

## **ORGANIZATIONAL AND CUSTOMER MODERATORS OF SERVICE RECOVERY ON CONSUMER FORGIVENESS IN HEALTHCARE**

L. Jean Harrison-Walker  
University of Houston-Clear Lake

### **ABSTRACT**

*Marketing researchers want to better understand service recovery in terms of how failures impact consumers and the effectiveness of recovery strategies. Given the critical mediating role of forgiveness between service recovery and desired outcomes, the purpose of the current research is to pursue the richness of the service recovery model by exploring various interactive effects that impact the recovery-forgiveness relationship. This research empirically examines the role of organizational and customer variables as potential moderators in the health care industry using structural equation modeling, the preferred statistical methodology for examining latent continuous variables. We apply the Ping (1995) method of evaluating moderators involving latent continuous variables. Support is found for seven of the nine moderators tested: severity of error, offense repetition, intention of the offense, incompetence perception, response effort and timeliness of response, and involvement. Variety seeking also has a modest effect.*

### **INTRODUCTION**

Researchers have been trying to better understand the service recovery model. That is, when service failures occur, how do they impact consumers, what type of remedial action by the service provider proves most effective, and how does service recovery impact outcomes (such as customer retention and word-of-mouth)? Much of the research to date examines the direct effect of recovery strategies (apology, compensation, etc.) on outcomes. As argued by Davidow (2014), research that focuses on satisfaction with the recovery strategy itself misses the point; the focus should instead be on ultimate consumer behaviors (such as retention or word-of-mouth) as outcomes. Recently, the very important *mediating* role of forgiveness has become apparent (Casidy and Shin, 2015; Harrison-Walker 2019; Shin, Casidy, and Mattila 2018; Suri, Huang and Senecal 2019; Tsarenko & Tojib, 2012, 2015; Tsarenko, Strizhakova, and Otnes 2019; Yagil and Luria 2016; Zourrig, Chebat, and Toffoli, 2015) and shown to explain which recovery strategies lead to desirable outcomes (Harrison-Walker 2019).

Evaluating the relationship between two variables (such as service recovery and forgiveness) can suggest support for a relationship but cannot address under what circumstances the relation holds (Fairchild and McQuillin 2010). Investigating moderators provides a more complete understanding by facilitating an appreciation of the context of the relationship (Fairchild and McQuillin 2010). According to Cohen et al. (2003, p.255): “it is safe to say that the testing of interactions is at the very heart of theory testing in the social sciences.”

As explained by Fairchild and McQuillin (2010), a moderator is a “third variable (Z) that changes the relation between a predictor (X) and an outcome (Y), thereby affecting the strength and/or direction of the relation between the two variables.” By examining the moderation effects on the relationship between a predictor and an outcome, researchers can facilitate marketing theory and provide more effective recommendations to practitioners (Fairchild and McQuillin 2010).

Now that we understand the critical role that consumer forgiveness plays following service failure, it is important to pursue the richness of the model by exploring the various interactive effects that affect the service recovery-forgiveness relationship. We therefore (a) investigate the potential moderating effects of organizational and consumer moderators on the relationship between service recovery and consumer forgiveness and (b) test our model using the preferred methodology of structural equation modeling (SEM) for analyzing interaction effects involving latent continuous variables. Our paper is presented in six parts. First, we discuss the focal direct relationship between service recovery and forgiveness and the call for the investigation of potential moderators. Second, we describe our research model and present our hypotheses. In the next two sections, we explain our methodology and report our research findings. Fifth, we discuss the results along with managerial implications. Finally, we offer implications for future research.

## **FORGIVENESS AND EFFECTIVE SERVICE RECOVERY IN HEALTHCARE SERVICES**

Forgiveness is generally conceptualized as a deliberate process that transforms a negative, vengeful response into a positive response (Baumeister et al., 1990; Fincham, 2000; McCullough et al., 1998). More specifically, there are two facets of the forgiveness process: (1) letting go of resentment and anger that could otherwise lead to grudge holding and (2) the assumption of positive thoughts, feelings and behaviors toward the wrongdoer (McCullough, Pargament, and Thoresen 2000; Wade and Worthington 2003; Worthington 2003, 2005; Worthington and Wade 1999). Consumer marketers have taken an increasing interest in the role of forgiveness (Casidy and Shin, 2015; Harrison-Walker 2019; Shin, Casidy, and Mattila 2018; Suri, Huang and Senecal 2019; Tsarenko & Tojib, 2012, 2015; Tsarenko, Strizhakova, and Otnes 2019; Yagil and Luria 2016; Zourrig, Chebat, and Toffoli, 2015) and the behavioral outcomes of forgiveness following service failure. The outcomes typically investigated include word-of-mouth and various measures of retention (repatronage, intention to switch, etc.) (Casidy and Shin, 2015; Harrison-Walker 2019; Tsarenko and Tojib, 2011, 2012). These outcomes are comparable to vocalizations of displeasure and loyalty/exit constructs identified as consequences of dissatisfaction in the seminal work by Hirschman (1970).

Given the value of these outcomes to service marketers, it is logical that the focus shifts to identifying the service recovery strategies most likely to lead to consumer forgiveness. Recovery strategies are the actions taken by a service provider as a response to a service failure (Gronroos, 2000; Johnston & Mehra, 2002). Recovery strategies considered important in restoring commitment and trust (Wirtz and Mattila 2004; Roschk and Kaiser 2013) typically include an apology, some form of compensation, or providing an opportunity for voice (Hui & Au, 2001). The key is to implement *effective* recovery strategies that dissipate negative emotions (Bitner, Booms, and Tetreault, 1990), a critical element of forgiveness. Harrison-Walker (2019) reports that the effectiveness of specific recovery strategies varies by industry. For example, only voice has a positive and significant effect on forgiveness of failures in the healthcare industry, while the two more commonly investigated recovery strategies of apology and compensation do not lead to forgiveness (Harrison-Walker 2019).

Voice means giving the customer a chance to explain his/her feelings to the service provider (Hui & Au, 2001). Voice plays a functional role, leading customers to believe they can influence the outcome of the service recovery, as well as a value-expressive role by providing cathartic satisfaction from being able to express their point of view (Goodwin & Ross, 1992).

