicarious experience, verbal persuasion, and emotional arousal can all affect self-efficacy perceptions. Role modelling reduces role conflict by enhancing the compatibility between abilities and the firm's expectation (Kickul et al. 2008). Taken together, online service recovery guidelines strengthen employees' beliefs in their capabilities by adjusting their roles to meet the firms' expectations.

Guidelines for failure recovery increase the probability that employees will explain policies and/or provide feedback to customers in a timely manner (Smith and Karwan 2010). Process guidelines include instructions for recording and forwarding complaints in a quick and structured manner. When service failure occurs, employees follow process guidelines for service recovery. When employees can control the failure recovery process and solve the problem efficiently, customer requirements will be promptly satisfied (Homburg and Fürst 2005). An increased perception of control enables employees to be confident about their capability to fulfil customer requirements. Thus,

H_{1a} Process guidelines are positively associated with online service recovery efficacy.

Behaviour guidelines involve instructions for interacting with customers, such as showing concern and taking responsibility for customer problems (Homburg and

Fürst 2005). Behaviour guidelines enable employees to act according to their company's directives (Simon 1997). As the levels of role clarity increase, employees have greater confidence in being customer-oriented (Bandura 1986). When service recovery failure occurs, employees must communicate with customers politely and attentively, irrespective of who is responsible for the failure. The firm's behaviour instructions enable employees to interact with customers according to firm policies. When employees understand their roles, they are more confident when serving customers. Therefore,

H_{1b} Behaviour guidelines are positively associated with online service recovery efficacy.

Outcome guidelines provide for and indicate how employees can compensate customers for complaints (Homburg and Fürst 2005). By following outcome guidelines, all employees are like to provide similar forms and levels of compensation to customers, decreasing the probability of complaints (Homburg and Fürst 2005). For example, when a customer receives a late product delivery and should be awarded a ten dollar coupon, employees must simply follow outcome guidelines without worrying about addressing the customer's negative emotions. When employees can provide generous compensation, they have greater confidence in their capability to perform service failure recovery tasks. Therefore,

H_{1c} Outcome guidelines are positively associated with online service recovery efficacy.

The organic approach of online service recovery can be classified into empowerment and recovery cultures. Through empowerment, employees have option to choose what they should do under different types of customers or situations (Smith et al. 2010). Since service failures may not always follow the same pattern, service recovery processes require improvisation resources for dealing with the unexpected emotions and behaviours of dissatisfied customers (Cunha et al. 2009; Lee et al. 2013). Empowerment enables employees to use personal judgment to rapidly respond to customer needs (Robinson et al. 2011), especially when the guidelines do not offer sufficient directions. The increased discretion and flexibility compensate for the insufficiencies of the mechanistic approach of online service recovery, thereby increasing frontline employees' confidence and enthusiasm for recovering customers, and delivering excellent service (Ashill et al. 2008). Although the mechanistic approach provides guidelines to follow, if frontline employees have the authority to deal with unexpected situations, they tend to have higher levels of recovery efficacy. Thus,

H_{2a} Empowerment positively moderates the positive relationship between the process guidelines of the mechanistic approach and recovery efficacy.

H_{2b} Empowerment positively moderates the positive relationship between the behaviour guidelines of mechanistic approach and recovery efficacy.

H_{2c} Empowerment positively moderates the positive relationship between the outcome guidelines of mechanistic approach and recovery efficacy.

Recovery culture reveals the firms' leadership determination to support employees in their online service recovery efforts. Firms with supportive recovery cultures are more likely to engage in systematic failure analysis activities (Gonzalez et al. 2010). A supportive leadership develops a constructive attitude towards service recovery and a facilitative climate of trust and helpfulness (Ashill et al. 2008). In other words, support from management creates a psychologically safe environment for acknowledging unmet customer expectations. Additionally, a recovery culture facilitates customer-oriented behaviour by providing guidance to employees in terms of what the firm expects from them (Gonzalez et al. 2010). When the employees perceive a customer-orientated culture, they are more likely to exhibit corresponding behaviours and thus engage in effective recovery practices to re-establish customer satisfaction (Gazzoli et al. 2013). Although the mechanistic approach of service recovery provides guidelines for employees to follow, unreasonable customer requests can still result in frustrated employees. However, if employees understand the firm's expectations and sense support from management in terms of implementing service recoveries, they may have more confidence as they work to recover customers. Therefore,

H_{3a} Supportive culture positively moderates the positive relationship between the process guidelines of mechanistic approach and recovery efficacy.

H_{3b} Supportive culture positively moderates the positive relationship between behaviour guidelines of the mechanistic approach and recovery efficacy.

H_{3c} Supportive culture positively moderates the positive relationship between the outcome guidelines of mechanistic approach and recovery efficacy.

