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*JUSTICE-BASED NORMATIVE RECOVERY EXPECTATIONS IN ENTERPRISE
INFORMATION TECHNOLOGY SERVICES: THE EFFECT OF FAILURE SEVERITY
AND CRITICALITY ON DISCONFIRMATION AND SATISFACTION*

BY

ANDREW C. TANG

A Dissertation Submitted in Partial Fulfillment of the Requirements for the
Degree

Of

Executive Doctorate in
Business

In the Robinson College of
Business

Of

Georgia State
University

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ACCEPTANCE

This dissertation was prepared under the direction of the *Andrew C. Tang* Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctoral of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

JUSTICE-BASED NORMATIVE RECOVERY EXPECTATIONS IN ENTERPRISE INFORMATION TECHNOLOGY SERVICES: THE EFFECT OF FAILURE SEVERITY AND CRITICALITY ON DISCONFIRMATION AND SATISFACTION

BY

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April 7, 2014

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In the areas of Service Failure Recovery and Expectancy-Disconfirmation, the extant literature contains studies of predictive expectations conducted in a consumer services setting, which show how a customer believes a seller would respond during a service failure situation. However, a focus on the expectations of enterprise managers and purchasing decision-makers for how a provider should respond in such a situation has not been explored. In addition, the literature contains studies that support the influence of service criticality and failure severity on recovery satisfaction, but the mechanisms by which these variables impact recovery satisfaction has not been extensively discussed. In order to contribute to this discussion, the current study adds to the current Recovery Disconfirmation model by illustrating how service criticality and failure severity influences customers' normative recovery expectations, which in turn affect customer disconfirmation and recovery satisfaction. This research contributes to the marketing and information technology literature by applying the expectancy disconfirmation model to managers and purchasing decision-makers in an enterprise Internet services setting. Practical implications of this research include helping information technology services providers to understand how customers establish expectations of their provider, and how to design recovery responses to optimize customer satisfaction after a service failure.

INTRODUCTION

I.I Research Domain

Firms seek to optimize earnings by reducing customer switching. The more frequently a customer buys from a business and the longer the customer remains with the brand, the higher the resulting revenue. The ability of a business to extract revenue from the same customer without incurring incremental customer acquisition costs also contributes to profitability. Researchers gauge the likelihood of a customer to switch providers by measuring repurchase intention. Previous studies find a positive association between a customer's intent to repurchase service and a customer's satisfaction with prior service (Rust et al., 2000; Naumann et al., 2010). Less satisfied customers generally are less likely to repurchase a service and switching is more likely to occur. Satisfaction is therefore negatively related to customer switching behavior.

Service-related failure is the most common reason for switching in non-manufacturing firms that perform work for customers. Service failures occur when service is unavailable, unreasonably delayed or when service is delivered below an acceptable level (Webster et al., 1998). In a study involving 45 service types, including beauty salons, automotive repair, dry cleaners and other personal services, service-related failures appeared to contribute most to customer switching. Service-related failures were mentioned by 44% of the respondents compared to the second most prevalent reason for switching, pricing (19.9% response) (Keaveney, 1995). The services literature has focused on customer satisfaction as an antecedent of loyalty and switching. Consequently, examining service failures, how firms restore service and the impact on customer satisfaction is likely to contribute to a greater understanding of the interrelationship between the efforts taken by service firms to restore services and customer satisfaction.

Firms also need to consider different responses for high and low magnitude failures. A level of response that may be effective for low magnitude failures, such as an apology for a delay in service delivery may be insufficient to restore satisfaction after a high magnitude failure such as the complete unavailability of promised services. Prior research suggests that the effect on satisfaction is related to the intensity of failures. Failure severity is the customer's perception of the intensity of a problem. Experiments found that customers rated high-magnitude failures more severely than low-magnitude failures (Smith et al., 2002).

In addition, the importance of a service to the customer has been found to influence the level of satisfaction with recovery efforts. Service criticality is the consumer's perception of the importance of successful service delivery during a specific occasion (Webster et al., 1998). Studies report that a consumer's response to service failure recovery efforts during more important purchase occasions may differ from responses during less important occasions (Ostrom et al., 1995).

While service industries take efforts to reduce service failures, it is difficult to avoid them completely. Therefore, it is important for providers to understand how a failure might influence a customer's perception of a firm and its services so it can plan in advance to minimize customer dissatisfaction after such an event. It is also necessary for firms to understand how to plan and execute recovery efforts to restore customer satisfaction effectively. Firms need to learn how to craft appropriate responses for different failure situations. Failure severity and the criticality of the service to the customer's particular application should be considered by firms in order to understand how a failure might affect customer satisfaction. Firms that can accurately identify the drivers of customer satisfaction are able to create more effective recovery strategies.

In order to provide a usable contribution to practice, the research needs to extend beyond the recognition that service failures and recovery efforts affect satisfaction, and help firms understand how these events influence customer satisfaction. An understanding of the process by which severity and criticality affect a customer's judgments is needed. Only after understanding the customers' thought processes can effective solutions be designed to restore satisfaction. Restoring satisfaction after a failure will help firms increase overall satisfaction and reduce customer switching. While prior studies have measured the effect of service failures, and service recovery on customer satisfaction in various service industries (Keaveney, 1995; Chang et al., 2010; Duffy et al., 2006), the mechanisms of service failures and recovery efforts' effects on satisfaction are not as well documented in theoretical or empirical studies (Davidow, 2003). The antecedents of recovery satisfaction are not well understood. This study, therefore, attempts to contribute in this area.

The theoretical background for the current study is drawn from the literature on expectancy disconfirmation, organization justice theory, criticality, and service failure severity. These theories provide a basis for explaining how service failures and providers' efforts to recover from service failures affect customer satisfaction. The expectancy-disconfirmation model has been used to describe how the difference between a customer's expectation of the level of service failure recovery that a provider would provide and the actual recovery performance impacts satisfaction. Despite the literature studying predictive recovery expectations, few studies have focused on normative recovery expectations. Predictive expectations describe how a customer believes a provider would act in a particular situation whereas normative expectations describe how a customer believes a provider should act. How the gap between customers' expectations of recovery that a provider should provide and actual recovery performance impacts

satisfaction presents a research opportunity. The focal point of this paper will explore criticality and failure severity's influence on customer's normative recovery expectations.

Service recovery satisfaction has been studied in various consumer service settings. However, there have been few studies of recovery satisfaction of enterprise services sold to firms. This paper fills this gap by researching service recovery satisfaction in the context of enterprise Internet services sold to Small and Medium Enterprises (SMEs). Internet service is an essential competitive technology that facilitates information sharing between firms' vendors, customers, and other organizations in their interorganizational networks. Interorganizational networks link multiple organizations to achieve certain goals or resolve specific problems (Elgarah, 2005).

I.II Research Questions

The current study proposes to use Organization Justice Theory within the context of the Expectancy Disconfirmation framework to understand enterprise customer recovery satisfaction.

The research questions addressed in this study will include:

RQ1: How are business managers' and purchasing decision makers' service failure response expectations established in Small and Medium Enterprises (SME's)?

RQ2: What factors should service providers consider when determining the level of recovery response and compensation given to Small and Medium Enterprise (SME) customers after a service failure?

I.III Research Methodology

This paper employs a field study research methodology. This study will collect data on SME recovery expectations by surveying business managers and purchasing decision makers.

Subjects will be asked to recall a specific critical service failure. They will then be asked to

recall what their expectations were for service failure recovery, how they rated the provider's recovery performance, and the resulting disconfirmation and satisfaction with the recovery.

This study's results are expected to be consistent with prior research. It is expected that the Disconfirmation Model of Recovery (McCollough et al., 2000), which postulates that predictive expectations for both failure and recovery can influence satisfaction will be found to extend to also include normative justice-based expectations. So, not only will customers' expectations for what might occur affect satisfaction, but their expectations for what should occur should also affect satisfaction. Furthermore, this study is expected to find that customers not only form normative recovery expectations as found by Yim et al., (2003), but that criticality influences the formation of these normative recovery expectations. For example, it is logical to postulate that customers might expect that a higher level of service recovery if they had purchased the service to support a critical business requirement.