### Call for Moderators

By demonstrating the mediating effect of forgiveness between service recovery and behavioral outcomes, Harrison-Walker (2019, p.386) opened the door for market researchers to investigate potential moderators of service recovery on forgiveness. As noted by Harrison-Walker (2019), previous research has investigated the roles of recovery promptness, failure severity, recurring failures, and causal attributions either in regard to personal relationship forgiveness or as moderators between service failure and recovery outcomes, but not as potential moderators of the *service recovery-forgiveness relationship*. Would the relationship between the recovery strategy and consumer forgiveness be strengthened or weakened based on such things as the timeliness of the response, failure severity, or the perceived cause of the failure? Researchers have called upon marketing academics to investigate the conditions where forgiveness would be more (or less) likely (Joireman, Gregoire, and Tripp 2016; Muhammad and Gul-E-Rana 2020; Tsarenko, Strizhakova, and Otnes 2019). We answer the call to explore the moderating effects of these and other factors on the service recovery-forgiveness relationship within the healthcare industry.

## RESEARCH MODEL

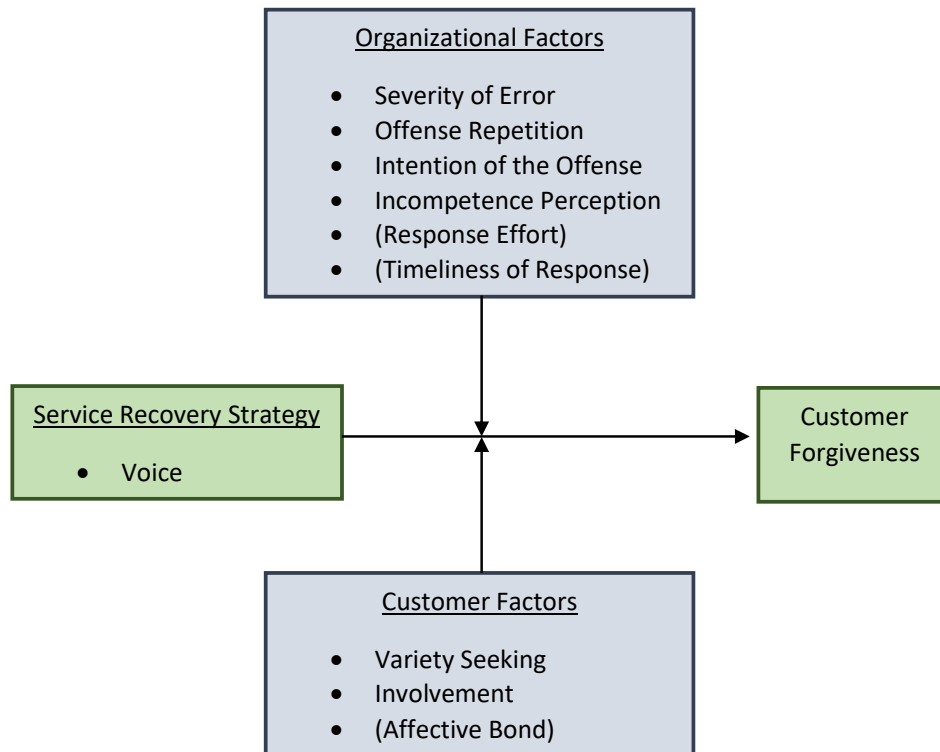
Based on existing research, we identify and investigate nine moderating factors divided into organizational factors and customer factors (see Figure 1). According to Cohen et al. (2003), moderators may have either enhancing effects or buffering effects. We indicate *buffering* effects in Figure 1 by parentheses around the name of the moderator.

**Organizational Moderators.** Four organizational moderators that may accentuate the service recovery-forgiveness relationship include: severity of the service error (Liao 2007, Rapske et. al, 2010; Tsarenko, Strizhakova, and Otnes 2019; see also Tsarenko and Tojib 2012), offense repetition (Gold and Weiner 2000, Liao 2007, Rapske et. al. 2010), failure as a result of incompetence (Harrison-Walker 2012), and intent to harm (Boon and Sulsky 1997; Girard and Mullet 1997; Rapske et. al. 2010; Tsarenko, Strizhakova, and Otnes 2019). More specifically, we suggest that customers are less likely to forgive a service error when the error is perceived as substantial, when the error has occurred in the past, when the error is a result of perceived incompetence of the service provider, or when the provider is perceived as having intentionally committed the error. In such instances, the role of Voice as a recovery strategy becomes all the more important.

Many researchers suggest that the severity of a service failure affects service recovery and forgiveness. Both Tsarenko, Strizhakova, and Otnes (2019) and Rapske et. al (2010) suggest that more severe errors are harder to forgive. Liao (2007) reports that the severity of the failure moderates the effect of the recovery effort on recovery satisfaction. Seemingly in contradiction, Conlon and Murray (1996) and Smith, Bolton and Wagner (1999) argue that as severity increases, the added value of the recovery effort decreases. It is important to note, however, that Conlon and Murray were looking at the effect of an *apology* while Smith, Bolton and Wagner (1999) considered the role of *compensation*. Neither apology nor compensation are effective in healthcare failures, and both are different than the recovery strategy of voice (Harrison-Walker 2019). We believe that, similar to Liao (2007), the severity of the service failure will enhance the service recovery strategy-forgiveness relationship. Our contention is supported by the empirical finding that service failure severity leads to reduced satisfaction, lower repurchase intent and negative word-of-mouth intentions (Sengupta, Balaji and Krishnan (2015).

**Figure 1:**

Conceptual Model of the Moderating Effects of Organizational and Customer Factors on the Service Recovery-Customer Forgiveness Relationship in Healthcare



Many consumers experience multiple failures from the same provider (Wu and Lo 2012) with repeated offenses more difficult to forgive. Repeated failures lead consumers to experience anger, vengeance (Folkes 1984; Tsiros, Mittal and Ross 2004), mistrust (Darke and Ritchie 2007) and dissatisfaction (Jones and Farquhar 2007; Oliva, Oliver and MacMillan 1992). These emotional reactions are associated with memories of prior service failures (Bugelski 1982; McSweeney and Bierley 1984; Peter and Nord 1982). Bunker and Bradley (2007) find that customers who experience repeated failures from the same provider feel powerless or helpless. When a customer experiences repeated failures with a firm, recovery efforts to address the most recent service failure may no longer be effective (Kahneman and Tversky 1979; Liao 2007; Maxham and Netemeyer 2002; Mittal, Kumar, and Tsiros 1999). Furthermore, repeated service failures are interpreted by customers as typical for the company (Russell 1982). However, Maxham and Netemeyer (2002) and Mittal, Kumar and Tsiros (1999) examined satisfaction rather than

specific recovery strategies, while Kahneman and Tversky (1979) and Liao (2007) considered apology. Voice as a service recovery strategy takes on greater significance because the customer is engaged in dialog (Dasu and Roa 1999). Dasu and Roa (1999) observe that consumers are active problem-solvers; if they feel there are relatively simple solutions to address the failure (whether true or not from the service provider's perspective), then consumers expect to be engaged in identifying solutions. Problem-solving through voice can restore power to the wronged consumer. Recovery strategies such as apology and compensation do not involve cooperative problem-solving. When customers feel that they have been heard and are also part of a solution, they are more likely to forgive the offense (Harrison-Walker 2019). In instances where the customer experiences repeated offenses, Voice as the recovery strategy takes on increased importance.