Accountability is defined as "the need to justify or defend a decision or action to some audience which has potential reward and sanction power (Frink and Klimoski 1998, p. 9)." Applying accountability to an online service recovery refers to a situation where frontline employees are held personally responsible for recovering from failures, and also expected to justify their behaviour to their customers, superiors, and peers. Individuals who are high in accountability exhibit higher levels of involvement and greater participation in their tasks (Hochwarter et al. 2007).

A personal capabilities assessment directs an individual to situations in which they feel efficacious or competent (Chen et al. 1998). According to Bandura (1997), self-efficacy has an impact on an individual's motivational processes and goal attainment. When an individual believes they are capable of performing a task, he/she puts in greater effort during the performance (Chong and Ma 2010). These perceptions of an individual's abilities determine the possibility of successful outcomes, and thus influence both willingness and motivation to take action. Desivilya and Eizen (2005) found that self-efficacy predicts the level of an individual's motivation and the amount of effort exerted. Frink and Klimoski (1998) further proposed that accountability is a motivational factor that guides individuals to behave while being appraised by external audiences. Taken together, efficacious frontline employees have more confidence in their abilities, and thus are more willing to be responsible for their tasks:

H₄ Recovery efficacy is positively associated with recovery accountability.

Self-efficacy has been found to be a vital driving factor of performance across a variety of task domains (Bandura 1986). Individuals high in self-efficacy committed to set goals, and exert persistence in the face of insurmountable obstacles (Gong et al. 2009). Efficacious individuals persist until the desired goals are achieved (Kumar and Uz Kurt 2011). Previous studies have found that self-efficacy predicts job performance: Al-Eisa et al. (2009) argued that efficacious individuals develop self-disciplined behaviour and strive to improve their performance. Chong and Ma (2010) found that an individual's confidence in the abilities helps to sustain work performance. Thus, efficacious frontline employees persist in satisfying customers' needs in the face of obstacles, leading to better recovery performance.

H₅ Recovery efficacy is positively associated with recovery performance.

Accountability has a significant and positive relationship with job performance. Because higher levels of accountability require individuals to exert more energy and deploy more interpersonal resources than low levels do, the ability to maintain a reserve of energy and resources facilitates favourable individual and organizational outcomes (Hall et al. 2006). The positive influence of accountability on job performance has been confirmed by previous studies: Hall et al. (2009) proposed that accountability is related to job performance, while Lanivich et al. (2010) argued that accountability gives rise to positive outcomes, such as job performance. When frontline employees have higher levels of accountability, they use more energy and deploy more resources to satisfy customers, which in turn lead to better recovery performance. Thus,

H₆ Recovery accountability is positively associated with recovery performance.

Finally, taking H6 and H7 together, this study also proposes that recovery accountability acts as a mediator between recovery efficacy and recovery performance. The underlying logic for this hypothesis is that performance is not only determined by an individual's beliefs in their own capability, but also his/her willingness or motivation to implement a task. When an employee believes in his/her capabilities to complete a task and then attempts a recovery after a service failure, recovery performance can be bolstered. Thus,

H₇ Recovery accountability mediates the relationship between recovery efficacy and recovery performance.

Figure 1 shows research model of this study.

4 Methodology

4.1 Measurement development

A questionnaire was developed for the survey used of this study. Measures were adapted primarily and whenever possible from previous validated questionnaires. Minor modifications were made to fit the context of the present study. When such items/scales are not available, this study develops, tests, and assesses item reliability

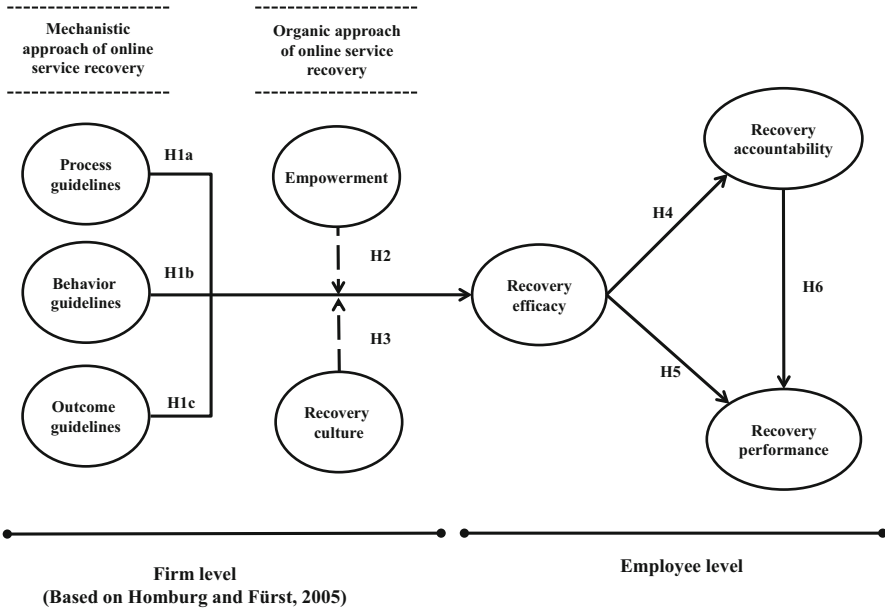


Fig. 1 Research framework of this Study

and validity. The scale purification process was conducted following Churchill (1979, 2002). All items were measured using a seven-point Likert scale with anchors (1) strongly disagree to (7) strongly agree.