I.IV Organization of Manuscript

This study will evaluate the ground covered by prior research and uncover gaps in understanding which this study will address. The next section of this paper will start with a literature review to set the theoretical foundation. A conceptual model and hypotheses will be proposed. The study setting and research methodology will then be presented. Following data collection, analyses and results will be discussed. This paper will finish with a summary and conclusions. The current study's contributions to literature, limitations and opportunities for further research will be provided.

LITERATURE REVIEW

The theoretical background for this research is based on the literature on Organization Justice Theory, expectancy disconfirmation, criticality, and service failure severity. Prior literature describing concepts relevant to the current study will be reviewed and the domain of constructs included in the current study's conceptual model defined. Specifying the domain of the construct is the first and most important step in construct validation because unless a construct's domain is well defined, there is no way to know how to measure the construct. During this stage of the study, the nature of constructs and their conceptual themes will be explored. The ideas that the construct is intended to represent and an understanding of how a construct is differentiated from other constructs will be developed (MacKenzie, 2011). The next section of this paper will discuss each construct and will specify which concepts will be included and excluded in the each construct's domain (Churchill, 1979).

II.I Satisfaction

Researchers have defined consumer satisfaction as a perception and an emotional response to that perception. Tse et al (1988) describes consumer satisfaction as "the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some other norm of performance) and the actual performance of the product as perceived after its consumption." This type of emotional response is defined by Spreng (1996) as overall satisfaction which is "an affective state that is the emotional reaction to a product or service experience."

Customer satisfaction with a service recovery experience is influenced by both performance and how that performance stacks up against some standard. Building upon Oliver's (1980) expectation disconfirmation model, Spreng (1996) proposed a more comprehensive

model positing that overall satisfaction is comprised of two dimensions: attribute satisfaction and information satisfaction. Attribute satisfaction is described as a customer's satisfaction with the recovery experience whereas information satisfaction is satisfaction with the information on which the expectations were based (Spreng, 1996). For example, firms provide consumers with information regarding recovery capabilities through marketing and sales claims. Consumers may rely on this information to create expectations. If the recovery fails to perform to these expectations, consumers are likely to be dissatisfied with both performance, and the inaccuracy of the information that misled them to form such high expectations. Spreng (1996) found that when individuals were asked to rate their satisfaction with consumer experiences, 18% of overall satisfaction was explained by information satisfaction. The distinction between attribute satisfaction and information satisfaction is important because the current study's domain is limited to the testing of attribute satisfaction, and not information satisfaction. This study focuses on satisfaction with the recovery experience and does not examine the influence of the accuracy of advertising and sales claims on recovery satisfaction.

This study examines customers' perceptions of how recovery performance compares to their own expectations. This study does not attempt to measure the reputation of a provider or a third-party's evaluation of recovery performance. This study will, therefore, focus only on measuring recovery satisfaction and not quality. Quality is a judgment of a service based on information about a provider and does not need to involve a customer's own experience. Satisfaction on the other hand refers to customers' own experiences where the outcome is compared against their own expectations (Storbacka et al., 1994). Consistent with prior literature (Tse et al., 1988; Spreng, 1996), the current study defines Recovery Satisfaction as:

Recovery Satisfaction is the customer's response to the evaluation of the perceived discrepancy between prior expectations or some other norm of performance and the actual recovery performance of a service provider following a service failure.

II.II Expectancy-Disconfirmation Model

Since being introduced into the consumer behavior literature, the Expectancy-Disconfirmation model has been used to explain customer satisfaction with product and service performance. This model explains that the variance between a customer's expectations of the outcome and actual results affects satisfaction. Research suggests that when a customer's expectations are met, no impact to satisfaction occurs. However if results exceed customer expectations then positive disconfirmation occurs and satisfaction is increased. If results are worse than what the customer expected then negative disconfirmation occurs and satisfaction is decreased (Erevelles, 2003). Oliver (1981) posits that customer satisfaction has three antecedents: expectations, disconfirmation, and perceived performance.

Expectations are believed to be influenced by product attributes, including an individual's prior experience with the product, or similar products; sales and marketing communications, as well as the individual's personality traits such as the ease of being persuaded. Expectations consist of an individual's estimate as to the probability and desirability of an event and sets a reference point from which an individual makes a comparative judgment. Lower than expected outcomes result in negative disconfirmation and outcomes that exceeds the reference results in positive disconfirmation (Oliver, 1980).

If a consumer purchases a product that he expects will perform poorly and the product meets this expectation, it would be illogical to predict that this customer would be satisfied with the performance (Spreng, 1996). A more reasonable explanation would be that the customer would be satisfied only if performance meets his expectations and if his expectations were desirable. Oliver's (1981) argues that both expectations and desirability influence perceptions.

Perceived performance is viewed to be satisfactory if either positive disconfirmation of a desirable event or negative disconfirmation of an undesirable event occurs. On the opposite side, negative disconfirmation of a desirable event and positive disconfirmation of an undesirable event bring dissatisfaction (Oliver, 1981).

Spreng (1996) further extends Oliver's (1981) argument that that desires should be considered together with expectations to explain satisfaction by introducing two new constructs: expectation congruency and desires congruency. He defines expectation congruency as "the consumer's subjective assessment of the comparison between his or her expectations and the performance received." Desires congruency is defined as "the consumer's subjective assessment of his or her own desires and the performance received" (Spreng, 1996).

Spreng (1996) provides empirical support for Oliver (1981)'s argument with an experiment conducted in a consumer products setting. The experiment's results show that desires congruency and expectations congruency explained 88% of the variance in attribute satisfaction and 30% of the variance in information satisfaction.

Previous studies of expectancy disconfirmation focused on disconfirmation's effects on satisfaction with product or service performance. McCollough et al. (2000) extends the application of the disconfirmation paradigm to service recovery by positing a disconfirmation model of recovery. This model explains that recovery satisfaction is a function of recovery disconfirmation, supported by justice theory. To test this model, a scenario-based experiment was conducted with passengers in an airline setting. Passengers waiting to board flights completed surveys to measure their expectations, rate the airlines' recovery performance, and level of justice during the interaction. While the airlines' recovery performance was manipulated by the researchers, the study measured the passengers' own expectations. The results confirmed

that expectations and performance affect disconfirmation; and disconfirmation in turn influences recovery satisfaction.

Consistent with prior literature (McCullough et al., 2000), the current study defines Recovery Disconfirmation to be:

Recovery Disconfirmation is the customer's evaluation of the perceived discrepancy between prior expectations and the actual recovery performance of a service provider following a service failure.

II.III Organizational Justice Theory

Organizational justice theory explains how an individual makes judgments regarding the equity or fairness of a transaction, and how these attributes influence satisfaction during exchanges between an individual and a firm (Colquitt et al., 2005). An exchange takes place when a customer incurs costs to obtain service from a provider. When a service failure occurs, the provider interrupts or otherwise affects the customer's service. Following the failure, the customer might evaluate the provider's recovery effort to determine whether the provider has performed fairly given the customer's cost to obtain the service, including the fees that the customer paid the provider and the importance of the service to the customer. Three different dimensions of justice are described in the equity literature: distributive justice, procedural justice, and interactional justice. Distributive justice is the most studied followed by procedural justice.

Distributive Justice conceptualizes the fairness of outcomes. Individuals continuously evaluate their inputs into a relationship against the benefits from that relationship. If they perceive that they have contributed more into a relationship than they have received then they believe that they are being treated unfairly. The individual will try to rebalance the relationship to restore fairness by decreasing his or her inputs while demanding an increase in the benefits derived in an effort to cure the deficit (Adams, 1965). In a service recovery context, customers might consider their contributions to include the fees that they pay providers, their efforts and

costs to procure the service, as well as the importance of business processes that they have entrusted to a service's successful performance. If customers perceive that their contributions are greater than the effort, attention, and resources that providers contribute to respond to service failures, then they may demand that providers increase recovery performance, or feel that the recovery is inadequate.