The next two potential moderators (perceived intention of the offense and perceived incompetence of the service provider) relate to attribution theory. "Attribution theory focuses upon the universal concern with explanation" (Weiner 2000, p.382). In the context of service failure, consumers want to know who or what to blame (Funches 2011). Several researchers (Harrison-Walker 2012, 2020; Machleit and Mantel 2001; Suri, Huang and Senecal 2019) suggest that emotional responses vary depending on how consumers attribute blame. When service failure is perceived to be controllable by the firm, customers experience anger and vengeance (Folkes 1984; Tsiros, Mittal and Ross 2004). Harrison-Walker (2012) contends that customers get angry when they perceive the cause of service failure as controllable and deliberate. One might think that service errors are rarely intentional; shockingly, Harris and Ogbonna (2002) reported that 85% of all customer contact employees had performed deliberate acts of sabotage just within the week before the study was conducted.

Harrison-Walker (2020) empirically demonstrates that emotions may differ depending on whether the failure was deliberate - or due to incompetence and a lack of training. When customers perceive a failure as intentional, they feel both angry and frustrated (Harrison-Walker 2020). When a consumer believes that the cause of service failure is a result of incompetence or poor training, the customer experiences anger and frustration, as well as irritation and regret (Harrison-Walker 2020). Intentionality and lack of training are controllable factors by the service employee and service manager, respectively. Intentional or deliberate service failures, also called service sabotage, occur when there is malicious intent and lead to reduced customer satisfaction (Harris and Ogbonna 2002). Alternatively, when customers attribute service failure to incompetence, the customer assigns responsibility to the firm resulting in dissatisfaction with the service encounter and increases expectations for the same type of problem to occur in the future (Bitner 1990). Attribution of service failure to controllable factors can make customers less likely to forgive (Bradfield and Aquino 1999). Arguably, although attribution is a perception of the consumer, we include these variables under organizational moderators since the organization is in a clear position to provide customers with an explanation for the service error and therefore attributions of both deliberate service failure and lack of training (could have and should have been prevented) are generally controllable by the firm. In either case, Voice as a recovery strategy becomes all the more important.

Based on the above findings, we identify four organizational factors that accentuate the service recovery-forgiveness relationship (where Voice becomes more important) as reflected in the following hypotheses:

- H1.** *The positive effect of Voice on Forgiveness is stronger as the perceived severity of the service failure increases.*

- H2.** *The positive effect of Voice on Forgiveness is stronger when service failure repetition increases.*
- H3.** *The positive effect of Voice on Forgiveness is stronger when the degree to which the service error was perceived as being intentional on the part of the service organization increases.*
- H4.** *The positive effect of Voice on Forgiveness is stronger when the degree to which the service error was perceived as resulting from provider incompetence increases.*

Potential organizational moderators that may attenuate the service recovery-forgiveness relationship include response effort and timeliness of the response. As noted by Johnston and Mehra (2002), customers are often dissatisfied with the way a service failure is handled. Both response effort and promptness of the response are important to the recovery effort (Johnston 2001). The customer is more likely to forgive when the service organization exerts considerable effort to respond and responds quickly.

Effort refers to “the amount of energy put into a behavior or series of behaviors” (Mohr and Bitner, 1995, p. 240). Customers want service employees to be motivated and willing to try hard to solve the problem (Gruber, Szmigin and Voss 2009). Karatepe and Ekiz (2004) find that effort is the most influential organizational response affecting satisfaction and loyalty. When the provider expends greater effort in resolving the problem, it reduces the effort required of the customer. Accordingly, we expect effort put forth by the service employee to reduce the importance of voicing in terms of achieving customer forgiveness.

The second organizational moderator relates to how promptly the organization implements the recovery strategy. As noted by McCullough, Berry and Yadav (2000), the promptness of the provider’s response will impact the customer’s satisfaction with the recovery. In an experimental study, Roschk and Kaiser (2013) find that a late apology reduces customer satisfaction. Central to this concept of a late response is the notion of a consumer flashpoint. Aron (2001) borrowed the term flashpoint from the sciences literature and adapted it to marketing, defining flashpoint as the point where a consumer realizes the failure has ‘become intolerable and in need of a response’ (Aron and Kultgen 2019). Aron and Kultgen (2019) explain that this type of emotional flashpoint leads to a negative emotion based on dissatisfaction with the service experience. When disgruntled consumers reach their flashpoint, they may engage in various forms of dysfunctional consumer behaviors such as grudge holding and retaliation (Aron and Kultgen 2019). Accordingly, marketers want to preclude the consumer’s flashpoint by responding timely following the service failure. Chueng and To (2017) add that a timely response has the effect of increasing the perceived justice of the service recovery.

Therefore, the organizational factors which attenuate the service recovery-forgiveness relationship (where Voice becomes less important) are identified in the following hypotheses:

- H5:** *The positive effect of Voice on Forgiveness is weaker as the response effort of the service organization increases.*
- H6.** *The positive effect of Voice on Forgiveness is weaker as the timeliness of the service organization’s response increases.*

**Customer Moderators.** Two potential customer moderators that may accentuate the service recovery-forgiveness relationship are variety seeking and involvement. Variety seeking refers to a

customer's tendency to seek diversity in their choice of service providers (Kahn 1995). Hirschman (1970) describes variety-seeking as a motive for seeking newness. Interestingly, customers high in variety seeking exhibit a greater hedonic motive than a motive for benefits (Holbrook and Hirschman 1982). Accordingly, even satisfied customers may change service providers simply to try something new. High variety-seeking also means that dissatisfied customers may be even more likely to jump ship. As explained by Homburg, Hoyer and Stock (2007), variety-seeking customers are more open to new service relationships and therefore less motivated to forgive service errors. It is more difficult to retain variety-seeking customers because these consumers value change for the sake of change (Homburg, Hoyer and Stock 2007). Without the relational aspect of dialog and cooperative problem solving through voice, variety-seeking customers are more likely to change providers.