Because the data were collected in Taiwan, a management professor translated the original questionnaire into a Chinese version, which was then back-translated into English by another professor who is competent in both languages (Brislin 1986; Seborá et al. 2009). Subsequently, a bilingual management scholar compared the English and Chinese versions of the survey, determining that they were comparable to a high degree of accuracy; modifications were made to resolve minor discrepancies. In a pretest of the questionnaire, 15 graduate students in the International Master of Business Administration program at National Cheng Kung University completed the English version of the questionnaire; another 15 copies of the Chinese version were randomly distributed to graduate students in the Service Marketing course at National Taichung University of Science and Technology. The results from the back-translation of the original English questionnaire into Chinese were satisfactory: the English and Chinese versions were mutually consistent. Measurement items for each construct and their sources are listed in the Appendix 1.

4.2 Survey administration

The trading environment of online auctions involves website operators, sellers and buyers, while the trading environment of shopping websites involves only website operator and buyers (Kuo et al. 2011). Since products are sold by website operators,

some shopping websites serve as middlemen in terms of providing trading platforms. When online service failures occur on online shopping websites, customers contact the websites directly, instead of the sellers. Responses to customers may come from either the website operator or sellers/buyers. In contrast, online auctions provide trading functions for both buyers and sellers to make direct connections. Given that frontline employees from online auctions respond to customers' needs directly, this study only collected data from online auction sellers.

As this study explores online service failures, the use of a web-based questionnaire to collect representative samples was deemed appropriate. Online auction sellers at Yahoo! Kimo Auction (www.tw.bid.yahoo.com) and Ruten Auction (www.ruten.com.tw) were chosen as the sampling frame, since they are the most famous auction websites in Taiwan. As small scale online retailers may not utilize formal recovery mechanisms, only online retailers who had more than 10,000 ratings and 95 % or greater positive ratings were considered, as these ratings imply the existence of formal recovery systems and an emphasis on customer satisfaction. This study randomly selected 1,000 online auction sellers from the aforementioned websites; each was sent an email inquiring about their willingness to participate in this survey. In total, 32 online auction sellers agreed to participate in this study.

Data were collected using two separate questionnaires: one for frontline employees and the other for their supervisors. Frontline employees' questionnaires included their personal information and questions about each research construct, except for recovery performance. Their supervisors were asked to evaluate specific frontline employees' service recovery performances. Each supervisor evaluates more than one frontline employee's performance. In order to verify each corresponding relationship for further analysis, the questionnaires include firm names and identification codes. However, all respondents were asked to return the questionnaire with an enclosed self-addressed stamped envelope to guarantee that responses would remain confidential.

After two rounds of telephone follow-up, a total of 211 frontline employees and 30 supervisors completed the surveys. Out of the 211 questionnaires returned, 14 were incomplete, resulting in 197 usable responses (197 frontline employees with 29 corresponding supervisors) from 29 online auction sellers. Table 1 presents the demographic characteristics of the respondents. The sample consisted of 35 % male respondents. Nearly 70 % of the respondents had completed their university education. Approximately, 32 % of the respondents were between 20 and 24 years of age; more than 68 % had less than three years of experience dealing with online service recovery. Approximately, 82 % of the firms surveyed had less than 50 employees.

5 Hypotheses testing

Table 2 presents the means, standard deviations, and bivariate correlations among the constructs. This study estimated two initial confirmatory factor analysis (CFA) models to verify the distinctiveness of employee-level constructs and firm-level construct using AMOS 19.0. The CFA models tested for employee-level constructs

Table 1 Characteristics of respondents and sampling firms

Item/description	Count	%
Gender		
Female	147	34.96
Male	79	65.04
Education		
High school	68	30.09
University	116	51.33
Master	42	19.58
Age		
Less than 19	6	2.65
20–24	72	31.86
25–29	67	29.65
30–35	51	22.57
36–40	17	7.52
40 or above	13	5.75
Job position		
Assistant	10	4.42
Staff	187	82.74
Supervisor	20	8.85
Manager	9	3.98
Work experience at current firm		
0–3 years	152	67.26
4–6 years	51	22.57
7–12 years	17	7.52
12 or above	6	2.65
History of the firms		
0–3 years	3	11.54
4–6 years	9	31.03
7–12 years	13	44.83
12 or above	4	13.79
Number of the employees		
Less than 25	8	30.77
26–50	15	51.72
51–75	3	10.34
76–100	2	6.90
100 or above	1	3.45

included (a) a one-factor model, ($\chi^2 = 304.00$, comparative fit index [CFI] = 0.85, root-mean-square error of approximation [RMSEA] = 0.09, and a Tucker–Lewis index [TLI] = 0.82); (b) a two-factor model, ($\chi^2 = 268.03$, CFI = 0.87, RMSEA = 0.08, and TLI = 0.84); and (c) the hypothesized three-factor model. The hypothesized model with four distinct factors shows better fit indices ($\chi^2 = 135.35$, CFI = 0.95, RMSEA = 0.07, and TLI = 0.94) than each of the