Unlike Distributive Justice which involves the fairness of outcomes, Procedural Justice is concerned with the fairness of processes. Customers evaluate the fairness of providers' procedures for complaint handling and resource allocation during service failure resolution. Research suggests that customers perceive higher equity during the recovery process when they feel that they were able to directly impact the outcome or when they had the opportunity to communicate their views to decision-makers (Goodwin et al., 1992). Research examining individuals' response to different types of procedures find that differences in outcome allocation procedures influences judgment of the decision's fairness independent of the outcome's favorability (Bies et al., 1987).

Research suggests that customers consider multiple aspects of procedural justice. Consistency is a provider's uniform application of policies to all customers in similar situations. Bias suppression is the allocation of resources by a provider to resolve a customer's problems without prioritizing the provider's own interests above those of the customer. Firms typically refer to bias suppression as "putting the customer first." Accuracy is the allocation of resources where the need is based on good data. Correctibility is the existence of processes to reconsider and change an improper allocation decision. Ethicality is the making of allocation decisions in a manner consistent with the customer's morals (Leventhal, 1980).

Customer satisfaction with recoveries appears to increase when providers apply recovery policies uniformly to customers in similar situations and when procedures are perceived to be ethical. For example, a provider's consistency in application of policies might be challenged if a customer perceives that the provider gives preferential treatment to favorite customers. In another example, the customer might experience a service problem, and after having endured a long wait for help, discovered that the provider was not fully staffed. The customer might blame the provider for understaffing in order to reduce costs at the customer's expense. Correctibility would be a concern if the provider mistakenly overlooked a customer complaint. A customer might be concerned with the provider's ethicality if the customer felt that a provider lied about its role in causing a service failure.

Interactional Justice is concerned with the fairness of interpersonal communications in the organizational process. While procedural justice is concerned with the decision making process, studies show that individuals are also concerned with how the procedures are carried out. Components of interactional justice include truth, which is the perceived level of truth in the communication. Respect is the treatment of the individual with courtesy and consideration. Propriety is the perceived lack of prejudice. Lastly, justification is the ability of the authority to provide an adequate explanation for decisions made (Bies et al., 1986). Customers would logically expect providers' recovery policies to be fair and to be treated with respect and without prejudice. Customers also expect businesses to be accountable by being able to truthfully explain and justify decisions that impact them.

Some studies chose to combine procedural and interactional justice into a single construct when research subjects have been unable to distinguish between them. Following Yim et al. (2003), the current study combines procedural and interactional justice concepts into a single

construct that will be referred to in this study as procedural justice. The current study adopts a formative measurement model for procedural justice with three dimensions: apology, courtesy, and speed of recovery.

A practical problem for researchers in justice-based studies is to understand how research subjects evaluate equity. Customers contribute inputs into a relationship with a provider such as fees paid to the provider, the cost of procuring the service, and dependency on the provider. In return, customers receive a certain level of performance as an output. The value of the service to the customer less the cost of the customer's inputs yields a net benefit. On the other hand, a provider's input into the relationship would be its costs, and in return, it receives the output of customer revenue. Justice theory posits that customers compare their net benefit from a relationship to the net benefit to a provider in order to determine if an exchange was equitable, so researchers must understand how customers compare their inputs into the relationship to the benefits that the providers give them in return.

Research suggests that customers and providers are unable to easily estimate the other's ultimate economic or psychological outcomes (Oliver et al., 1989). The first problem that customers face in evaluating the equity of outcomes is the customers' incomplete knowledge of the provider's inputs and outputs. For example, if a customer perceives recovery performance was high relative to the profitability of that service to the provider, the customer would be expected to evaluate the transaction to be fair. It would be logical for a customer to require a higher level of response from the provider to remedy a failure of more profitable services. However, in practice, a customer would have limited knowledge of the provider's true costs and profitability for their specific transaction. The second problem that customers face in evaluating

the equity of a transaction is determining the value of their own inputs and outputs, especially when costs and benefits are sometimes intangible.

Oliver et al. (1989) suggests that customers overcome the problems of incomplete knowledge of the other party's net benefit, and the difficulty in accurately calculating their own net benefit by using two types of approximations to evaluate equity. Proportional equity is achieved when parties get what they deserve and does not require that inputs and outputs be equal. Proportional Equity only requires that outcomes and inputs of both parties be in rough approximation to one another, hence Proportional Equity is also known as Weak Proportionality. From a customer's perspective, Proportional Equity exists when the customer perceives that both they and provider are able to maximize outcomes and minimize inputs.

The second type of comparison is known as Preference. Preference is achieved when the outcome benefits the observing party more than other parties. From a customer's perspective, Preference is achieved as long as his outcome is maximized, regardless of the provider's outcome (Oliver et al., 1989). Service recovery research finds that customers perceive greater equity when they receive larger rewards and resource allocations in recovery (Goodwin et al., 1992). It would be logical to also expect that customers would feel that the recovery they receive from a provider is fair as long as they perceive that they have received performance greater than or equal to what they purchased. For example, if a customer purchased a service from a provider with a guaranteed recovery response time of one day, and if the failure was resolved within one hour, the customer would be expected to feel that the exchange was fair.

II.IV Role of Justice in Setting Normative Recovery Expectations

Expectancy Disconfirmation shows that customer satisfaction increases when a provider's recovery response exceeds expectations. Justice theory explains that customer

satisfaction with recovery efforts after a failure is higher when they perceive the provider's level of response and recovery procedures to be fair; and when customers feel that the provider is treating them with respect and without prejudice. Prior research predicts that distributive and procedural justice impacts customer satisfaction during service recovery. Compensation, response speed, a service provider's apologetic attitude and level of courtesy was found to influence customer satisfaction (Smith et al., 1999). While expectancy-disconfirmation and equity have been used separately to explain customer satisfaction with recovery in prior studies, Yim et al. (2003) was the first to propose integrating equity within the expectancy-disconfirmation model by using it to explain that recovery satisfaction increases when providers exceeds customer expectations for a fair failure recovery response. Yim et al. (2003) defined this hybridized concept of normative expectations as a customer's expectations for fair treatment.

Recovery expectations research prior to Yim et al. (2003) focused on how customer predicted a provider "would" respond. Yim et al. (2003) extended this research to show that customers also formed normative expectations representing a customer's ideal of how providers ought to respond. Findings that "should" expectations influence customer satisfaction are consistent with research showing that satisfaction stems from not only performance that exceeds expectations, but also requires those expectations to be desirable (Spreng, 1996). Equity research showed that fairness was an attribute that customers found to be desirable.

Yim et al. (2003) conducted a two-part experiment to study expectations of diners at their favorite restaurants. In the first part, respondents were given a hypothetical service failure, and asked about their initial failure dissatisfaction, propensity to complain, and expectations for how the restaurant should correct the problem. In part 2, respondents were presented with a random service recovery scenario and asked to evaluate the recovery in the context of disconfirmation

and justice. Lastly, they rated their recovery satisfaction and post-complaint behavioral intentions toward the restaurant.

The results of this experiment suggest that customers form distributive justice-based and procedural justice-based normative recovery expectations; and then evaluate recovery performance against these standards. It also shows that during a failure, customers continue to use justice-based processes to determine their expectations for recovery. This study's most significant finding is that integrating perceived justice in the expectancy-disconfirmation framework is a valid alternative to considering disconfirmation and perceived justice effects separately in a service recovery model (Yim et al. ,2003).

Synthesizing organizational justice theory with the theory of normative expectations, the current study defines distributive justice-based normative recovery expectations as:

Distributive justice-based normative recovery expectations are a customer's perceptions of how a service provider ought to compensate the customer in order to produce a fair outcome from the recovery process following a service failure.