Involvement refers to personal relevance (Homburg, Hoyer and Stock 2007). Celsi and Olson (1988) suggest that consumer involvement may be situational in that it may occur at certain times. On the front end, highly involved customers expend time and effort to acquire information about the service and make their purchase decision (Jayanti and Jackson 1991) resulting in a higher level of satisfaction (Kokkinaki 1999). Highly involved customers have greater expectations (Bolton and Drew 1991; Peter and Olson 1999; Varki and Wong 2003), leading to a greater letdown when expectations are not met. Following a service failure, highly involved consumers are more interested in evaluating the recovery strategies in detail and in reestablishing the relationship (Homburg, Hoyer and Stock 2007). They have a greater desire to be involved in solutions to service failures (Varki and Wong 2003). Given that voice means the customer has the opportunity to express concerns, we expect Voice to facilitate the service recovery-forgiveness relationship.

Customer factors which amplify service recovery-forgiveness relationship (where Voice becomes more important) are identified in the following hypotheses.

- H7:** *The positive effect of Voice on Forgiveness is stronger when the degree to which the customer's tendency toward variety seeking increases.*
- H8:** *The positive effect of Voice on Forgiveness is stronger when the degree to which the level of customer involvement in the service increases.*

A customer moderator that may promote the service recovery-forgiveness relationship is the customer's pre-existing affective bond with the service provider. Previous studies suggest that relationships can be characterized in terms of emotional or affective bonds between customer and provider (Gruen, Summers and Acito 2000; Mattila 2006). Affective bonds may result in part from customer perceptions that the service employee values them and are concerned with their needs (Celuch, Robinson and Walz 2015). Yim, Tse and Chan (2008) empirically demonstrate that social rapport increased customer satisfaction, which in turn increases customer-firm affection. That said, customers with high affective bonds are more resistant to service failures (Bejou and Palmer 1998), tend to be generous when dealing with a service failure (Priluck and Wisenblit 2009), and more likely to give the provider another chance based on the belief that things will improve in the future (Ro and Matilla 2015). Saxby, Celuch and Walz (2015) suggest that affective bonds based on benevolence and caring are likely to be viewed by customers as above and beyond business requirements, leading to an enhanced evaluation of the service. These findings suggest voice would be less important in the presence of higher affective bonds. We use the term affective commitment to describe customers who bond emotionally to the service firm (Saygan 2011).

Accordingly, the customer factor which buffers the service recovery-forgiveness relationship (where Voice becomes less important) is identified in the following hypothesis.

- H9:** *The positive effect of Voice on Forgiveness is weaker when the degree to which the customer's affective commitment to the service provider increases.*

## **METHODOLOGY**

Using retrospective experience sampling, we ask participants to describe in detail a service failure they experienced in health care and then respond to the survey items based on that experience. Service failure may be defined as a service encounter whereby customers experience dissatisfaction as a result of the service not meeting expectations. Customer dissatisfaction resulting from service failure can result from a failure in any of the specific dimensions of service quality, as well as from non-quality issues such as needs, perceptions of fairness, etc. (Taylor & Baker 1994). Thus, the service failure may have resulted from any number of quality and non-quality factors. Reliving the service failure means that the failure is fresh in the respondent's mind (c.f. Bougie, Pieters and Zeelenberg 2003). Based on 128 responses from an online panel, 65.6% were from female participants, 65.6% held a college degree and the average age was 38 years.

### *Measures and Scale Purification*

The measures for Voice and Forgiveness were adopted from Harrison-Walker (2019). Reliabilities for both scales were acceptable (Cronbach Alpha = 0.947 and 0.907, respectively).

An extensive research review was conducted to identify measures for the moderator constructs. To develop robust scales with maximum reliability, items from studies were at times combined to incorporate the highest quality contributions of multiple researchers, a practice supported by Carrillat, Jaramillo and Mulki (2007) and Dabholkar, Thorpe and Rentz (1996). Respected researchers commonly add, omit or adapt items from published scales (e.g., Dabholkar, Thorpe and Rentz 1996). For example, items were added and dropped from the SERVQUAL scale by Dabholkar, Shepherd and Thorpe (2000). Carrillat, Jaramillo and Mulki (2007) explain that items may be added, deleted or reworded "to ensure suitability for a particular research context." We felt comfortable incorporating measures from different scales designed for each targeted construct based on our review of the literature to more fully capture the richness of each construct and perhaps even increase scale reliability. Each modifier scale was purified adopting the guidelines set forth by Churchill (1979) and Spector (1992). Measurement items, sources and scale reliabilities are presented in Appendix 1.

Bartlett's Test for Sphericity (BTS) suggests that the data is appropriate for factor analysis while Kaiser's Measure of Sampling Adequacy (MSA) indicates that the sampling adequacies are acceptable. The BTS and KMSA statistics are presented in Table 1. Factor Analysis was then conducted separately for each of the nine moderator scales, all of which were found to be unidimensional.

Further, an exploratory analysis was conducted to examine the factor structure collectively for the nine moderators. All moderators loaded properly onto their designated constructs (BTS=16944.30, 820 df, Sig=.000; MSA=.888), except for the Timeliness and Effort items which loaded together on a single construct. In hindsight, this makes sense since both constructs relate to responsiveness. It was decided to proceed to investigate the two constructs separately (1) because they have historically been conceptualized and measured as two distinct constructs (Brown and



Leigh 1996; Homburg, Fürst and Koschate 2010; Karatepe and Ekiz 2004; Liao 2007) and (2) to determine if they lead to different conclusions. If the two constructs lead to the same conclusion, future research may wish to combine these items under a single construct that may be called responsiveness.