Table 2 Descriptive statistics and correlations

Employee-level variables	Mean	SD	1	2	3	4
1. Gender	1.66	0.47				
2. Job tenure	2.47	0.78	-0.11			
3. Recovery efficacy	4.77	0.97	0.03	0.10		
4. Recovery accountability	4.76	0.95	0.01	0.11	0.24	
5. Recovery performance	4.30	0.91	-0.05	0.04	0.48	0.48
Firm-level variables	Mean	SD	1	2	3	4
1. Process guidelines	4.45	1.02				
2. Behaviour guidelines	4.49	1.10	0.51			
3. Outcome guidelines	4.04	1.16	0.38	0.55		
4. Empowerment	3.36	0.94	0.31	0.33	0.48	
5. Recovery culture	3.91	0.93	0.47	0.45	0.54	0.53

other models, thereby supporting the variables' discriminant validity. The CFA of the firm level measures also supports that the firm-level constructs are distinct, as a hypothesized five-factor model provides an adequate fit ($\chi^2 = 931.74$, CFI = 0.85, RMSEA = 0.13, and TLI = 0.83), in contrast to the four-factor, three-factor, two-factor, and one-factor models.

Hierarchical linear model (HLM) is a statistical technique used for examining relationships across multiple levels (Raudenbush and Bryk 2002). Since this study investigated the effect of service recovery approaches (firm level) on frontline employees' recovery efficacy (employee level), data collected from 197 frontline employees at 29 different firms may have resulted in multiple sources of variance. This study utilized HLM 6.08 software to test the hypotheses. First, this study ensured significant firm-level variance in terms of recovery efficacy by estimating a null model with no predictors at the employee level. ICC[1] values and associated Chi-square tests revealed that 61.24 % of the variance in self-efficacy resides between firms ($\chi^2[28] = 303.58$, $p < 0.01$). In each case, the significant between-firm variance provides justification for testing the full model. Accordingly, this study used HLM to predict recovery efficacy (Hypotheses 1–3).

Table 3 summarizes the results from the HLM analyses. The two control variables (gender, job tenure) and three main effect variables (process guidelines, behaviour guidelines, compensation guidelines) were entered as level 2 predictors. This study used grand mean centres for the level 2 predictors (Hoffmann and Gavin 1998). As shown in Model 2, process guidelines ($\gamma = 0.33$, $p < 0.01$) and compensation guidelines ($\gamma = 0.23$, $p < 0.05$) have positive impacts on frontline employees' recovery efficacy. However, behaviour guidelines do not exhibit a significant influence on frontline employees' recovery efficacy ($\gamma = 0.15$, $p > 0.05$). Variance component analysis indicates that process standards, behaviour standards, and compensation standards account for 76 % of the between-firms variance in recovery efficacy. Thus, hypothesis 1a and 1c are supported, but 1b is not supported.

Table 3 HLM analyses results for recovery efficacy

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	2.36***	2.46***	2.41***	2.45***
Control variables				
<i>Gender</i>	-0.03	-0.06	-0.07	-0.05
<i>Job tenure</i>	0.03	0.03	0.03	0.02
Process guidelines		0.33**	0.38	0.16
Behaviour guidelines		0.15	-0.63*	-0.88
Outcome guidelines		0.23*	1.24***	1.49**
Empowerment			0.16	
Recovery culture				0.22
Process guidelines × Empowerment			-0.24**	
Behaviour guidelines × Empowerment			-0.05	
Compensation guidelines × Empowerment			0.25***	
Process guidelines × Recovery culture				-0.01
Behaviour guidelines × Recovery culture				0.42*
Compensation guidelines × Recovery culture				0.41
$\Delta R^2_{\text{between-firm}}$		0.76	0.20	0.20

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

To test hypothesis 2, this study examined whether empowerment and recovery culture have moderation effects on self-efficacy. As shown in Model 3, empowerment moderates the influences of process guidelines ($\gamma = -0.24$, $p < 0.05$) and compensation guidelines ($\gamma = 0.25$, $p < 0.01$) on recovery efficacy. However, the moderating effect of empowerment on behaviour guidelines on recovery efficacy is not significant ($\gamma = -0.05$, $p > 0.05$). A variance components analysis indicates that the additional interaction effects of empowerment account for 20 % of the between-groups variance in recovery efficacy. These results support hypothesis 2a and 2c, but not hypothesis 2b.