Prior studies have included dimensions of response speed, apology, and courtesy of interpersonal communications when describing customer expectations within the context of organizational justice. Therefore the current study defines procedural justice-based normative recovery expectations as:

Procedural justice-based normative recovery expectations are a customer's perceptions of the fairness of the service provider's processes and interpersonal communications with the customer during the recovery process following a service failure: comprising dimensions of response speed, apology, and courtesy of interpersonal communications.

Because customers' perceptions of their own experiences are measured in customer satisfaction case studies, distributive justice-based normative recovery performance is defined to be:

Distributive justice-based normative recovery performance is a customer's perception of how fairly a service provider has compensated the customer during the recovery process following a service failure.

And procedural justice-based normative recovery performance is defined to be:

Procedural justice-based normative recovery performance is a customer's perception of how fair the service provider's processes and interpersonal communications with the customer were during the recovery process following a service failure: comprising dimensions of response speed, apology, and courtesy of interpersonal communications.

Based on prior research on satisfaction and disconfirmation, and the differentiation between distributive and procedural justice, I put forth the following hypotheses:

Hypothesis 1a: Distributive recovery disconfirmation has a positive relationship with recovery satisfaction.

Hypothesis 1b: Procedural recovery disconfirmation has a positive relationship with recovery satisfaction.

Building upon the extant literature's findings that disconfirmation is positively influenced by the extent that performance exceeds normative expectations, the current study's next hypotheses are:

Hypothesis 2a: The extent that distributive recovery performance exceeds normative distributive recovery expectations has a positive relationship with distributive recovery disconfirmation.

Hypothesis 2b: The extent that procedural recovery performance exceeds normative procedural recovery expectations has a positive relationship with procedural recovery disconfirmation.

II.V Service Criticality

The importance of a service to a customer may influence the customer's expectations of how the provider ought to respond in the event of a recovery. It is an antecedent that has been considered in service failure research. Studies report that a consumer's response to service failure

recovery efforts during more important purchase occasions may differ from responses during less important occasions (Ostrom et al., 1995).

Consistent with prior studies (Webster et al., 1998), the current study defines criticality to be:

Criticality is the customer's perception of the importance of successful service delivery during a specific occasion.

A study investigated the effect of criticality on customer satisfaction with service recovery Webster (1998). It was found that the level of recovery effort required to restore customer satisfaction in a low criticality situation was less than the effort required to restore satisfaction in a high criticality situation. This finding correlates with customers' normative justice expectations because a customer in a high criticality situation incurs a greater loss from a service failure than a customer with low criticality needs.

Researchers also recognize that criticality may have a different effect when observed in services where success or failure can be readily evaluated shortly after service delivery versus types of services where the consumer's opinion of successful service can only be created over a longer consumption timeframe. Studies divide services into experience and credence categories. Experience services are those that consumers can readily evaluate after consumption, and credence services those that are difficult to evaluate immediately after a consumption episode.

In a scenario-based study on the effect of criticality on satisfaction for different service types, researchers examined experience services including hotels, fast food outlets, hair salons, and checking accounts. Credence services tested include tax consultants, psychotherapy, physicians, and financial investments. The study found that criticality influenced customer satisfaction with service performance for both experience and credence services, however, criticality had a stronger effect on satisfaction with credence services (Ostrom et al., 1995).

Building upon the extant literature's findings that criticality influences recovery satisfaction; and that disconfirmation of normative expectations also influences recovery satisfaction, the current study attempts to fill the gap in understanding the mechanism by which criticality influences satisfaction by positing that criticality influences recovery satisfaction by affecting customers' normative expectations. Therefore the next hypotheses are:

Hypothesis 3: Criticality has a positive relationship with normative distributive recovery expectations.

Hypothesis 4: Criticality has a positive relationship with normative procedural recovery expectations.

II.VI Service Failure Severity

The intensity of a service problem may influence the customer's expectations for how the provider ought to respond during the recovery. Even though providers strive to provide perfect service, errors are inevitable (Hart et al., 1990). Service failures occur when service is unavailable, unreasonably delayed or when service is delivered below an acceptable level (Webster et al., 1998).

Consistent with prior studies (Webster et al., 1998), the current study defines Failure Severity to be:

Service failure severity is the customer's perception of the intensity of a service problem.

The severity of the service failure has been found to increase the customer's perception of loss (Weun et al., 2004). Customers judge high and low magnitude failure conditions differently.

Scenario-based research found that customers gave high-magnitude failure conditions significantly higher severity ratings than low-magnitude failure conditions (Smith et al., 2002).

Core service failures occur when the customer fails to receive the basic services promised by the

provider; and are considered to be high magnitude failures. Core service failures are relatively serious and the recovery effort employed by the provider would be higher than with minor failures (Levesque et al., 2000). This finding would be consistent with the literature on normative justice. Higher levels of both distributive justice in the form of greater recovery compensation and procedural justice in terms of a fast, courteous response and resolution would be expected after core service failures.

There are two types of core failures: unavailability or denial of service, and delay. Unavailability is a complete contract breach because the customer cannot access the contracted services and is more severe than delay (Levesque et al., 2000). Aside from core service failures the literature also describes process failures, which occur when the delivery of a core service is flawed or deficient, but not serious enough to deprive the customer from receiving the basic service promised (Smith et al., 1999). An example of process failure would be when the service works, but the provider's employee fails to leave the customer with a copy of the operating instructions. The loss to the customer from a core failure is much higher than that resulting from a process failure.

Building upon prior research findings that the intensity of a service failure affects the customer's perception of loss, and that the recovery effort necessary to restore satisfaction increases with failure severity; the current study posits that service failure severity may influence the customer's expectations of the provider's recovery response. Additionally, the current study posits that failure severity moderates the relationship between criticality and normative recovery expectations. Therefore, the next hypotheses are:

Hypothesis 5: Failure severity has a positive relationship with normative distributive recovery expectations.

Hypothesis 6: Failure severity has a positive relationship with normative procedural recovery expectations.

Hypothesis 7a: Failure severity moderates the relationship between criticality and normative distributive recovery expectations.

Hypothesis 7b: Failure severity moderates the relationship between criticality and normative procedural recovery expectations.

Table 1 summarizes the current study's hypotheses.

Table 1: Summary of Hypotheses	
Label	Hypothesis
H1a	Distributive recovery disconfirmation has a positive relationship with recovery satisfaction.
H1b	Procedural recovery disconfirmation has a positive relationship with recovery satisfaction.
H2a	The extent that distributive recovery performance exceeds normative distributive recovery expectations has a positive relationship with distributive recovery disconfirmation.
H2b	The extent that procedural recovery performance exceeds normative procedural recovery expectations has a positive relationship with procedural recovery disconfirmation.
H3	Criticality has a positive relationship with normative distributive recovery expectations.
H4	Criticality has a positive relationship with normative procedural recovery expectations.
H5	Failure severity has a positive relationship with normative distributive recovery expectations.
H6	Failure severity has a positive relationship with normative procedural recovery expectations.
H7a	Failure severity moderates the relationship between criticality and normative distributive recovery expectations.
H7b	Failure severity moderates the relationship between criticality and normative procedural recovery expectations.