**Table 1**  
**BTS and KMSA Statistics for the Moderator Constructs**

	<b>Bartlett’s Test for Sphericity Chi-Square (df)</b>	<b>Kaiser’s Measure of Sampling Adequacy</b>
<b>Severity of Failure</b>	355.054 (10)	0.847
<b>Offense Repetition</b>	237.169 (10)	0.832
<b>Intention</b>	320.891 (6)	0.789
<b>Incompetence Perception</b>	903.915 (21)	0.885
<b>Response Effort</b>	55.260 (10)	0.906
<b>Timeliness of Response</b>	198.043 (3)	0.729
<b>Variety Seeking</b>	287.398 (15)	0.860
<b>Involvement</b>	398.353 (6)	0.831
<b>Affective Bond</b>	134.685 (1)	0.500

*Main Effect Examination*

Before examining the moderator effects, we check the main effect model of Voice on Forgiveness. The model shows a good fit of the data to the model as evidenced by the chi square statistic (chi-square=0.08, df=1, p=0.776) and other fit indices (RMSEA=.000, CFI=1.00, AGFI=1.00). It should be noted that these seemingly ‘perfect’ fit indices are a result of the chi-square statistic being equal to or less than the degrees of freedom. The effect of Voice on Forgiveness was positive and significant (0.28, (0.09, 3.26, p<.05). We turn next to the challenge of assessing interaction effects using continuous variables in SEM.

*Interaction Effects Examination*

Cortina, Chen and Dunlap (2001) note two trends in social science of (1) an increasing interest in interaction effects and (2) the rising popularity of SEM. However, there is little evidence to date in the business literature converging the two; that is, using SEM to test interaction effects (except when the moderating variables are discrete). In fact, the challenge of examining interaction in SEM where *continuous* variables are involved has been “a source of aggravation” for a long time (Kline and Dunn 2000, p. 127). In regression, analysis of interaction effects for continuous variables involves simply multiplying terms (Aiken and West 1991; Cohen and Cohen 1983; Jaccard, Turrisis and Wan 1990). Regression is the preferred method to test for interaction effects with observed (i.e., but *not latent*) variables since it allows for categorical and continuous variables and examines both main and interaction effects (Aguinis 2004, Aiken and West 1991). However, when *latent* variables are involved (as is often the case in marketing research), regression produces biased and inconsistent estimates of the coefficients (Busemeyer and Jones 1983).

A second common approach involves splitting the sample into categorical subgroups and either using Analysis of Variance or comparing the chi square difference of the two groups in

SEM. “A common argument is that it greatly simplifies the statistical analysis and leads to easy interpretation and presentation of results” (Altman and Royston 2006). However, this method reduces statistical power and has a greater likelihood of false disconfirmation (Altman and Royston 2006; Cohen and Cohen 1983; Jaccard, Turrissis and Wan 1990). Irwin and McClelland (2003, p.366) emphatically conclude “that dichotomization has only negative consequences and should be avoided.”

A third approach, using the Hayes PROCESS macro, also has its weaknesses when it comes to investigating interactions among continuous, latent variables. Sarstedt et al (2020) explain that PROCESS disregards the attenuating effect of measurement error while SEM removes measurement error during the analysis. Sarstedt et al (2020) remind that SEM was developed explicitly to account for measurement error when estimating relationships among *latent* (as opposed to observed) variables and that this is the primary advantage of SEM over regression-based approaches. “In fact, the use of latent variable methods like SEM has proven uncontroversial in psychometrics, psychology, and many other fields, whenever researchers deal with abstract concepts. Marketing researchers should follow suit” (Sarstedt et al 2020, p.293).

Measurement error is of particular concern when examining moderating variables (Sarstedt et al 2020). The attenuating effect of measurement error described above is worsened when one multiplies two potentially uncorrelated measures to generate the interaction term (Cortina et al 2021), leading to a low if not unacceptable level of reliability for the interaction variable (Sarstedt et al 2020). To complicate matters further, since interaction effects tend to be smaller than direct effects, the statistical power to detect the interaction is reduced (Aguinis et al 2005; Murphy & Russell 2017).

Finally, the input for regression-based models including PROCESS is the sum or average of construct scores. Thus, only the structural model is examined. Alternatively, SEM examines the overall structural model as well as the measurement models for each of the constructs simultaneously. Accordingly, SEM takes a more holistic approach to model examination.

It is therefore recommended to utilize SEM while retaining the *continuous* nature of the *latent* variables using the products of the variables to specify the interaction (Ping 1995). While the SEM approach to examine interaction effects involving continuous variables is complex and time-consuming, it yields the most valid results.

While there are a variety of techniques available to test interaction effects involving continuous variables using SEM, the techniques are relatively unknown outside mathematical and quantitative circles (Cortina, Chen and Dunlap 2001). Cortina, Chen and Dunlap (2001) provide an explanation of various techniques and the LISREL program code for the procedure.

Much of the complexity in using these procedures is created by the fact that *all possible cross-products* of the latent variables be used as indicators of the latent product (Cortina, Chen and Dunlap 2001). Therefore, a reduction of the number of indicators is warranted (Jaccard and Wan 1995). We begin by reducing the number of indicators for each construct to two composite variables in keeping with the recommended process (Cortina, Chen, and Dunlap 2001; Ping 1995) and the recommendation by Bagozzi and Heatherton (1994) that two composite variables per construct are appropriate. With the exception of the Affective Bond construct that was measured using only two items, items for each construct were parceled into two composite variables.

Ping (1995) suggests that the product of the sums of the relevant indicators be used as the *sole* indicator of the latent product (e.g., the interaction term). Based on our current research model, with two parceled indicators for the service recovery strategy (x) and two parceled indicators (z) for the proposed moderator, the interaction term is calculated as  $(x_1+x_2)(z_1+z_2)$ . Armed with a

general understanding of the use of composite measures and the calculation of the interaction term, we now describe the analytical process.

The first step is to mean-center each of the composite variables (Cortina, Chen and Dunlap 2001) involved in the hypothesized interactions. It was Harris (1985) who argued that interaction effects with continuous variables not be tested by multiplying raw scores, but rather by multiplying deviation score (each score minus its mean) cross products. As explained by Cortina, Chen and Dunlap (2001, p.329), “centering prior to formation of products minimizes the relationships between the indicators of XZ and the indicators of X and Z.” Using the approach recommended by Aiken and West (1991), we compute the deviation scores around the means for each of the *parceled* variables represented in the proposed interactions (e.g., the interaction between the service recovery strategy and the proposed moderator). For example, the two composite measures of Failure Severity were mean centered. It is important to note that the main effect variables should not be centered (Aiken and West 1991) or the matrix submitted for analysis will not be positive definite (Kline and Dun 2000).

