



Effect of service recovery on customers' perceived justice, satisfaction, and word-of-mouth intentions on online shopping websites



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ABSTRACT

As consumers become better informed and more demanding about their purchase of services, service provider's failure to satisfy all consumers during delivery of service is unavoidable. Consequently, to alleviate consumer dissatisfaction that results from service failure has become important. However, empirical consensus has been lacking on the effects of various service recovery activities. Thus, this study examines the impact of different types of service recovery on customers' perceptions of justice, post-recovery satisfaction, and word-of-mouth (WOM) intentions. The results indicated that consumers' perceptions of distributive and interactional justice differ by the types of service recovery and supported significant relationships among perceptions of justice, satisfaction, and WOM intentions. The results implied that consumers respond differently to different types of service recovery and that consumers particularly favor apology among types of service recovery.

1. Introduction

In today's online markets, consumers are better informed, more demanding, and more knowledgeable about products and services (Miller et al., 2000); thus, service providers cannot avoid failing to satisfy consumers' ever-increasing demands during service delivery. As such, it is impossible for service providers to completely avoid service failure, which refers to service mishaps that result in customer dissatisfaction. Since unsatisfied customers often switch brands, engage in negative word-of-mouth (WOM), and collapse loyalty (Miller et al., 2000), it is important to resolve customer dissatisfaction. Thus, increasing research and business attention is being given to service recovery as a significant marketing strategy to retain customers and maintain a relationship with customers (Maxham, 2001; Maxham and Netemeyer, 2002; McCollough et al., 2000). Service recovery is defined as the effort of a service provider to resolve a problem caused by a service failure and restore customer satisfaction (Lovelock and Wirtz, 2007).

In particular, determining the most effective type of service recovery for a given service failure is an important issue. Previous service recovery studies have categorized recovery types into psychological recovery and tangible recovery. Psychological recovery provides customers who have experienced a service failure with an apology and empathy, while tangible recovery offers physical compensation for

customers' real damages, such as coupons, discounts, and free products (Bell, 1992; Zemke, 1994). Although psychological recovery is an inexpensive and effective alternative for a company, Clark et al. (1992) asserted that consumers prefer tangible recovery that provides a physical value. Despite the importance of investigating the differences between the types of recovery, research relating to this issue has rarely been conducted. Determining the relative effects of different types of service recovery on consumer satisfaction will provide significant strategic help for marketers seeking to find more effective and cost-efficient recovery types for their target consumers in the online market. As a cost-efficient recovery activity, apology would represent a more decisive activity for consumer satisfaction than compensation; in turn, marketers may save their investment without developing any tangible or monetary compensation for their consumers. Thus, this study had focused on the relative effects of the different types of service recovery (i.e., apology, compensation, and both apology and compensation) on customer's evaluation process and their behavioral intentions.

Most prior studies of service recovery have examined perceived justice in the relationship between service recovery and satisfaction as a part of consumers' evaluation process (DeWitt et al., 2008; Gelbrich and Roschk, 2011; Homburg and Fürst, 2005; Maxham and Netemeyer, 2002; Smith et al., 1999; Voorhees and Brady, 2005). Perceived justice refers to how an individual consumer evaluates the fairness of a company's activities and is generally broken into three

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categories: distributive, procedural, and interactional justice (Furby, 1986; Homburg and Fürst, 2005; Smith et al., 1999). Prior studies have supported the direct effect of perceived justice on a customer's post-recovery satisfaction (Chang and Chang, 2010; Ha and Jang, 2009; Kau and Loh, 2006; Maxham, 2001; Maxham and Netemeyer, 2002; Schoefer, 2008; Smith et al., 1999; Tax et al., 1998; Wirtz and Mattila, 2004) as well as the mediating role of perceived justice between service recovery activities and post-recovery satisfaction (Gelbrich and Roschk, 2011; Homburg and Fürst, 2005; Smith et al., 1999). However, there has been mixed results on the relative effects of different types of service recovery on perceived justice (Davidow, 2003; Hui and Au, 2001; Levesque and McDougall, 2000; McCollough et al., 2000; Smith et al., 1999; Varela-Neira et al., 2010), as well as the relative effect of each dimension of justice on post-recovery satisfaction and behavior (Levesque and McDougall, 2000). Therefore, this study focused to specifically investigate the relative effectiveness of types of service recovery on perceived justice and post-recovery satisfaction to add empirical evidence to bridge the gap in the existing literature on this issue.

Furthermore, previous studies have primarily focused on the typology and effects of service failure and recovery on customers' responses in the off-line service industry; few studies have investigated the online shopping context (Kuo and Wu, 2012). However, service failure is likely to be more unavoidable and influential on consumer behavior in an online shopping environment in accordance with the characteristics of the online shopping environment. Despite the importance of studying service failure and recovery in the context of online shopping, the subject has received relatively little attention; the few studies on it have focused on the evaluation process, and their results have not yet reached a consensus. For instance, Kuo and Wu (2012) have studied consumers' evaluation of service recovery in the online shopping context, but that research focused on consumer responses rather than comparing the effects of each type of service recovery on consumers' evaluating process. In addition, the mixed results on the relative effects of different dimensions of perceived justice still appear in this study. Online consumers are more informed, demanding, knowledgeable, and capable of comparing many alternatives than offline consumers (Miller et al., 2000; Shankar et al., 2003); therefore, researchers need to further study the relative effects of different types of service recovery and the dimensions of justice to better understand various consumer attributes and expectations and develop more effective service-recovery strategies to meet each consumer's expectations in the online market. Thus, this study focuses on an online shopping environment to examine how service recovery affects consumer behavior in that environment by comparing different types of service recovery.