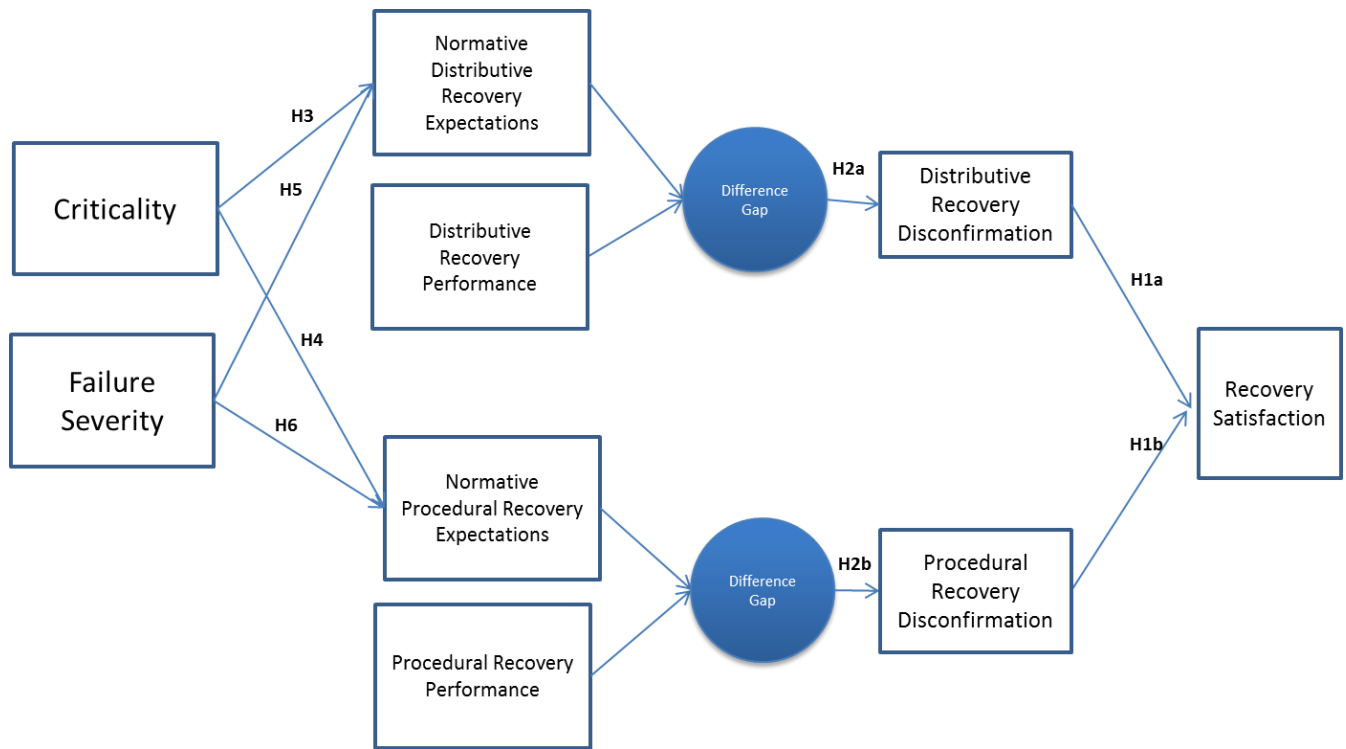
PROPOSED CONCEPTUAL MODEL

In order to test the propositions of the current study, a normative expectancy disconfirmation recovery model is presented in Figure 1. This model addresses the previously discussed gaps in literature by describing normative recovery expectations, exploring the relationship between criticality and normative recovery expectations and linking failure severity to normative recovery expectations.

Following McCollough et al. (2000), this model posits that recovery satisfaction is dependent on recovery disconfirmation. Unlike McCollough et al. (2000), which measures disconfirmation of a customer's predictive expectations, the current study extends McCollough's (2000) research to determine if the model will apply to normative expectations. The current study measures recovery disconfirmation, defined in this study to be the difference between a customer's normative recovery expectations, which are the customer's expectations for how the provider should respond during a failure, and the provider's actual recovery performance.

The criticality section of the model holds that justice-based normative recovery expectations would be affected by the criticality of the service to the customer. It is logical that the importance of the service to the customer could influence the customer's expectations for recovery compensation, speed, an apology, and a courteous response. The failure severity portion of the model holds that justice-based normative recovery expectations are influenced by failure severity.

Figure 1: Conceptual Model: Disconfirmation of Normative Recovery Expectations



III.I Example Illustrating Proposed Conceptual Model

In order to summarize the literature reviewed and to better illustrate the proposed conceptual model, consider the following example:

The literature that has been reviewed provides a basis for understanding how customer satisfaction is affected during the recovery effort following a service failure. First, the literature emphasized that satisfaction is an emotional response to a product or service (Spreng, 1996). This emotional reaction is influenced by how a particular product or service performs against a standard (Spreng, 1996). Satisfaction is an individual's own experience of a service, differentiated from quality, which is a cognitive judgment of a service based on information (Storbacka et al., 1994).

Now, to the example. Colleagues, Dick and Jane have both heard that a newly opened restaurant has good ambience, delicious food, and attentive service. This new eatery's attributes are widely praised by food writers and confirmed by recommendations from their friends who have eaten there. Upon reviewing the restaurant's menu, both Dick and Jane believe the prices to be reasonable. Dick finally decides to have his son's birthday dinner at the restaurant. Following his experience, Dick shares with Jane that the restaurant has several positive qualities and that he was satisfied with the experience. Jane has not yet visited the restaurant.

In this situation, both Dick and Jane can assess the quality of the restaurant from an outsider's perspective. However, only Dick can experience satisfaction because satisfaction is an emotional response, requiring personal exposure to a product or service.

The logical path then is to next understand the mechanism by which Dick compared his dining experience at the restaurant against some standard in order to arrive at an evaluation of satisfaction. Expectancy-Disconfirmation literature explains that standards or expectations are set when consumers estimate the likelihood of an outcome and make a judgment as to the desirability of that outcome (Oliver, 1980). A customer compares performance against his or her expectations. Positive disconfirmation occurs when performance is higher than expectations and negative disconfirmation occurs when performance does not meet expectations. Positive disconfirmation of a desirable outcome results in satisfaction and positive disconfirmation of an undesirable outcome begets dissatisfaction (Spreng, 1996). Referring back to the example, if Dick anticipates a pleasant dinner with attentive service and the restaurant surpasses his standard, then the performance has exceeded his expectations for a desirable outcome and the prior research would suggest that Dick would experience satisfaction. On the other hand, if Dick anticipated an expensive dinner with unappealing food and poor service and the restaurant met

this expectation; the literature would predict that Dick would not be satisfied (Oliver 1981; Spreng 1996; Yim 2003).

Referring back to the example, the restaurant was so popular that it took much effort for Dick to secure a reservation. On the night of the dinner, Dick explains to the server that the dinner is a special occasion for him and his family as he was celebrating his son's birthday. He feels that the servers should be particularly attentive to them because of the special occasion. This is an important night for Dick and his family. The criticality of this evening is very high for Dick. He also expects the food to be appetizing because of the restaurant's high price. Studies show that customers form "should" expectations as a normative standard representing the customer's ideal of what ought to occur (Yim et al. 2003). According to the literature, Dick would form Procedural Justice-based expectations of especially attentive and courteous service because of the importance of the occasion to him. Furthermore, existing literature explains that Dick would have high normative expectations of the food quality because of his perception of the high price that he was paying for it. Dick's expectation would be consistent with Distributive Justice Theory. As the server leaves to bring the bread, Dick reflects to himself on the importance of this event to his family. Research shows that service quality is more important for highly critical purchases than for less critical purchases (Ostrom et al., 1995).

As the evening progresses, all does not proceed as planned. Dick notices the waiter did not spread the napkin on his lap. Later he selects a steak from the menu based on the server's recommendation. When the steak is served to him, it is overcooked and inedible. According to service failure literature, the waiter's neglect to help Dick spread his napkin is a process failure, a minor fault that does not prevent the customer from receiving the basic service promised.

However, the inedible steak is classified as a core service failure, or a high magnitude failure (Levesque et al., 2000).

After having such high expectations of a wonderful dinner that he had greatly anticipated, Dick was very disappointed with these service failures. The waiter's failure to help Dick spread his napkin annoyed him, but it was really the overcooked steak that affected his satisfaction the most because it was such a severe service failure. Dick raised his hand to signal the server's attention and began to complain. Because of the importance of this occasion to him, the high price of the food, and the severity of the restaurant's failure to provide him an edible steak, Dick expected the restaurant to courteously and quickly replace his steak. The restaurant needs to employ a higher recovery effort to restore Dick's satisfaction after a high magnitude service failure – than the effort required after a minor service failure (Levesque et al., 2000).