Once the parceled variables are mean-centered, we create the interaction term by cross-multiplying the parcels using the mean-centered versions of each. More specifically, using the mean centered versions, we sum the four interaction measures: (x1)(x3), (x1)(x4), (x2)(x3), and (x2)(x4) (Ping 1995). Again, to illustrate, the interaction term involving Severity of Failure and Voice was calculated by multiplying the two mean-centered composite measures of Severity of Failure by the two composite measures of Voice. We then computed the correlation matrix for all variables as input for the LISREL program.

We adopt the single step procedure proposed by Ping (1995) and illustrated by Cortina, Chen and Dunlap (2001, p.349). It is important to note that the Ping (1995) procedure does not set the first indicator of Ksi1 and Ksi2 to define their respective scales (Cortina, Chen and Dunlap 2001, p.349) as is typically the case. An example of the LISREL code we adopt for our research is presented by Cortina, Chen and Dunlap (2001, p.349).

## RESEARCH FINDINGS

Each of the moderators was tested using Ping’s (1995) single step procedure and the results are presented in Table 2. All of the *organizational* factors as identified in H1-H6 are supported. That is, Severity of the service failure, failure Repetition, Intentional failures and failures resulting from Incompetence all accentuate the effect of Voice on Forgiveness, making Voice all the more important. Alternatively, the Timeliness of the organization’s response and the Effort of the organization each attenuate the effect of Voice on Forgiveness, lessening the importance of Voice. With regard to *customer* factors, H8 is supported. More specifically, Customer Involvement in the service accentuates the effect of Voice on Forgiveness, making Voice more important.

H7 received moderate support ( $p < 0.10$ ) and the effect was in the hypothesized direction. H7 expected that for customers who are characterized as having high levels of Variety Seeking, Voice would be more important. In the absence of significant interaction effects, the main effects are additive and may be examined (see Fairchild and McQuillin 2010). Accordingly, the main effect of Variety Seeking on Forgiveness was examined and found not to be significant (t-value = -0.036).

Finally, H9 was not supported. The Affective Bond a customer has for the provider does not make Voice either more or less important on Forgiveness. The main effect of Affective Bond on Forgiveness was also insignificant (t-value = 0.68).

**Table 2**  
**Interaction Effects on the Relationship Between Voice and Forgiveness**

		Path Coefficient	SE	t-Value
H1	Severity of Failure x Voice	0.82	(0.12)	6.61***
H2	Failure Repetition x Voice	0.88	(0.12)	7.06***
H3	Intentional Failure x Voice	0.60	(0.12)	5.02***
H4	Incompetence Failure x Voice	0.29	(0.12)	2.42**
H5	Response Effort x Voice	-0.28	(0.13)	-2.13**
H6	Timeliness of Response x Voice	-0.61	(0.15)	-4.14***
H7	Variety Seeking x Voice	0.23	(0.13)	1.81*
H8	Involvement x Voice	0.69	(0.14)	4.84***
H9	Affective Bond x Voice	-0.09	(0.12)	-0.79

Significance \*p<.10, \*\*p<.05, \*\*\*P<.0001

## DISCUSSION AND MANAGERIAL IMPLICATIONS

This research investigates the potential interaction effects of six organizational and three customer moderators on the service recovery-customer forgiveness relationship. The results reveal that all six organizational moderators have a significant interaction effect and each of the effects is in the hypothesized direction. That is, as the severity of the service failure, repetition of the offense, intention of the failure on the part of the service provider, and service failure attributed to the incompetence of the service provider increase, voice as a service recovery strategy becomes all the more important in terms of earning customer forgiveness of the failed event. Arguably, employee incompetence and intentional service errors are controllable by the service manager and can be minimized or averted through proactive and extensive customer service training as well as being acutely aware of the emotional states of service providers on an ongoing basis. An example of perceived incompetence drawn from the data was a patient’s visit to the hospital for childbirth where new nurses kept coming into the room every five minutes, leading to chaos and disorganization and the baby almost being given the same shot twice. Such a situation is preventable by the service provider by improvements to scheduling, assignments, and communication. Several complaints related to misdiagnosis or incomplete diagnosis, which also leads to perceptions of incompetence. Such problems can be reduced through better training, patience, listening, and a more thorough evaluation.

Much as we hate to admit it, some failures are intentional on the part of the service employee. Employees who are under undue personal or work-related stress may be more likely to allow their stress to affect how they treat customers when difficult situations arise. One example from the data was a patient who called a tele-doctor where the doctor was overworked and potentially responding to several calls simultaneously, rushing the process to get the patient off the phone. Another example was a pharmacy that had not filled a prescription two days after it was called in. The pharmacist said they had been too busy, seemed irritated at the customer's request, and was rude to the patient. In another instance, a patient in an ER room could overhear his nurse telling someone she thought he was faking it. The nurse was rude when taking the patient's history and did not appear to be listening to the patient's symptoms. In a similar situation, a doctor did not speak to the female patient but rather directed all conversation to the patient's fiancée. In all three examples, the customer felt the service failure was deliberate rather than a result of lack of training. In cases of intentional service failure, the employer needs to provide the proper care and support for employees to restore their focus and ability to properly address customer issues. Further, service providers need to be self-aware regarding their communications with the patient.

There will be times when service failures occur either accidentally or beyond the service provider's control. In such cases, it may be virtually impossible to control either repetition of the failure or failure severity. However, in cases when service failures are not attributable to accident or environmental causes, offense repetition may be reduced or avoided by tracking the occurrence of service failures and implementing measures to ensure they will not reoccur. For example, many service failures resulted from repeated errors by the provider's office processing insurance claims correctly, leading to repeated unsuccessful attempts to process the claim. When service failures are tracked, the most severe service failures can be identified and prioritized for remediation. The most severe health service failures tend to relate to improper treatment, miscalculation or neglect that leads to significant worsening of the patient's condition. Other severe healthcare failures led to patient humiliation to the point of tears or unnecessarily inflated out-of-pocket expenses for the patient.

Alternatively, as the level of effort expended by the service provider and the timeliness of the service provider's response following the failure increase, the role of voice as a recovery strategy in achieving forgiveness is lessened. An example from the current study was a patient who was billed two days after the appointment for the full price of a routine physical that should have been covered by insurance. The patient first spoke with the insurance company who verified that the service was fully covered and then the physician's billing department who remedied the problem on the spot. The effortful and fast resolution of the problem lessened the importance of voice to effecting customer forgiveness of the incident.