This study intended to examine the impact of different types of service recovery on customers' perceived justice, post-recovery satisfaction, and WOM intentions in the online shopping context. Academically, we intend to bridge the gap in the existing literature regarding the relative effects of different types of service recovery and each different dimension of justice on consumers' evaluation processes of service recovery. From a managerial perspective, the study represents a strategic framework that marketers may use to develop the most effective and cost-efficient types of service recovery that would best fit the target customers and help maintain customer relationships, particularly in the online shopping context.

2. Theoretical framework

2.1. Justice theory

Since service recovery research has focused on the concept of justice from the social exchange perspective, justice theory has primarily been applied to the research of service recovery as a theoretical framework (Schoefer, 2008; Wirtz and Mattila, 2004). Consumers generally expect

gains equivalent to their costs—an outcome they consider to be justice (McCull-Kennedy and Sparks, 2003). If consumers perceive that they have paid more in costs than they gained for the product or service, they feel that they are being treated unfairly (Kuo and Wu, 2012), which is referred to as a service failure. Thus, justice is a significant concept used to explain a service failure and recovery; it consequently affects consumer satisfaction.

Consumers generally evaluate justice related to service recovery in three dimensions—distributive justice, procedural justice, and interactional justice—all of which are based on the service recovery consumers receive from a company and how they receive it (Chebat and Slusarczyk, 2005; Collier and Bienstock, 2006). Distributive justice refers to the service recovery consumers receive from the company, and procedural justice relates to how they receive it—particularly the recovery process (Kuo and Wu, 2012; McCull-Kennedy and Sparks, 2003). Through the procedural components, consumers tend to evaluate the flexibility, efficiency, and transparency of the recovery process (Wirtz and Mattila, 2004). Interactional justice is defined as fairness during the process of interaction and communication between the consumer and the company in solving the problems resulting from the service failure (Chebat and Slusarczyk, 2005; McCull-Kennedy and Sparks, 2003).

According to the existing service-related literature, consumers' perception of justice significantly influences their post-purchase behavior. Ha and Jang (2009) found that perception of justice positively influences consumers' purchase intentions. Maxham and Netemeyer (2003) suggested that the perception of procedural justice motivates positive WOM intentions and higher interactional justice induces consumers to repurchase. In addition, interactional justice is a determinant of consumer trust for the service provider and consumer satisfaction (Tax et al., 1998). In particular, most researchers support the significant effect of perceived justice on post-recovery satisfaction (Chang and Chang, 2010; Ha and Jang, 2009; Kau and Loh, 2006; Maxham, 2001; Maxham and Netemeyer, 2002; Schoefer, 2008; Smith et al., 1999; Tax et al., 1998; Wirtz and Mattila, 2004). However, regarding the relative effect of each dimension of justice, no consensus has been reached (Levesque and McDougall, 2000). Some studies indicate that distributive justice is the most decisive predictor of satisfaction (Homburg and Fürst, 2005; Patterson et al., 2006; Smith et al., 1999) while others suggest that interactional or procedural justice are the most significant factors in consumer satisfaction (Maxham and Netemeyer, 2002; Tax et al., 1998; Voorhees and Brady, 2005).

The three dimensions of justice definitely represent important determinants for consumer post-purchase behavior and thus we need to add more empirical evidence to bridge the gaps in prior studies and enhance the understanding it. McCollough et al. (2000) asserted that consumers assign more importance to both interactional and distributive justice due to the inherent difficulty in comparison to procedural justice. Thus, this study used typical examples of interactional and distributive justice, such as apologies and compensation, as stimuli.

3. Literature review

3.1. Service failure and recovery

Maxham (2001) identified a service failure as a mistake or problem that consumers experience while shopping or communicating with companies. Bitner et al. (1990) divided service failures into three groups: service delivery failures, failures related to customer needs and requests, and failures related to unprompted and unsolicited employee actions. More to the point, service failure leads to customer dissatisfaction and collapsing relationships with customers. Thus, service recovery has been a critical and effective business strategy to win back dissatisfied customers and maintain relationships with them (Maxham, 2001). Service recovery refers to the service providers' response and

process in solving problems that result from service failures (Weun et al., 2004). Effective service recoveries enable service providers to regain customer satisfaction, maintain customer loyalty, and retain long-term relationships with customers (Kuo and Wu, 2012; McCollough et al., 2000). Therefore, the importance and effects of service recovery are critical for marketers and researchers to better understand.