Fulfilling the restaurant's stellar reputation, the server quickly apologizes and promises to bring Dick a new steak. The server explains that the error was the restaurant's fault and that the kitchen would have Dick's steak ready within fifteen minutes. Dick calms down after concluding that he could wait an additional fifteen minutes for a new steak.

Within ten minutes, the server reappears with a perfectly cooked steak for Dick. Following the server, the chef and the restaurant manager come out to apologize. The manager offers Dick and his family a complementary dinner and a bottle of wine. Initially, Dick feels uncomfortable accepting the complementary dinner because he felt that the restaurant was fair by making an apology and replacing his steak so quickly. However, after considering it further, he was happy that the restaurant went so far to earn his business. Dick feels that he came out ahead of the restaurant in this situation. Distributive justice literature describes that in the equity process, a customer compares his inputs in the relationship against his outputs and also his perceptions of

the provider's inputs against its outputs with the equity score being the difference between inputs and outputs. The customer is satisfied if his equity score is higher than the providers. Customer's perception of fairness and satisfaction tend to increase when the customer feels that he has an advantage over the provider (Oliver et al., 1989). In addition, the restaurant fulfilled Dick's desire for procedural justice. Dick felt that he had an opportunity to voice his complaint, and that the management took the proper steps to make him happy. The next day at work, Dick relays his satisfaction with the restaurant to Jane.

GAPS IN SERVICE RECOVERY STUDY SETTINGS AND METHODOLOGY

Industries that have been studied in the context of service recovery have included airlines, hotels, and restaurants. Most service types studied have short consumption timeframes. The criticality literature classifies these types of services as ‘Experience’ services. Experience services are those where consumers can readily evaluate success or failure shortly after service delivery versus ‘credence’ services, where consumer’s opinion of the service can only be evaluated over a longer consumption timeframe (Ostrom et al., 1995). Very few studies have examined service recovery in the credence services area. When the field of recovery literature is narrowed to focus on the effect of normative expectations on disconfirmation and customer satisfaction, even fewer Credence studies exist.

Service recovery in credence service settings should be studied more extensively because research has found that the effect of criticality on consumer evaluations of quality to be more pronounced on credence services than on experience services (Ostrom et al., 1995). Perhaps this is because, during credence services, the customer maintains a relatively long and continuous relationship with the provider for the duration the service is provided. This long consumption timeframe could allow more opportunities for different equity processes to operate during different stages of the relationship (Oliver et al., 1989). Logically it would follow that a customer may have more opportunities to evaluate service perceptions against expectations than with Experience services and in some cases, more opportunities to interact with the provider. Examples of credence services that need to be studied more extensively include information technology and telecommunications; both of these services are of significant importance to individuals as well as organizations.

Most recovery studies have focused on services provided to individuals. Only a few of the recovery studies had focused on services provided to organizations. Studies of recovery of credence services in an enterprise setting are even rarer. Yim et al. (2003) recommended that their study of normative recovery expectations in a restaurant setting be should be validated in more service industries. Gaining an understanding of how managers in firms set normative expectations for enterprise services, and how disconfirmation of these expectations affect satisfaction can aid providers conduct more effective recovery planning. For example, if criticality is found to influence procedural justice-based expectations, then a provider may improve its customer satisfaction by creating and advertising service tiers with higher service level agreements to customers with critical needs. Furthermore, a study of enterprise services would allow the consideration of measures of criticality and service failure severity in the form of risk of monetary loss which could result from a failure, which may be more objectively measured in an enterprise service setting than with individual consumer services.

RESEARCH SETTING

The current study attempts to fill the gap in the service recovery literature on credence services provided to enterprise customers. This study specifically examines service failure and recovery of Internet services, an information technology provided to Small and Medium Enterprises (SME's). This study will explore how criticality of the service to these customers, and the severity of failures affect customer expectations.

V.I Enterprise Reliance on Interorganizational Networks

Interorganizational networks are the connections between organizations. In the context of business organizations, interorganizational networks connect enterprises to their trading partners. In recent years, interorganizational systems have become increasingly globalized and virtualized. Interorganizational systems are founded on the principle that continual data and information sharing among trading partners will facilitate strategic business development leading to overall management of costs, improvement in customer satisfaction, and profitability across the supply chain (Oliver, 1990; Belanger et al., 1998; Elgarh, 2005).

V.II The Internet as an Interorganizational Support Architecture

The basic requirement for the success of interorganizational systems is that there would be uninterrupted sharing of data and information among trading partners. One of the backbone systems that would facilitate such data and information exchange is the Internet. The Internet is a telecommunications network, and information systems standards over which interorganizational information systems can be constructed. Before the Internet, communications and knowledge links to connect an organization's key databases with those of its trading partners in a supply chain were more difficult to create (Lancioni et al., 2000). A patchwork of proprietary information systems, networks and standards across different organizations in a supply chain

made linkages expensive to develop. Only companies with significant resources to build and influence to persuade other organizations in its supply chain to adopt common information systems communications standards could implement the electronic exchange of even the most routine business transactions. The Internet's invention facilitated the linkage of a firm to its trading partners. It's suitability for this purpose is attributed mainly to its public domain code and protocol, a heterogeneous installation base that is independent of information systems equipment used, ease of use, and browsing capability. The Internet's facilitates the exchange of static information such as price lists, or dynamic information such as orders, and pricing (Stefansson, 2002). Researchers found that most popular uses of the Internet for supply chain management include transportation, order processing, procurement, and customer service (Lancioni et al., 2000).

V.III Small and Medium Enterprises (SMEs)

The efficiency and cost savings from inexpensive interorganizational information systems is particularly important to smaller firms, otherwise known as Small and Medium Enterprises (SME) that operate with fewer resources but confront similar operational challenges as larger companies. SME's are a significant portion of the U.S. economy and an important contributor to its growth (Lee et al., 2009). The U.S. Small Business Administration has defined SME's to include all enterprises with fewer than 500 employees (US International Trade Commission, 2010). Following this definition, there were over 5.7 million SME's in the United States in 2010 (2010 U.S. Census). SME's make up 99.7% of all US Businesses, employ 49.1% of all workers, and contribute 42.6% of all payrolls (2010 U.S. Census).

The Internet levels the playing field for smaller firms by increasing visibility, profile, and market opportunity, advantages which were previously enjoyed only by larger enterprises with

greater resources (Galloway et al., 2011). Even though SME's recognize the importance of the Internet for market reach and operational effectiveness, adoption of Internet services by smaller businesses yet lags behind larger firms (Lee et al., 2009).

Internet service reliability is important to SME's because of the Internet's role in connecting them to trading partners. Despite the need for reliability, service-related failures are common with potential negative impacts on SME's. The requirement that Internet Services be "always on" puts a high availability requirement on this type of service; this level of service availability is demanded by few other types of business services. Internet service is a credence service because firms typically subscribe to Internet services with contracts that extend over several years; and customers develop their perceptions of satisfaction with performance over this long consumption timeframe. In addition, the growing adoption of Internet technology by businesses highlights the importance of service recovery and satisfaction and their impact on organizational revenues and profits.

V.IV Internet Service Providers

Internet Service Providers are companies that own and operate the infrastructure that connects customers to the Internet. They will be referred to as providers throughout this paper. The most common infrastructure in use at the time of this study includes underground wiring, terrestrial wireless antennas and satellite technology. Providers recognize that SME's may be a potentially attractive market segment because the majority of U.S firms are SME's. The providers are also interested in SMEs because the cost of bringing the internet infrastructure and providing service to SMEs has generally been lower than bringing such infrastructure to larger enterprises. This is because SME's are usually located closer to providers' existing residential wiring infrastructure unlike larger firms that might be located in business parks or city centers

which may require costly construction projects to service. Another advantage is, since SMEs require less bandwidth than larger firms, the service can be delivered on copper wiring instead of more costly fiber optic infrastructure.