The three customer moderators of the service failure recovery-customer forgiveness relationship investigated in the current research are variety seeking, involvement, and affective bond. The results of this study reveal that involvement has a significant interaction effect that is in the hypothesized direction. This is consistent with the observation by Varki and Wong (2003) that highly involved customers want to be involved in solutions to service failures. Voice as a recovery strategy adopts the relational approach that highly involved customers especially desire. Therefore, when customers are highly involved, voice becomes all the more important. For example, one highly involved customer took the time to evaluate and select a health care provider with high online reviews. In describing the incident characterized by multiple service failures, this patient noted her repeated efforts to communicate her concerns and find solutions with both the doctor and the billing company. Highly involved customers spend considerable effort on the front end to

learn about the service (Jayanti and Jackson 1991), making it all the more important that they be given the opportunity to discuss their concerns from this relatively more informed vantage.

Variety seeking had only a modest effect on the service recovery-forgiveness relationship, yet it was in the hypothesized direction. The basis for the hypothesis is that customers with strong variety seeking motives would be less motivated to forgive (Homburg, Hoyer and Stock 2007) and would simply change service providers. In that case, voice becomes all the more important to keep high variety customers from leaving. It's worth noting that many of the healthcare failures related in part or in full to problems with the insurance provider. In such cases, voice may not play an enhanced role for variety seeking individuals who would like to leave their insurance company but are structurally tied through their employer to remain. Alternatively, high variety seeking individuals who have the option of selecting a different physician could greatly benefit from voice as a recovery strategy. In fact, there were many instances in the data where individuals opted to change physicians following a physician-related service failure. We therefore consider the possibility that the moderating effect of voice would be higher for physician providers than for insurance companies where trying a different provider is not an option. Future research needs to examine service failures by insurance companies separately from service failures by physician providers. This was not possible with the current data since many of the service failure descriptions included problems with both the physician and the insurance company.

Finally, affective bonds do not moderate the service recovery-forgiveness relationship. Previous research suggested that customers with high affective commitment would be more accepting of service failures (Priluck and Wisenbilt 2009). This would suggest that in the absence of the interaction effect, we would find a main effect of affective bonds on forgiveness. However, this was not the case. We suggest one potential explanation, which would need to be investigated through further research. The finding may be an artifact of the unique nature of the health care industry. It may be that the degree to which a patient is devoted to his/her physician becomes a non-factor when it comes to service failures that are critically associated with one's health or one's wallet. This is in contrast, for example, to a service failure in restaurants where the person has to wait to get a table, or the waiter brings the wrong meal. In other words, perhaps with regard to healthcare it's more about the failure itself and less about the affection for the physician. Liking simply does not enter the equation one way or the other. When the relationship is investigated in future research, it is recommended that additional scale items be developed for the measure of affective bonds given that our measure was limited to two items.

## **IMPLICATIONS FOR FUTURE RESEARCH**

The current research investigated a number of customer and organizational moderators of the service recovery-forgiveness relationship. Certainly, the list is not exhaustive. For example, another potential individual moderator that could be investigated is empathy (Roschk and Kaiser 2013; Suri, Huang and Senecal 2019; Stephens and Gwinner 1998; Tsarenko, Strizhakova, and Otnes 2019; Wieseke, Geigenmuller and Kraus 2012). Rogers (1961) explains that empathy involves understanding not only the feelings, but also the thoughts, perspective, and viewpoints of another person. Roschk and Kaiser (2013) report experimental findings suggesting that the more empathetic an apology following a service failure, the greater the customer satisfaction. It seems reasonable that empathetic responses to customer voicing might also lead to more positive customer outcomes. Some prior research shows that customers who are high in empathy are more likely to forgive the service provider (Wieseke, Geigenmuller and Kraus 2012), while other

researchers suggest that forgiveness predicts empathy (Walker and Gorsuch 2004). Accordingly, the role of empathy in the forgiveness of service failures needs to be explored further.

A second potential moderator of the service recovery-forgiveness relationship is an individual's predisposition to forgive. That is, customers who possess the personality trait of dispositional forgiveness are more likely to forgive than those who do not. A third potential moderator is gender. McColl-Kennedy, Daus, and Sparks (2003) suggest that female consumers specifically want to be given voice during the service recovery process. Other moderators could include the failure type (product versus process), emotional intelligence, customer emotions, individual consumer versus other involvement, and robotic/AI versus human failure.

Another example of a potential moderator for the relationship between service recovery forgiveness is the age of the consumer. Aron et al (2007) suggest that while older customers may be more likely to discuss service failures with the offending party, they are also less likely to repurchase from the firm. Thus, older customers may be less likely to forgive the service failure.

Finally, customers may be more willing to forgive a local health care provider such as their neighborhood personal physician or city-based hospital than a more distant provider such as a national health care or online-only provider. Based on focus group research, Karani (2021) found that respondents from Texas were more likely to forgive a Texas-based firm based on their sense of regional loyalty and the related concept of nostalgia based on personal experience memories.

In addition to the investigation of additional moderators of the service recovery-forgiveness relationship, future research needs to examine interactions among the moderators. For example, in a study by Wu and Lo (2012), involvement was reported to interact with repetition of the offense. The negative emotions felt by highly involved customers actually decreased after the repeated service failure. Another study by Radu et al. (2019) that examined the interaction between empathy and failure severity on behavioral outcomes found a significant effect on reconciliation, retaliation, and avoidance. Such an interaction might also affect forgiveness.

Service failures are inevitable. The manner in which businesses attempt to recover the service failure is critical. The recovery strategy that works for one industry cannot be assumed to be equally effective across all industries. It is critical to implement the right service recovery strategy, meaning the one that leads to patient forgiveness. The current research investigates a number of moderating factors which affect this relationship. However, there is much more work to be done. Future research that helps us increase our understanding of the factors that enhance (or buffer) the relationship between service recovery strategies and customer forgiveness will not only further refine marketing theory but provide managers with the guidance they need in effectively restoring relationships with their wronged customers.