In particular, the online shopping environment has more diverse causes of service failures than off-line, such as problems with the delivery process, packaging errors, website design, customer service, bad information, payment, security, and privacy (Forbes et al., 2005; Holloway and Beatty, 2003). Furthermore, because of more interactive communication, consumers in online environments are more informed and demanding than in off-line (Miller et al., 2000; Wind and Rangaswamy, 2001). Thus, service providers are more likely to dissatisfy customers in online shopping environments, and consumers easily switch service providers by several clicks (Shankar et al., 2003). Nevertheless, service recovery research has focused on the limited constructs and relationships without examining a wide range of relationships (Levesque and McDougall, 2000; Liao, 2007; Maxham and Netemeyer, 2002; Smith et al., 1999) and particularly few studies have investigated the effects of service recovery in online shopping contexts (Kuo and Wu, 2012). Thus, this study focused on the online retail context to examine the effects of service recovery on consumer behavior in service failure situations.

According to the extant service literature, service recovery is typically classified into tangible and psychological recovery (Miller et al., 2000). Tangible recovery refers to tangible compensation provided to customers to reduce real damages through free services, refunds, gifts, discounts, and coupons. As a psychological recovery, apology, empathy, and explanation are typically applied to rectify the problem caused by the service failure and improve customer satisfaction (Kuo and Wu, 2012). Although prior literature has focused on apology and compensation as separate activities, few studies examined the service recovery type of “both apology and compensation,” which can be often found in real business setting. Thus, this study included a group of ‘both apology and compensation’ as a separate category of service recovery.

The results of prior studies vary on the relative effectiveness of service recovery types on the dimensions of perceived justice (Davidow, 2003; Hui and Au, 2001; Levesque and McDougall, 2000; McCollough et al., 2000; Smith et al., 1999; Varela-Neira et al., 2010). Most prior studies have confirmed that distributive justice is primarily perceived by monetary compensation—for instance, coupons, discounts, and refunds (Blodgett et al., 1997; Goodwin and Ross, 1992; Hoffman and Kelley, 2000; Kuo and Wu, 2012; McColl-Kennedy and Sparks, 2003). Even though several researchers have ascertained the significant effect of compensation on customers’ perceptions of distributive justice (Blodgett et al., 1997; Mattila, 2001; Smith et al., 1999; Tax et al., 1998), a lack of empirical consensus still exists regarding this relationship (Sun and He, 2014). Interactional justice is generally linked to apology (Clemmer and Schneider, 1996; Goodwin and Ross, 1992; Smith et al., 1999), whereas Tax et al. (1998) affirmed apology’s linkage with perceived distributive justice. Procedural justice is particularly decided according to the recovery process—for instance, refund policy and time and speed of the process (Blodgett et al., 1997; Kuo and Wu, 2012; Tax et al., 1998). As such, no consensus has yet been reached on the relative effect of service recovery types. Thus, this study examined the impact of different types of service recovery (i.e., apology, compensation, or both) on customers’ perceptions of justice in the context of online retailing. The following hypotheses are proposed:

H1a. A customer’s perceived distributive justice differs with the types of service recovery to which customer is exposed.

H1b. A customer’s perceived procedural justice differs with the types of service recovery to which customer is exposed.

H1c. A customer’s perceived interactional justice differs with the types of service recovery to which customer is exposed.

3.2. Satisfaction

Consumer satisfaction refers to an emotional, favorable, and subjective evaluation; it derives from the psychological state relating to customers’ purchasing behavior (Oliver, 1981). Satisfaction is closely related to consumer attitudes and intentions, which are part of consumers’ behavior (Holloway et al., 2005) and directly influences consumers’ positive behavioral intentions, such as repurchasing and loyalty, as well as positive WOM interactions (Gee et al., 2008). In particular, satisfaction is a critical issue in the service recovery context because dissatisfied customers who receive appropriate recovery show higher positive behavioral intentions than customers satisfied with the initial services (Maxham and Netemeyer, 2002). Prior literature has confirmed a significant relationship between customer’s perceived justice and satisfaction (Blodgett et al., 1997; Goodwin and Ross, 1992; Kau and Loh, 2006; Maxham and Netemeyer, 2002; Smith et al., 1999). Many researchers have confirmed that perceived justice mediates the relationship between service recovery activities and customer satisfaction (Maxham and Netemeyer, 2003; Smith et al., 1999). The prior literature has represented consumers’ perceptions of justice in three dimensions in the relationship with post-recovery satisfaction: distributive, procedural, and interactional justice (Tax et al., 1998; Weun et al., 2004). Thus, this study proposes the relationship between customers’ perceived justice and satisfaction as follows.

H2a. A customer’s perceived distributive justice significantly influence his or her post-recovery satisfaction.

H2b. A customer’s perceived procedural justice significantly influence his or her post-recovery satisfaction.

H2c. A customer’s perceived interactional justice significantly influence his or her post-recovery satisfaction.