To further examine the moderating effect, this study plotted separate simple slopes derived from the Aiken and West (1991) by depicting the relationship between process guidelines and recovery efficacy at high and low values of empowerment (one standard deviation above and below the mean). Figure 2 depicts the interaction. There is a positive relationship between process guidelines and recovery efficacy for both high levels ($\gamma = 0.21$, $p < 0.05$) and low levels ($\gamma = 0.46$, $p < 0.01$) of empowerment. However, this result differs from our hypothesis that the influence of process guidelines on recovery efficacy will be stronger at high levels of empowerment than at lower levels of empowerment. Figure 3 depicts the interaction for the influence of empowerment on the relationship between compensation guidelines and recovery efficacy. The influence of compensation guidelines on recovery efficacy is positive and significant at high levels of empowerment ($\gamma = 0.57$, $p < 0.01$), and is stronger than that associated with low levels of empowerment ($\gamma = 0.38$, $p < 0.05$).

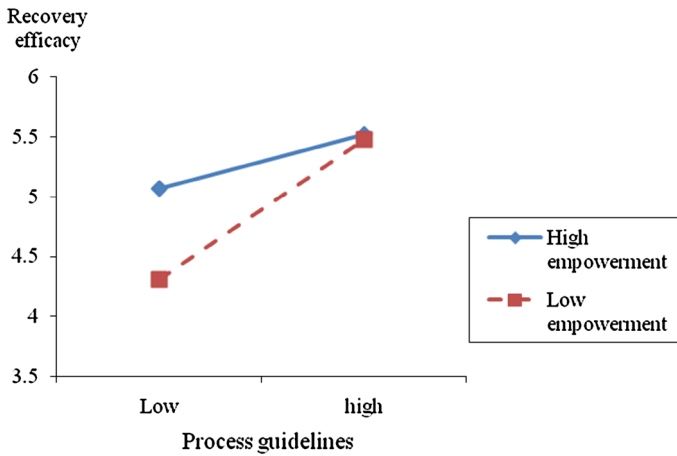


Fig. 2 The moderating effect of empowerment on the relationship between process guidelines and recovery efficacy

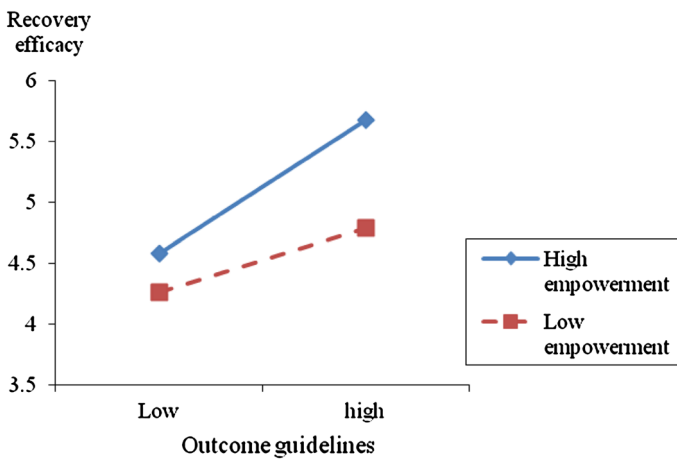


Fig. 3 The moderating effect of empowerment on the relationship between outcome guidelines and recovery efficacy

To test hypotheses 3, this study added recovery culture as moderator for the impacts of the three main effect variables (process guidelines, behaviour guidelines, compensation guidelines) on self-efficacy. Model 4 of Table 3 shows that recovery culture moderates the influence of behaviour guidelines on self-efficacy ($\gamma = 0.42, p < 0.05$). However, the moderating effects of recovery culture for the influence of process guidelines ($\gamma = -0.01, p > 0.05$) and compensation guidelines ($\gamma = 0.41, p > 0.05$) on self-efficacy are not significant. Further, the moderation effects of recovery culture account for an additional 20 % of between-groups variance in recovery efficacy. Thus, hypothesis 3b is supported, but 3a and 3c are not supported.

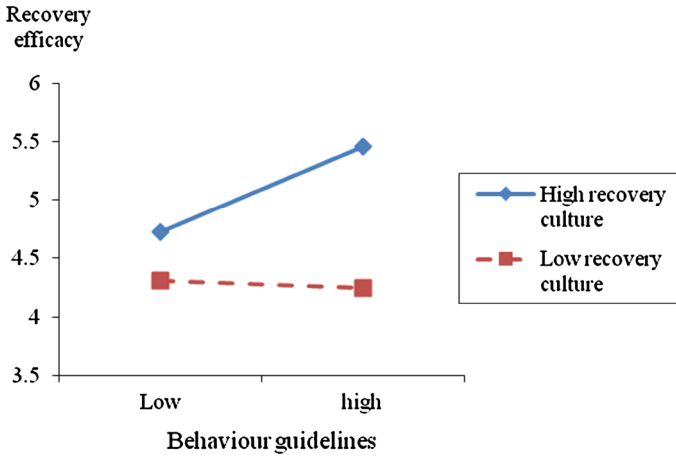


Fig. 4 The moderating effect of recovery culture on the relationship between behaviour guidelines and recovery efficacy

Figure 4 illustrates the interaction among behaviour guidelines, recovery culture and recovery efficacy. As anticipated, the interaction plot reveals that the slope for behaviour guidelines to predict recovery efficacy is significant at high levels of recovery culture ($\gamma = 0.48, p < 0.01$). However, at low levels of recovery culture, the slope for using behaviour guidelines to assess recovery efficacy is insignificant ($\gamma = -0.10, n.s.$).