**CORRESPONDING AUTHOR:**

L. Jean Harrison-Walker, Ph.D.  
Professor of Marketing  
University of Houston-Clear Lake  
2700 Bay Area Boulevard  
Houston, TX 77058, USA  
E-mail: walker@uhcl.edu  
Phone: +1-281-283-3194

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## Appendix 1: Table of Measures and Reliability

<b>Severity of Failure</b>		
SEV1	In my opinion, the service failure that I experienced was a major problem.	Adapted from Maxham and Netemeyer (2002)
SEV2	The service failure that I experienced caused me great inconvenience.	Adapted from Maxham and Netemeyer (2002)
SEV3	The service failure was a major source of aggravation for me.	Adapted from Maxham and Netemeyer (2002)
SEV4	The service failure caused me a great deal of stress.	Adapted from Tsarenko and Tojib (2011)
SEV5	In my opinion, this service failure was severe.	Adapted from Tsarenko and Tojib (2011)
	<b>Cronbach's <math>\alpha</math>=.878</b>	
<b>Offense Repetition</b>		
REP1	The reason this service failure happened is <i>not</i> likely to change.	Adapted from Fincham and Bradbury (1992)
REP2	It is highly likely that this this company will incur this type of service failure again.	Adapted from Weiner et al. (1991)
REP3	It would seem that service problems are a rare event at this service provider. (R)	Adapted from Bradley and Sparks (2012) who used three items adapted from Smith and Wagner (1999)
REP4	This sort of problem is likely to occur again by this service provider.	Adapted from Bradley and Sparks (2012) who used three items adapted from Smith and Wagner (1999)
REP5	Given the way this service provider appears to operate, service problems of this type are likely to happen again.	Adapted from Bradley and Sparks (2012) who used three items adapted from Smith and Wagner (1999)
	<b>Cronbach's <math>\alpha</math>=.836</b>	
<b>Intention</b>		
INT1	The service provider caused the service failure on purpose.	Adapted from Palieri, Regalia, and Fincham (2009)
INT2	This service failure happened on purpose rather than unintentionally.	Adapted from Fincham and Bradbury (1992)
INT3	At this service provider, customers are never deliberately mistreated.(R)*	Adapted from Harris and Ogbonna (2006)
INT4	The service employees here ignore company service rules to make things easier for themselves.*	Adapted from Harris and Ogbonna (2006)
INT5	Sometimes, when customers aren't looking, people here deliberately mess things up.	Adapted from Harris and Ogbonna (2006)
INT6	The service failure I experienced was intentional on the part of the service provider.	Original
	<b>Cronbach's <math>\alpha</math>=.889</b>	



<b>Incompetence Perception</b>		
INC1	This service failure occurred because the service provider was not well trained.	Original
INC2	The service failure happened because the service provider does not have sufficient knowledge of their job.	Original
INC3	This service failure occurred due to a lack of proper training.	Original
INC4	The service failure occurred primarily due to the incompetence of the service provider.*	Original
INC5	The failure occurred because the service employee was not properly prepared for his/her position.	Adapted from Berry, Parasuraman and Zeithaml (1988)
INC6	Given this service failure, it appears that the service provider has difficulty hiring skilled workers.	Adapted from Berry, Parasuraman and Zeithaml (1988)
INC7	The failure occurred because employees of this service provider lack the proper knowledge and training.	Adapted from Berry, Parasuraman and Zeithaml (1988)
INC8	Given this service failure, it seems that the service provider is unable to hire competent and able service personnel.	Adapted from Berry, Parasuraman and Zeithaml (1988)
	<b>Cronbach's <math>\alpha</math>=.952</b>	
<b>Response Effort</b>		
EFF1	The service provider put all its energy into resolving my complaint.	Adapted from Karatepe and Ekiz (2004), who adapted from Brown and Leigh (1996)
EFF2	The service provider worked at full capacity to resolve my complaint.	Adapted from Karatepe and Ekiz (2004), who adapted from Brown and Leigh (1996)
EFF3	The service provider devoted itself to resolving my complaint.	Adapted from Karatepe and Ekiz (2004), who adapted from Brown and Leigh (1996)
EFF4	The service provider strived as hard as it could to be successful in resolving my complaint.	Adapted from Karatepe and Ekiz (2004), who adapted from Brown and Leigh (1996)
EFF5	The service provider was very keen to solve my problem.	Adapted from Homburg, Fürst and Koschate 2010)
	<b>Cronbach's <math>\alpha</math>=.941</b>	
<b>Affective Bond/ Commitment</b>		
COM1	My level of emotional attachment to this service provider was much higher than average.	Original
COM2	The strength of my commitment to my relationship with this service provider was very high.	Original
	<b>Cronbach's <math>\alpha</math>=.896</b>	

<b>Timeliness of Response</b>		
TIM1	The service provider reacted promptly to my inquiries.	Adapted from Liao (2007)
TIM2	The service provider quickly attended to the problem.	Adapted from Liao (2007)
TIM3	The service provider responded to my complaint promptly.	Adapted from Liao (2007)
	<b>Cronbach's <math>\alpha</math>=.875</b>	
<b>Variety Seeking</b>		
VAR1	I really like to try new things.	Adapted from Homburg, Hoyer and Stock (2007)
VAR2	I am always searching for changes.	Adapted from Homburg, Hoyer and Stock (2007)
VAR3	I actively seek new ideas and experiences	Adapted from Mehrabian and Russell (1974) and Raju (1980)
VAR4	When things get boring, I look for new and unfamiliar experiences.	Adapted from Mehrabian and Russell (1974) and Raju (1980)
VAR5	I prefer an unpredictable life full of change to a more routine one.	Adapted from Mehrabian and Russell (1974) and Raju (1980)
VAR6	I like novelty and change in my daily routine.	Adapted from Mehrabian and Russell (1974) and Raju (1980)
	<b>Cronbach's <math>\alpha</math>=.858</b>	
<b>Involvement</b>		
INV1	This type of service is important to me.	Adapted from Homburg, Hoyer and Stock 2007)
INV2	Compared to other products/services, this type of service is highly important to me.	Adapted from Homburg, Hoyer and Stock 2007)
INV3	I am well informed about this type of service.*	Adapted from Homburg, Hoyer and Stock 2007)
INV4	This type of service means a lot to me.	Adapted from McQuarrie and Munson 1992)
INV5	This type of service matters to me.	Adapted from McQuarrie and Munson 1992)
INV6	This type of service is of concern to me.*	Adapted from McQuarrie and Munson 1992)
	<b>Cronbach's <math>\alpha</math>=.926</b>	

\* Items removed during scale purification.