3.3. WOM intentions

WOM is generally defined as “all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers” (Hennig-Thurau and Walsh, 2004, p. 51). WOM communication directly influences consumer decisions on purchasing and loyalty, and thus researchers have widely studied the effects of WOM on consumer behavior for the past 50 years. In the service-related studies, WOM has been emphasized because consumers are prone to rely on WOM information to reduce perceived risks prior to service purchase (Haywood, 1989). Moreover, WOM communication is becoming a critical factor in service recovery-related studies because an unsatisfied consumer who encounters a service failure may become highly engaged in negative WOM about the service provider (Kau and Loh, 2006). Positive or negative WOM communication is highly related to consumers’ behavioral intentions; consequently, it affects corporate sales and profits.

Consumers who encounter appropriate services tend to engage in positive WOM communication, and positive WOM has been studied as an outcome of consumer satisfaction in service recovery (Kau and Loh, 2006). Blodgett et al. (1997) found that satisfied consumers with proper services positively influence their WOM intentions. Collier and Bienstock (2006) found that consumers unsatisfied by service recovery become involved in negative WOM. Thus, consumer satisfaction has been studied as a detrimental factor in consumers’ WOM intentions (Weun et al., 2004). Therefore, this study anticipated that customer satisfaction influences customer WOM intentions, as the following hypothesis indicates:

H3. A customer’s post-recovery satisfaction level positively influences customer’s WOM intentions.

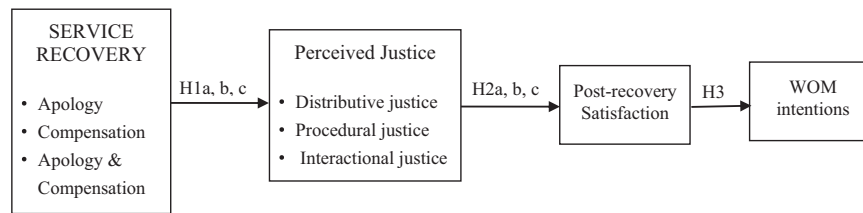


Fig. 1. Research model.

4. Methodology

4.1. Research design

The main purpose of this study is to examine the effect of different types of service recovery (e.g., apology, compensation, and both an apology and compensation) on customers' perceived justice, post-recovery satisfaction, and WOM intentions. The constructed research model, considering the purpose of this study, is presented in Fig. 1. Multivariate analysis of variance (MANOVA) was conducted to examine the differences in customers' perceived justice across the three types of service recovery (H1a, H1b, H1c). Multiple and bivariate regression analyses were conducted to examine the relationships among perceived justice, post-recovery satisfaction, and WOM intentions (H2 and H3).

To examine the research hypotheses, this study employed a scenario-based experimental survey. This method could reduce the ethical problem of forcing participants to experience negative situations related to service failures in a real-life setting. Moreover, scenario-based experiments help researchers to exclude participants' memory bias, individual differences, and personal circumstances in relation to the research context (Grewal et al., 2008).

In this study, the online apparel market context was selected as stimuli due to the fact that current consumers may commonly encounter service failures and recovery in the context of online apparel shopping. To avoid potential bias relating to brand engagement, a fictitious apparel brand name, XXX, was provided in the scenarios. The participants were asked to read the scenario about the service failure to imagine that they are faced with the situation of service failure. Afterwards, scenarios for three types of recovery, an apology, compensation, and an apology combined compensation, were provided for measuring perceived justice, post-recovery satisfaction, and WOM intentions.

4.2. Sample selection and data collection

Prior to conducting the main survey, a pretest was conducted to measure the reliability and effectiveness of the stimuli and the questionnaire. The survey questionnaire was organized into six pages; 30 undergraduate students participated in the pretest. In the pretest, participants were provided with three scenarios about a service failure situation and questions asking about pre-recovery satisfaction to select the most proper scenario for a service failure. Subsequently, participants were provided with a scenario for each type of service recovery, apology and compensation, with questions about the three variables: perceived justice, satisfaction, and WOM intentions. As a result of the pretest, one service failure scenario was selected, and several minor changes were implemented to enhance the clarity and validity of the stimuli and the questions.

Using Qualtrics.com, 368 participants were recruited for the main survey. The participants consisted of 49.7% females and 50.3% males, with ages ranging from 18 to 50 years old (mean=30). More than half (54.9%) of the respondents were between the ages of 18 and 30. Most of the respondents were highly educated, with 60.6% studying at the college level and holding a college or graduate degree. In total, 69.8% of the respondents were Caucasian American, while 30.2% represented

other ethnic groups (e.g., African American or Hispanic). A majority of the participants were single (57.3%), while 36.7% of the respondents were married. Nearly two thirds (62.0%) had full-time or part-time jobs, whereas 26.1% of the respondents were not employed at all. Half of the participants (50.3%) stated that their income level was between \$25,000 and \$75,000.

Participants were randomly assigned to one of three groups: apology, compensation, and both an apology and compensation. Prior to exposure to the experimental conditions of the types of service recovery, participants were asked to read a written scenario describing a service failure in an online apparel company. Participants in each group were subsequently provided with the scenario for each type of recovery, among apology, compensation, and both an apology and compensation recovery. The first group was subjected to a situation related to apology recovery. The other group had a scenario about compensation recovery, and the participants in the third group were received a scenario of an apology combined compensation. The instructions were provided to participants to imagine themselves as experiencing situations described in the scenarios. Participants were asked to answer to the questions about the three variables, perceived justice, satisfaction, and WOM intentions.