Table 4 tests the interrelationships among recovery efficacy, recovery accountability, and recovery performance. As shown in Table 4, recovery efficacy has a positive influence on recovery accountability ($\beta = 0.16, p < 0.001$), and accounts for 11 % of the within-group variance for recovery accountability. Further, recovery efficacy has a positive influence on recovery performance ($\beta = 0.41, p < 0.001$), with 14 % of the within-group variance for recovery performance, while recovery accountability has a positive influence on recovery performance ($\beta = 0.45, p < 0.001$), with 4 % of the within-group variance for recovery performance. Furthermore, recovery accountability is significantly related to recovery performance

Table 4 HLM analyses results for recovery performance

Predictors	Recovery accountability		Recovery performance	
Intercept	2.48***	20.98***	2.95	2.97***
Control variables				
Gender	-0.01	-0.11	-0.12	-0.11
Job tenure	-0.02	-0.00	0.01	0.00
Recovery efficacy	0.16***	0.41***		0.21
Recovery accountability			0.45***	0.37***
$\Delta R^2_{\text{within-firm}}$	0.11	0.146	0.04	0.15

*** $p < 0.001$

($\beta = 0.37, p < 0.001$), accounting for 14 % of the within-group variance for recovery performance. However, the insignificance of recovery efficacy on recovery performance ($\beta = 0.21, p > 0.05$) confirms the mediating role of recovery accountability. Thus, hypotheses 4, 5, 6 and 7 are all supported.

6 Research suggestions and implications

6.1 Research findings

There are a number of findings derived from this study. First, process guidelines and compensation guidelines associated with recovery approaches influence recovery efficacy. A structured manner to handle service encounter and a generous compensation policy provide employees with rules to follow, which gives them greater confidence as they respond to customers' needs. These findings are consistent with Homburg and Fürst (2005), who found that standard operating procedures influence employee behaviour. However, behaviour guidelines associated with recovery approaches do not have a significant influence on recovery efficacy. As suggested by Smith et al. (2010), the integration of both technical systems and human elements helps firms implement service recovery processes. Technical systems encompass the policies and procedures established to guide recovery processes. Process and compensation guidelines can be regarded as technical systems, while behaviour guidelines include both technical systems and human elements. Recovering customers often involves facing ever-increasing conflicts or, at a minimum, unpleasant situations (Smith et al. 2010). When following behaviour guidelines, employees are asked to express their concern in a thoughtful way, even when customers have made mistakes; employees may even need to fake concern, which conflicts with their role playing, and thus reduces efficacy beliefs (Kickul et al. 2008).

Second, empowerment moderates the relationship between process guidelines and recovery efficacy. No matter whether levels of empowerment are high or low levels of empowerment, firms with process guidelines of service recovery facilitate frontline employees' recovery efficacy. This finding reflects that of Bhandari et al. (2007), who found that organizational policy and employee actions are complementary. Contrary to our prediction, this result asserts that the influence of empowerment becomes weaker as firms provide process guidelines for service recovery. One possible explanation for this phenomenon is that process guidelines provide formal directions for frontline employees to follow. While performing routine jobs, process guidelines help employees give timely responses to customers, making authority less important.

Third, empowerment positively moderates the relationship between compensation guidelines and recovery efficacy. More specifically, empowerment strengthens the positive influences of compensation guidelines on recovery efficacy. When firms provide allowance for generous compensation, higher levels of empowerment lead to higher levels of confidence in terms of satisfying customer's needs. However, empowerment does not moderate the relationship between behaviour guidelines and recovery efficacy. Empowerment allows employees to use personal judgement to

resolve customer concerns (Smith et al. 2010). Although empowerment gives employees the authority to make decisions, employees need to show their concern to customers, either with pretension or out of sincerely. If frontline employees are not willing to sincerely attempt to recover from failures, their efficacy beliefs cannot be enhanced, even when they have greater decision-making authority.