Although SMEs are an attractive market segment, providers recognize that the competition is high. In recent years, newer competitive Internet access technologies such as wireless and fiber optic wiring have emerged. Consequently, providers are concerned that, unless their customers are satisfied, they will not be able to retain them. One of the primary causes that affect customer satisfaction negatively is service failure. Service failures occurring at any point in the contracted service period would affect customer satisfaction. This is because Internet services connect SME customers to phone, fax, email, transaction networks, financial, inventory, and other back-office systems. Even a service failure of several minutes in duration can interrupt transactions resulting in significant cost increases and loss of revenue to these small businesses. Consequently, providers are devoting greater resources and strategic planning to increase customer satisfaction with faster and more effective service recovery efforts. Providers are interested in finding ways to reduce declines in customer satisfaction after a service failure and also in taking steps to improve customer satisfaction along with quick recovery efforts.

METHODOLOGY

VI.I Research Design

The current research was conducted as a field study to analyze retrospective data on Internet service failures and recoveries from multiple enterprises. Contemporaneous measurement of subjects' attitudes and experiences during a service failure is ideal, but it would be difficult for researchers to design a research protocol to observe such an uncommon event. Furthermore, it is not feasible for researchers to create service failures in order to observe them because service failures may harm subjects.

Due to the difficulty of observing service failures contemporaneously, prior studies have employed either a scenario-based design to measure a subject's responses to hypothetical future situations, or a retrospective design to measure the subject's attitudes, and beliefs during past experiences (Wallendorf et al., 1993).

The current study used a retrospective design to collect data from subjects regarding past experiences with Internet service failure and recovery. Retrospective introspection was the most suitable approach for this study because of the study's focus on the real-life recovery experiences of SME managers and purchasing decision makers. In order to determine the influence of an enterprise's unique criticality level on a subject's recovery expectations, an actual past service recovery event needed to be examined. Because this study measured subjects' present satisfaction with a past recovery experience, a retrospective approach was appropriate. Prior studies of introspection in consumer research found that long-term retrospective accounts are an appropriate data source for research on subjects' present understandings of past events (Wallendorf et al., 1993).

The ability of subjects to remember past events accurately can be a potential limitation of a retrospective study design because a longer time frame introduces older events that may be less accessible to memory. However, the extreme nature of a service failure and recovery incident minimizes the effect of this limitation (Wallendorf et al., 1993; Blair et al., 1987). Prior research found that time frame has only a modest effect on the ability of subjects to recall extreme or infrequent events. Subjects are able to recall infrequent, vivid, or salient events such as a service failure more accurately than more frequent day-to-day occurrences (Blair et al., 1987). Dissimilar events, which are idiosyncratic in nature such as a recovery experience, are more accessible from memory than common everyday consumer occurrences (Menon, 1993). Prior studies have appropriately used long-term retrospection to obtain data about service failures (Wallendorf et al., 1993; Folkes, 1984; Richins, 1983).

VI.II Survey Instrument Development

Guided introspection is a research method in which subjects think about themselves and their actions. Their thoughts are recorded and used by researchers as data. Surveys are an instrument commonly used in consumer research to capture the attitudes, beliefs and experiences of subjects during guided introspection (Wallendorf et al., 1993).

The current study utilized a questionnaire titled “Business Internet Customer Experience Survey.” Potential subjects received an invitation by electronic mail to participate in the online survey. The invitation contained a link to the online questionnaire. The online questionnaire contained questions asking about their experiences during an Internet service failure and the ensuing recovery.

This survey had six sections. Questions in each section were presented to respondents in a random order. Respondents' answers to questions in the first section determined whether they belong to the current study's target population. First subjects confirmed whether their enterprises used the Internet or electronic mail. Second, respondents specified whether they interacted with their Internet Service Provider to either select services or resolve service-related matters. Only respondents whose enterprises used the Internet and who were also involved in service selection or recovery were permitted to complete the survey. The online survey flow dismissed unqualified respondents. The second section contained demographic questions including the number of employees and the type of services provided by the firm.

The third section asked respondents to consider one enterprise Internet service failure that they experienced. Respondents were then asked to rate the severity of that failure and the importance of Internet service to their enterprises

In the fourth section, subjects answer questions measuring their normative recovery expectations of their provider in that specific situation. Respondents rated providers' recovery performance in the fifth section, and lastly responded to questions measuring disconfirmation and recovery satisfaction in the last section.

VI.II.i Measurements. The purpose of measurements is to reflect unobservable research constructs as described in the study as completely and accurately as possible (Straub, 1989; Churchill, 1979). The process of developing and validating a measurement model involves defining constructs, generating items, collecting data, purifying measures, assessing reliability and validity of measures, and establishing norms (Churchill, 1979). Survey items were created to measure the constructs in the current study's hypotheses. Items were adapted from extant

literature to suit the context of SME Internet services in order to achieve construct validity. The extant literature describes how constructs were defined in prior studies as well as their dimensions and measurements. Discussions with Subject Matter Experts (SMEs) in the Internet services industry, market researchers, and university faculty helped to adapt measurements from prior studies for the current study and to produce new items where none existed in the extant literature (Churchill, 1979). Because prior recovery satisfaction studies were mostly conducted in a personal services or consumer products setting, consumer scales had to be customized to fit the context of an enterprise environment. Prior research shows that consumer scales can be successfully adapted to a business context (Yanamanram, 2010).

VI.II.ii Item generation and construct validity. Content validation checks determine the relevance of each item to the concepts that they were designed to measure by demonstrating that items are measuring what they are supposed to measure (Straub, 1989). The construct validation literature recommends a procedure whereby researchers create a matrix of construct dimensions and survey items for evaluation by Subject Matter Experts (SMEs). SMEs rate how well each item represents its proposed construct (MacKenzie 2011; Schultz et al., 2005).

In the current study, SME's with expertise in the measurement of customer satisfaction, including Internet service provider managers, market researchers, and university faculty were selected to evaluate a sample of survey items. (Schultz et al., 2005) writes that a study should have a minimum of 2 SME's to obtain useful variability estimates and that 4 or 5 would be ideal. The current study recruited 7 SMEs to rate the items. Raters were provided with a matrix including construct definitions followed by items proposed to measure that construct. Raters evaluated each item and assessed whether the attribute measured by this item is "essential," "useful, but not essential," or "not necessary" to the performance of its proposed construct.

Lawshe's Content Validity Ratio (CVR) was used to identify items that should be pruned as a result of the rating process. CVR is calculated as: $CVR = (ne - N/2) / (N/2)$ where ne = number of SME panelists indicating that the item is "essential," and N = total number of SME panelists. The CVR has a range from +1 to -1; positive values indicate that at least half the SMEs rated the item as essential. Following (Lawshe, 1975; Schultz et al., 2005), items with CVRs of +0.5 or greater were flagged for inclusion. Based on this criteria, 40 out of 72, or 56% of the original items qualified for retention in the final survey instrument. Table 1 summarizes the constructs and item ratings from this content validation exercise.

Items contained in the final survey instrument included four items reflectively measuring recovery satisfaction, which were adapted from service recovery literature (Webster et al., 1998; Weun et al., 2004). The final instrument included three items measuring satisfaction with CVRs of +0.5 or greater, and one additional item. Three items with CVRs of +0.5 or greater were included to measure distributive recovery disconfirmation. Five items with CVRs of +0.5 or greater were included to measure procedural recovery disconfirmation. These items were adapted from the disconfirmation literature (Webster et al., 1998; McCollough et al., 2000).

Items were modified from the normative expectations literature to measure normative expectations (Yim et al., 2003; Oliver et al., 1981). Two items with CVRs of +0.5 or greater, and one additional item were included to reflectively measure normative distributive expectations. Normative procedural expectations was modeled as a formative construct with three dimensions: apology, courtesy, and speed of recovery; consistent with the procedural justice literature (Mattila, 2001; Wirtz, et al., 2004). Each dimension was measured reflectively by individual items. Three items with CVRs of +0.5 or greater were included to measure the apology dimension. Three items with CVRs of +0.5 or greater were included to measure the courtesy

dimension. Lastly, three items with CVRs of +0.5 or greater were included to measure the speed dimension.