4.3. Scenarios

In this survey, respondents in each group were provided with two scenarios—namely, a service failure scenario and service recovery scenario, among apology, compensation, and both an apology and compensation recovery. They were then asked questions related to three variables: perceived justice, post-recovery satisfaction, and WOM intentions. As a service failure scenario, this study used real consumer reviews, which represent the service failure situations that the related literature have classified. According to the previous service literatures, the types of service failure can be classified into delivery, customer service, payment, security, slow service, packaging error, response to customer needs and requests (Forbes et al., 2005; Holloway and Beatty, 2003).

Through the pretest to select the most proper service failure scenario, we chose a customer review of service failure, which complained about an online shopping website's slow shipping and poor communication issues. We conducted the manipulation check to ensure that the research participants acknowledge the service failure scenario as a failure situation using three measurements measuring customer dissatisfaction, which were adapted from Maxham (2001) ("I am unsatisfied with this company's service," "In my opinion, this company provides a unsatisfactory service," and "How dissatisfied are you with the quality of this company's service?"). These items were measured by seven-point Likert-type scale (1=strongly disagree and extremely dissatisfied; 7=strongly agree and extremely satisfied). The mean score of participants' dissatisfaction of the service failure scenario was 5.873, and the standard deviation was 1.087. This result shows that the participants recognized the service failure scenario as a dissatisfying situation as we intended.

Respondents in each group were subsequently provided with the scenario about each type of recovery with the questions incorporated into the three variables. Service recovery is typically classified into tangible and psychological recovery (Miller et al., 2000). Thus, this

Table 1
Multivariate analyses of variance (MANOVA) results for perceived justice.

Variable	df	Sum of Squares	Mean Square	F	Sig.
Distributive Justice	2	18.042	9.021	3.611	0.028*
Procedural Justice	2	6.925	3.463	1.491	0.226
Interactional Justice	2	27.048	13.524	5.697	0.004**

** p < 0.01.
* p < 0.05 level.

Table 2
Cell means by experimental conditions.

Variable	Experimental Group		
	Apology (N=122)	Compensation (N=124)	Apology & Compensation (N=122)
Means (SD)			
Distributive Justice	3.896 (1.674)	3.405 (1.456)	3.848 (1.605)
Procedural Justice	4.123 (1.625)	3.811 (1.472)	4.072 (1.471)
Interactional Justice	4.432 (1.602)	3.877 (1.571)	4.467 (1.445)

study used three scenarios about apology, compensation, and both an apology and compensation for presenting the service recovery activity. Apology is a typical type of psychological recovery (Zemke, 1994), and this study developed an apology letter written by a fictitious customer service manager, which specified and apologized about a delivery and communication problem. Compensation is a type of tangible recovery, and this study developed a scenario of coupon, which is a typical example of tangible recovery (Kuo and Wu, 2012; McColl-Kennedy and Sparks, 2003). This coupon provides 10% off, which is valid for up to \$10 off of the customer's next purchase in a brief description. As a combined service recovery, we attached the coupon to the apology letter that we provided to the survey respondents. As Tables 1 and 2 show, the results of MANOVA, which we conducted to examine the hypotheses, also showed that research participants perceived the types of service recovery differently depending on distributive and interactional justice. Thus, we concluded that the manipulated service recovery scenarios were perceived differently as intended.

4.4. Measurement

Participants were asked to answer the questions to measure the following variables.

4.4.1. Perceived justice

Respondents were asked to indicate their perceived justice in three dimensions of perceived justice. Four items for measuring perceived distributive justice (“The outcome I received was fair,” “I got what I deserved,” “In resolving the problem, this company gave me what I needed,” and “The outcome I received was right”) were adapted from Smith et al. (1999). The reliability of the scales was determined by the calculation of coefficient alpha. The reliability of the scales measuring perceived distributive justice was satisfactory with coefficient alpha of 0.93. Four items for measuring perceived procedural justice (“I think my problem was resolved in the right way,” “I think this company has good policies and practices for dealing with problems,” “Despite the trouble caused by the problem, this company was able to respond adequately,” and “This company proved flexible in solving the problem”) were adapted from del Rio-Lanza et al. (2009). The scale reliability was acceptable with 0.92. Four items for measuring perceived interactional justice (“This company was appropriately con-

cerned about my problem,” “This company put the proper effort into resolving my problem,” “This company's communications with me were appropriate,” and “This company gave me the courtesy I was due”) were adapted from Smith et al. (1999). The reliability coefficient of these scales was 0.92 indicating adequate reliability. All of the above items were presented on seven-point Likert-type scales (1=strongly disagree; 7=strongly agree). Harman's single-factor test was conducted to test the common method bias. Harman's single-factor test is one of the most widely used techniques (Podsakoff et al., 2003). In prior studies, even though the three dimensions of perceived justice can be extracted as one factor in the exploratory factor analysis (EFA) because of high correlations and poor discriminant validity (Colquitt and Shaw, 2005; Davidow, 2003; Liao, 2007), researchers have continued to model them as three justice dimensions due to their specific conceptual importance (Chebat and Slusarczyk, 2005; Collier and Bienstock, 2006; Ha and Jang, 2009; Smith et al., 1999; Sparks and McColl-Kennedy, 2001; Tax et al., 1998; Voorhees and Brady, 2005). Thus, this study also established three dimensions of perceived justice, and we have therefore used a fixed number of factors based on the perceived justice theory. Accordingly, we used an EFA with varimax rotation using a fixed number of factors. In this analysis, three factors were extracted, which explained approximately 36%, 29%, and 19% respectively and collectively explained approximately 84% of the total variance.