Fourth, recovery culture positively moderates the relationship between behaviour guidelines and recovery efficacy. When firms build up cultures with customer-oriented values and norms, frontline employees are intrinsically motivated (Gonzalez et al. 2010). When firms provide behaviour guidelines and develop a customer-oriented culture, frontline employees may unconsciously follow firm policies and have greater confidence while implementing service recovery procedures. However, recovery culture does not moderate the process guidelines-recovery efficacy and compensation guidelines-recovery efficacy relationships. One possible reason might be that process guidelines and compensation guidelines help employees to recover failures by following formal step-by-step procedures (Homburg and Fürst 2005). Although a recovery culture represents management support for customer-oriented values and norms, employees must follow process guidelines and compensation guidelines to accomplish their tasks. As such, recovery culture does not moderate the influences of process and compensation guidelines on recovery efficacy.

Finally, this study confirms the interrelationships among recovery efficacy, recovery accountability, and recovery performance, and further suggests that recovery accountability fully mediates the influence of recovery efficacy on recovery performance. This result is consistent with previous research, which finds that the perceptions of an individual's abilities influence his/her willingness and motivation to take action (Chong and Ma 2010). Self-disciplined individuals seek to improve their performance (Al-Eisa et al. 2009). When employees have greater confidence in their capability to recover failures, they exhibit greater willingness and devotion to their tasks, leading to higher levels of recovery performance.

6.2 Managerial implications

This study differs from previous research in three important ways. First, in extending Homburg and Fürst's (2005) complaint handling approach to the online service recovery context, this study considers both the mechanistic approach and the organic approach of online service recovery. This extension responds to Homburg and Fürst's (2005) statement that "our differentiation between the mechanistic and the organic approach is also applicable to the study of other organizational phenomena in marketing" (p. 108). This study further investigates the moderating roles of the organic approach, including empowerment and recovery culture, on the relationship between the mechanistic approach and recovery efficacy. This study also responds to Gonzalez et al.'s (2010) statement that "studies that investigate how organic-based and mechanistic-based approaches to recovery complement or hinder one another would also further the literature's understanding of dynamic recovery processes (p. 232)." This study provides a comprehensive conceptualization of recovery management from both the mechanistic approach and the organic approach of online service recovery.

Second, as suggested by Johnston and Michel (2008), a firm's service recovery procedure comprised customer recovery, process recovery, and employee recovery. Previous studies have identified the influences of the recovery strategy on customers' responses (Ashill et al. 2008; Beverland et al. 2010). However, in contrast to prior research, this study sheds lights on the influences of firms' service recovery approach on frontline employees' recovery efficacy, which responds to Ashill et al.'s (2005) statement that "the performance of frontline staff is a key component in the delivery of care and customers often judge their experience based on the interaction (p.294)." Further, this study adopts a multilevel perspective to investigate the influences of service recovery approaches on employees. A multilevel view of firms recognizes that firms have a "top-down" influence on frontline employees' behaviour by examining cross-level relationships with different sources of variance (Raudenbush and Bryk 2002). This effort responds to Smith et al.'s (2010) suggestion that "extant research falls short of providing prescriptions that can be implemented at both the organizational and the individual levels to ensure effective service recovery and positively affect firm-wide performance (p. 440)."

Finally, this study moves beyond existing research by introducing a new perspective, recovery efficacy, to the ontogenesis of domain-specific self-efficacy. In doing so, this study responds to Pajares (1997), who argued that self-efficacy must be "tailored to the domains of functioning being analysed and reflect the various task demands within that domain (p. 8)." In addition, this study also confirms the mediating role of recovery accountability on the relationship between recovery efficacy and recovery performance, which further enriches Bandura's (1997) self-efficacy framework. This study also answers Royle et al.'s (2005) call for "empirical research that attempt[s] to explore the potential association between job self-efficacy and accountability (p. 57)."

In terms of practice, this study provides important insights for practitioners in terms of customer retention strategies. First, the results suggest that process guidelines exert a stronger effect (0.328) on recovery efficacy than do compensation guidelines (0.226). As suggested by Kasabov and Warlow (2010), service recovery is costly, but desirable and necessary for service providers. Although the mechanistic approach of service recovery includes process guidelines, behaviour guidelines, and compensation guidelines, process guidelines have a greater impact on frontline employee efficacy than compensation guidelines. The underlying rationale is that firms with limited budgets and resources may initiate the mechanistic approach of service recovery using process guidelines. Firms may firstly provide a formal procedure to ensure a timely response to customers by recording and forwarding failures in a quick and structured way. Sequentially, firms may set up a formal policy that allows for generous compensation for customers.

Second, when the firm provides service recovery process guidelines to frontline employees, the importance of empowerment is mitigated. This finding indicates that in a relatively stable environment, providing process guidelines to frontline employees is sufficient, since they spend most of their time performing routine tasks. On the contrary, empowerment facilitates the influence of compensation guidelines on recovery efficacy. Empowerment removes some of the constraints imposed on employees and encourages flexibility while satisfying customer

expectations (Robinson et al. 2011). Empowered employees feel better about their jobs and more enthusiastic about serving customers (Bowen and Lawler 1992). Accordingly, managers should give authority to frontline employees and encourage them to use their own judgment while compensating customers. However, this result should be interpreted with caution. As suggested by Miller et al. (2000), empowerment must come with knowledge and the ability to effectively deal with service encounters. In other words, managers should pick suitable employees who are capable of compensating customers appropriately and then trust those employees' judgment. In this way, service recovery compensation guidelines can stimulate recovery efficacy, which is derived from empowerment.