4.4.2. Post-recovery satisfaction

Customer post-recovery satisfaction was measured with three items adapted from Kuo and Wu (2012) and Mattila (2001). The scale items included “How satisfied would you be with the company's handling of the problem? (1=very dissatisfied; 7=very satisfied),” “Overall, I felt that this service recovery encounters would have been good (1=strongly disagree; 7=strongly agree),” and “Overall, I was satisfied with the way this complaint was resolved (1=strongly disagree; 7=strongly agree).” All of the items were measured using seven-point Likert-type scales. The reliability for these scales was satisfactory with coefficient alpha of 0.95.

4.4.3. Word-of-mouth intentions

Customer WOM intentions were measured by three items adapted from Maxham (2001): “How likely are you to spread positive WOM about this company? (1=very unlikely; 7=very likely),” “I would recommend this company to my friends (1=strongly disagree; 7=strongly agree),” and “If my friends were looking for an apparel products, I would tell them to try this company's online shopping mall (1=strongly disagree; 7=strongly agree).” All of the items were measured using seven-point Likert-type scales. The scale reliability of WOM intentions was 0.96, which is adequate level. At the end of this questionnaire, the respondents were asked to answer the demographic questionnaire. The high-scale reliability of each variable represents the given measurements reliably measure each variable as intended. Therefore, we used the average value of the measurements per variable as the overall variable values for the data analyses.

5. Results

5.1. Hypothesis 1

MANOVA was used to investigate the differences among the types of service recovery (apology, compensation, and both an apology and compensation) in customers' perceived justice (H1a, H1b, and H1c). The Pillai's trace test revealed that the MANOVA results of this study are statistically significant (p=0.001). Therefore, customers' perceived justice significantly depends on which service recovery method the customer received. Pillai's criterion has generally been found to be more robust in testing the significance of the results (Hair et al., 1998). As Table 1 shows, the results of the MANOVA analysis support the significant difference among the types of service recovery in customers'

perception of distributive justice ($F_{2, 365}=3.611, p < 0.05$) and interactional justice ($F_{2, 365}=5.697, p < 0.005$). These results partly support H1; customers' perceived distributive justice significantly differs across the types of service recovery (H1a), and interactional justice was also perceived differently according to the service recovery types (H1c). However, procedural justice wasn't perceived differently by service recovery types (H1b). Thus, H1a and H1c were supported, but H1b wasn't.

Table 2 presents the effects of service recovery types on customers' perceived justice as compared mean values of each variable. Customers perceive distributive justice more strongly as a result of an apology ($M=3.896$) and both an apology and compensation ($M=3.848$), but service recovery with only compensation ($M=3.405$) is the least affective on distributive justice. Perceived interactional justice also shows the highest mean value of an apology ($M=4.432$) and both an apology and compensation ($M=4.467$), but compensation ($M=3.877$) has the least mean value. We followed up these results with Tukey's HSD post-hoc tests. The multiple compared results show that mean scores for distributive justice were significantly different between apology and compensation ($p < 0.05$), but not between apology and both an apology and compensation ($p=0.971$) and compensation and both an apology and compensation ($p=0.073$). Mean scores for interactional justice were significantly different between apology and compensation ($p < 0.05$) and compensation and both an apology and compensation ($p < 0.01$), but not between apology and both an apology and compensation ($p=0.983$).

5.2. Hypotheses 2 & 3

Multiple regression analysis was implemented to examine H2, which is to test the effect of perceived justice on customers' post-recovery satisfaction. The independent variables for testing Hypothesis 2 were perceived distributive, procedural, and interactional justice, and the dependent variable was customers' post-recovery satisfaction. The results of the regression analysis testing Hypothesis 2 supported the significant relationship between perceived justice and post-recovery satisfaction with $F(3, 364)=684.849, p < 0.001$, indicating that 84.8% of the variance in post-recovery satisfaction was explained by three independent variables. Thus, Hypothesis 2 was supported.

According to the relative contributions of independent variables to explain customers' post-recovery satisfaction, perceived distributive justice ($\beta=0.221, p < 0.001$), procedural justice ($\beta=0.420, p < 0.001$), and interactional justice ($\beta=0.324, p < 0.001$) were significant determinants of post-recovery satisfaction. This result implies that customers' post-recovery satisfaction is affected by the level of perceived justice toward the service recovery offered by the service provider. The results of multiple regression analyses for H2 and H3 are reported in Table 3.

A bivariate regression analysis was implemented to examine the relationship between post-recovery satisfaction and WOM intentions. As Table 4 shows, the regression model for the relationship between those two variables (H3) was significant: ($\beta=0.862, p < 0.001$), with $F(1, 366)=1060.56, p < 0.001$. This model was explained with 74.3% of

Table 3
Regression results predicting post-recovery satisfaction.

Variable	Post-recovery Satisfaction				
	B	β	t-value	Tolerance	VIF
Distributive Justice	0.227	0.221***	4.921	0.205	4.885
Procedural Justice	0.450	0.420***	7.642	0.137	7.318
Interactional Justice	0.340	0.324***	7.712	0.234	4.275
R ²	0.848				
F	684.849***				

*** p < 0.001 level.

Table 4
Regression result.

Variable	WOM Intentions				
	B	β	t-value	Tolerance	VIF
Post-recovery Satisfaction	0.914	0.862***	32.566	1.000	1.000
R ²	0.743				
F	1060.557***				

*** p < 0.001 level.

the variance in WOM intentions by post-recovery satisfaction. Thus, Hypothesis 3 was supported. For each regression model, we assessed multicollinearity by tolerance and the variance inflation factor (VIF). VIF values ranged from 4.275 to 7.318, and all the values of tolerance exceeded 0.1. In prior studies, a cut-off value of 10 has been suggested as the maximum level of VIF, which is corresponding to the tolerance cut-off value of 0.1 (Hair et al., 1998; Kennedy, 1992; Marquardt, 1970; Neter et al., 1989). In accordance with this moderate cut-off value, we decided to further analyze the data despite a possible limitation from a lack of rigorous psychometric properties in the scores.

6. Discussion

This study confirms that within the context of service recovery, customers perceive distributive and interactional justice differently depending on the type of service recovery they receive. In contrast, procedural justice has no significant difference across the types of service recovery. An apology, provided either alone or in combination with tangible compensation, makes a particularly significant difference in customers' perceptions of distributive and interactional justice. In turn, customers' perceptions of justice significantly affect their post-recovery satisfaction, and, eventually, WOM intentions are improved by customer satisfaction. No consensus has yet been reached in prior literature regarding the effect of different types of service recovery and levels of perceived justice on customer satisfaction and behavioral intentions. Our study contributes to empirical evidence and enhances the understanding of service recovery to bridge the gaps remained in previous literature.

This study indicates that customers perceive distributive and interactional justice of service recovery differently in instances when they receive an apology—either alone or combined with tangible compensation. Customers more highly perceived distributive justice when they received an apology without compensation; on the other hand, customers more highly perceived interactional justice when they received both an apology and tangible compensation. This finding does not correspond with the prior studies that classified the dimensions of justice and types of service recovery. In most previous literature, distributive justice has generally been defined as monetary compensation (e.g., coupons and discounts); procedural justice with the process itself (e.g., refund policy and timelines of the process); and interactional justice with the company's communications (Chebat and Slusarczyk, 2005; Kuo and Wu, 2012; McColl-Kennedy and Sparks, 2003). That is to say, the results of this study reveal the critical issue that, in service-recovery literature, there is a lack of empirical evidence to support the classification that prior studies represent. Even though similar findings could be equally likely in an offline context, the new classification we found in this study might be applicable to the context of online retailing, especially due to the unique nature of the online retail environment. This finding implies that service-recovery research requires new investigations and approaches to establish the relationship of service-recovery activities with the dimensions of perceived justice according to particular industries and research contexts.

Furthermore, this study found that consumers could not significantly distinguish apology from combined recovery whenever they

perceived distributive and interactional justice. That is, a company may value an apology as equal to combined recovery with tangible compensation. Contrary to assertions made in prior studies, this finding implies that an apology may be considered the essential service recovery outcome, and that communication may resolve service failure experiences without tangible compensation. Though prior studies on the effect of different types of service recovery have provided mixed results depending on the research context, many researchers have emphasized compensation—particularly tangible compensation such as coupons and discounts (Mattila, 2001). Previous researchers have not ascertained the effects of service recovery strategies using apologies alone, without the being combined with tangible compensation (Miller et al., 2000). However, the results of this study emphasize the significant role of apology as an important method of service recovery. This result is likely due to the characteristics of the online shopping environment—the research context of this study. In online markets, companies must provide more interactive environments to customers. Mattila (2001) observed that consumers have less tolerance when shopping in environments that feature less customer-employee interaction; therefore, it may be difficult to recover customers who are dissatisfied with failed service delivery. In this environment, therefore, more customized customer-employee contact may positively affect customer perceptions of justice (Mattila, 2001). Earlier literature has also emphasized the importance of interactivity in online environments, indicating that it enhances consumers' shopping experiences, satisfaction, and trust in the business (Devaraj et al., 2002; Hoffman and Novak, 1996; Merrilees and Fry, 2003). Customers in online retailing environments expect better interactions and relationships with companies; therefore, online retail companies must develop more interactive service-recovery strategies by using apologies to restore customers and enhance customer satisfaction in instances of service failure.