Third, recovery culture facilitates the influence of behaviour guidelines on recovery efficacy. Behaviour guidelines include not only formal procedures, but also employees' positive attitudes in terms of showing concern and politeness to customers, even when the customer is obviously wrong. Recovery culture indicates whether or not the firm's leadership supports employees in their efforts to engage in effective recovery practices, and instils customer-oriented values in employees (Gonzalez et al. 2010). To achieve this, managers should cultivate a recovery culture characterized by open communication and mutual trust, to better support employees' recovery behaviours.

6.3 Research limitations and future directions

There are several limitations associated with this study. First, this study investigates service recovery failure on online auction websites. Future research aimed at replication should examine the model using different types of online service failure or retailers (e.g. online banks). Second, this study is conducted in Taiwan. Future research may include a cross-cultural component in order to enhance the generalizability of the results. Third, this study uses cross-sectional data. Future researchers can collect data longitudinally to look for changes over time.

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Appendix 1: Questionnaire items of this study

Research construct	Source
Mechanistic approach of online service recovery	
Process guidelines ($r_{wg} = 0.79$; $ICC(1) = 0.92$; $ICC(2) = 0.98$)	Homburg and Fürst (2005)
Guidelines for registering and processing online service recovery....	
(1) Are clearly defined	
(2) Are relatively simple	

Research construct	Source
<ul style="list-style-type: none"> (3) Include instructions to inform customers about the current status of failure incidents within a reasonable period of time (4) Instructions to record recovery information in a fast, complete, and structured manner (5) Include instructions to forward recovery information to the person in charge in a fast, complete, and structured manner 	
Behaviour guidelines ($r_{wg} = 0.75$; ICC(1) = 0.93; ICC(2) = 0.98)	
Guidelines for employees' behaviour towards online service recovery....	
<ul style="list-style-type: none"> (1) Are clearly defined (2) Are relatively simple (3) Include instructions to be polite and helpful (4) Include instructions to show concern (5) Include instructions to take responsibility 	
Compensation guidelines ($r_{wg} = 0.72$; ICC(1) = 0.92; ICC(2) = 0.98)	
Guidelines for providing compensation to customers towards online service recovery...	
<ul style="list-style-type: none"> (1) Are clearly defined (2) ¹Are relatively simple (3) Allow for a generous redress (4) Include instructions that the type of redress should be in line with customers' needs 	
Organic approach of online service recovery	
Empowerment ($r_{wg} = 0.70$; ICC(1) = 0.42; ICC(2) = 0.71)	Robinson et al. (2011)
<ul style="list-style-type: none"> (1) Management allows me complete freedom in my work (2) Management allows me to use my own judgment when solving problems (3) Management lets me do my work the way I think best (4) Management allows employees a high degree of initiative (5) Management trusts employees to exercise good judgement 	
Recovery culture ($r_{wg} = 0.71$; ICC(1) = 0.58; ICC(2) = 0.87)	Homburg and Fürst (2005), Gonzalez et al. (2010)
<ul style="list-style-type: none"> (1) Management regularly communicates recovery management goals to us (2) Management is primarily interested in preventing failures from reoccurring rather than blaming employees (3) Customer-oriented values and norms are deep-seated (4) Management recognizes that sometimes customer expectations will not be met (5) Management recognizes that we should be supported in our efforts to satisfy customers 	
Recovery efficacy (Cronbach's $\alpha = 0.92$)	Smith et al. (2010)
<ul style="list-style-type: none"> (1) When I attempt service failure recoveries, I am confident that I can handle it (2) I judge my recovery ability to be high> 	

Research construct	Source
(3) When I set a goal to successfully recover from a service failure, I am usually able to succeed	
(4) Even if I fail at a recovery task, I remain confident that I can succeed the next time	
Recovery accountability (Cronbach's $\alpha = 0.86$)	Hochwarter et al. (2007)
(1) I am held accountable for my actions for service recovery	
(2) If things don't go the way they should, I will hear about it from management	
(3) I often have to explain why I do certain things for service recovery	
(4) Co-workers, customers, and supervisors closely scrutinize my efforts on service recovery	
Recovery performance (Cronbach's $\alpha = 0.82$)	Ashill et al. (2008), Smith et al. (2010)
(1) All things considered, this frontline employee handles customers quite well	
(2) All things considered, this frontline employee satisfies customers' needs	
(3) I feel that customers are pleased with this frontline employee's effort to solve the problems	
(4) I think that customers respond positively to the failures associated with this frontline employee recovery	

¹ Item deleted after factor analysis

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