From a management perspective, the findings of this study offer service providers a strategic implication for service recovery. If customers equate receiving an apology, rather than tangible compensation, with justice, managers may be able to avoid spending for monetary compensation to recover customers. That is to say, the most cost-effective recovery strategy for companies may be to focus on apologies. Maxham (2001) suggests that spending resources on service recovery will not always increase customer satisfaction and that demonstrating the company's sincerity to customers is not always a matter of money. Chebat and Slusarczyk (2005) also pointed out that consumers seem to prefer sincerity or courtesy from a company to any tangible compensation that the company provides. Thus, managers need to develop more effective strategies of apology, such as communication channels that deliver apology messages as well as the proper method of apology to apologize to dissatisfied customers—thereby saving company resources by avoiding monetary compensation.

In our study, procedural justice was not shown to make any difference across various types of service recovery. Moreover, procedural justice seems to be highly correlated with the other justice dimensions if we use more strict cut-off values of tolerance (below 0.19) and VIF (above 5.3) as suggested by Hair et al. (2006). This could be due to the research setting, in which we used only two representative types of recovery—apology and compensation. To elaborate, procedural justice may not be related to apology and compensation but, rather, more to a policy of providing recovery in a timely manner. Thus, research participants of this study might not be able to distinguish the concept of procedural justice from other measurement items of distributive and interactional justice, and thus research participants would rather interpret the items of procedural justice as a general justice concept. On the other hand, the findings of this study also reveal that, among the three dimensions of justice, procedural justice influences customers' post-recovery satisfaction the most. This type of justice could be interpreted as the most important determinant in influencing customer satisfaction in online retailing. These results

imply that managers need to consider other methods of service recovery in addition to apology and compensation. Compared to distributive and interactional justice, procedural justice rarely represents the most effective means of influencing consumers' post-recovery satisfaction. Many researchers have determined distributive justice to be the most effective strategy (Mattila, 2001; Maxham and Netemeyer, 2002). Despite the context-specific attribute of service recovery (Levesque and McDougall, 2000), previous studies have considered procedural justice the least important predictor of post-recovery satisfaction (Mattila, 2001).

Regarding the research context, procedural justice affects customer satisfaction the most in an online retail environment, which entails less human contact. It may be easier for customers to perceive justice and evaluate service recovery when they assess the process of service recovery provided by an online shopping website. Therefore, service providers should emphasize the procedural aspects of service recovery in order to increase customers' post-recovery satisfaction in an online retail environment. These aspects might include a stable and reliable policy for solving customer complaints, prompt and timely responses to dissatisfied customers, and a convenient and comfortable process of service recovery for customers. Furthermore, a strategy that emphasizes the procedural aspect of service recovery may also be cost-effective for a company. Determining the appropriate level of spending resources to recover a dissatisfied customer presents a difficult challenge, considering the various characteristics of customers; and spending resources for service recovery may be very costly for a company. Thus, finding a way to process service recovery in a manner that more effectively meets customer needs would save company resources and satisfy customer demands.

The significant theoretical implication of this study is that we provide empirical evidence for the relative effects of different types of service recovery and the different dimensions of perceived justice on customer satisfaction in online retailing. Prior studies of service recovery have produced mixed results. In light of this discussion, our study found a new classification of apology with distributive justice and combined recovery with interactional justice in an online retail environment. These results do not correspond to the classifications defined in most prior studies. Considering these findings and their implications, we suggest that a new approach should be applied to further service-recovery research, depending on the type of industry or its market attributes. By increasing empirical evidence in the existing literature on the effect and role of service recovery, we endeavor to decrease the theoretical ambiguity that remains in service-recovery research, by demonstrating the context-specific attributes of service recovery.

In terms of managerial implications, this study suggests that service providers can develop more cost-effective service recovery activities by using apologies; furthermore, companies must also focus on service recovery procedures. As other researchers have pointed out, general and traditional service recovery strategies are not always applicable to all customers (Levesque and McDougall, 2000; Mattila, 2001); rather, service recovery strategies should be tailored to specific situations. In online retail—the research context of this study—an apology should first be provided to a dissatisfied customer; and then, afterward, the offending company should develop effective procedures to deliver service recovery. Service recovery strategies that exclude tangible compensation will be more cost effective. Moreover, companies need to do more than saving money by simply avoiding tangible compensation; they need to develop more interactive and tailored methods of apology by which they can meet their customers' expectations.

7. Limitations

Despite its contributions, this study has several limitations that provide direction for future research. First, this study classified service recovery types for investigating the effects of each type on consumers

into three types: apology, compensation, and both an apology and compensation. As the results show, participants weren't aware of differences of procedural justice of service recovery across these three types of service recovery. This study didn't suggest proper examples to investigate the effect of procedural justice. Therefore, future researchers may want to compare more service recovery types to investigate more precisely each dimension of consumers' perceived justice. Second, this study investigated the differences of the effect of three service recovery types on perceived justice by developing and applying the stimuli of an apology letter and a coupon, which represents psychological recovery and tangible recovery respectively. In terms of the research manipulations, this study employed only one scenario to represent each type of service recovery. Thus, the results of this study may neglect potential differences in the effects of service recovery according to different levels of apology and compensation. In future research, different levels of each service recovery type may generate different responses. For instance, future research might vary the level of apology messages and the amount of tangible compensation.

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