Items were modified from the normative expectations literature to measure performance (Yim et al., 2003; Mattila, 2001; Weun et al., 2004). Two items with CVRs of +0.5 or greater, and one additional item were included to reflectively measure distributive performance. Similar to normative procedural expectations, procedural performance was modeled as a formative construct with three dimensions: apology, courtesy, and speed of recovery; consistent with the procedural justice literature (Mattila, 2001; Wirtz, et al., 2004). Each dimension was measured reflectively by individual items. Two items with CVRs of +0.5 or greater were included to measure the apology dimension. Three items with CVRs of +0.5 or greater were included to measure the courtesy dimension. Lastly, five items with CVRs of +0.5 or greater were included to measure the speed dimension.

Items were adapted from service recovery literature (Weun et al., 2004) to measure the independent construct of failure severity. Three items with CVRs of +0.5 or greater were included to reflectively measure failure severity. New items had to be created and tested to measure criticality because the criticality literature does not provide suitable measurement models that can be modified for use in the current study. The lack of suitable criticality measures in extant literature can be attributed to the tendency of prior studies to employ a scenario-based research method which manipulated criticality in either high or low levels instead of measuring the criticality of a service or product to a respondent in a real-life setting. Four items with CVRs of +0.5 or greater were included to reflectively measure criticality.

Following content-validation checks, surveys were finalized and invitations sent to potential subjects inviting them to take part in the study. The survey instrument's constructs and items are summarized in Table 2 and the details are listed in Appendix 1: Rater Review Details.

Table 2: Rater Review Summary

Construct	Original Items	Items with CVR Ratios $\geq +0.5$	Items Included in Instrument
Recovery Satisfaction	9	3	4
Distributive Recovery Disconfirmation	5	3	3
Procedural Recovery Disconfirmation	5	5	5
Normative Distributive Expectations	4	2	3
Normative Procedural Expectations - Apology	4	3	3
Normative Procedural Expectations - Courtesy	5	3	3
Normative Procedural Expectations - Speed	6	3	3
Distributive Recovery Performance	8	2	3
Procedural Recovery Performance - Apology	3	2	2
Procedural Recovery Performance - Courtesy	5	3	3
Procedural Recovery Performance - Speed	5	5	5
Failure Severity	5	3	3
Criticality	8	4	4

VI.III Data Collection and Sample

Data was collected via surveys of Small and Medium Enterprises (SMEs) in the United States. 4979 enterprises were sent invitations by electronic mail to participate in the online survey. Enterprises received two contacts by electronic mail to improve response rates. Prior studies found that a second follow-up contact increased response rates but third or fourth e-mails had only marginal benefit (Kittleson, 1997; Yun et al., 2000). 924 survey responses were received over a period of two weeks (18.6% response). This response is comparable to rates ranging 19% to 21% as reported in studies comparing response rates between online surveys and postal surveys (Schuldt et al., 1994; Swoboda et al., 1997; Yun et al., 2000). Of the respondents, 376 were disqualified from taking the survey because they did not belong to the current study's

target population. Respondents were disqualified if their enterprises did not use the Internet or electronic mail for business operations. Respondents were also disqualified if their business responsibilities did not include either the selection of Internet Service provider or interaction with the Internet Service Provider during a service recovery process. An additional 135 surveys were significantly incomplete, which left a sample of 413 completed surveys. Subsequently, 46 responses which have a probability associated with its Mahalanobis D^2 score of less than 0.05 were screened out as multivariate outliers, leaving 367 responses available for analysis. Because this study required a minimum of 300 qualified responses in order to be representative of the SME population, a random sampling of responses for analysis could not be taken.

This study was conducted across a range of different business types and firm sizes which improves the generalizability of its findings. Demographic information collected included the number of employees and type of business. Of the 413 responses, 194 (46.7%) had fewer than 10 employees; 85 (20.6%) had between 10 and 49 employees, and 134 (32.4%) had more than 50 employees. With regard to business type, 208 (50.3%) were service businesses; 48 (11.6%) were retail; 41 (10%) were manufacturing; 11 (2.7%) were bars or restaurants; and 105 (25.4%) identified their businesses in the Other category. With respect to the privacy of respondents' business operations, neither company nor managers' names will be disclosed in this paper.

RESULTS

VII.I Test of Non-Response Error

Nonresponse error occurs when subjects included in the sample are different from the target population (Lindner et al., 2001). Because prior research shows that late respondents are often similar to non-respondents, attributes of early respondents can be compared statistically to those of late respondents. If no significant differences are found, then nonresponse error is unlikely and the responses are generalizable to the target population (Miller et al., 1983). Following Connors (1994), the current study classified subjects as either early or late responders; and Likert-scale measurements between the two groups were compared using t-tests to determine the likelihood of non-response error. Early responders were defined as subjects who took the survey after the first contact. Late responders were defined to be subjects who took the survey after the second contact. SPSS statistical software was used to run t-tests on the means of Likert scales measuring Criticality and Expectations between the early and late responder groups.

The resulting 2-tailed significance for t-tests were all greater than 0.05, the criterion for statistical significance. It is thus concluded that differences between early and late responders are not statistically significant and the current study's responses can be generalized to the SME population. With regard to Criticality, the mean of early responders was 6.11 (n=225) versus 6.24 (n=142) for late responders with a significance of 0.207. For Normative Distributive Expectations, the mean of early responders was 5.66 (n=225) versus 5.77 (n=142) for late responders with a significance of 0.303. For Normative Procedural Expectations: Apology, the mean of early responders was 6.10 (n=225) versus 6.16 (n=142) for late responders with a significance of 0.474. For Normative Procedural Expectations: Courtesy, the mean of early responders was 6.39 (n=225) versus 6.47 (n=142) for late responders with a significance of

0.248. For Normative Procedural Expectations: Speed, the mean of early responders was 6.46 (n=225) versus 6.50 (n=142) for late responders with a significance of 0.614.

VII.II Measurement Model

- *Failure severity*: Previous studies examined failure severity as an antecedent of recovery satisfaction (Gilly et al., 1982; Smith et al., 1989; Weun et al., 2004). Items were modified from these studies to reflectively measure failure severity in the current research. The Cronbach's alpha value for the failure severity scale was 0.852 and this scale included 3 items. Items measuring failure severity have seven-point Likert scales with anchors of 1-strongly disagree and 7=strongly agree.
- *Criticality*: This construct is reflectively measured using multiple items that were developed for this study. New Items were developed because of the scarcity of criticality measurements in the recovery literature. Prior recovery studies were typically designed as scenario-based experiments which manipulated criticality in high and low scenarios instead of asking respondents to assess their own criticality. In contrast, the current research employs a field study design in which respondents assess the importance of Internet service to their own enterprises. The Cronbach's alpha value for the criticality scale was 0.903 and this scale included 4 items. No items were removed to increase reliability of this scale. Items measuring criticality have seven-point Likert scales with anchors of 1-strongly disagree and 7=strongly agree.
- *Normative distributive recovery expectations*: Normative distributive recovery expectations was reflectively measured using items evaluating customers' expectations for compensation for a service failure (Yim et al., 2003). The Cronbach's alpha value for

the normative distributive recovery expectations scale was 0.836. This scale included 3 items and no items needed to be eliminated from this scale to increase scale reliability.

- *Normative procedural recovery expectations*: Represents a customer's ideal of how providers ought to respond to an Internet service failure. Multiple items adapted from prior service recovery studies measure respondents' normative recovery expectations of receiving different levels of recovery from a provider (Yim et al., 2003). This construct is modeled as a formative measure consisting of separate dimensions of apology, courtesy, and speed of recovery. Each of these dimensions was measured reflectively. These items were measured using seven-point Likert scale with anchors of 1-strongly disagree and 7=strongly agree. Cronbach's alpha values for scales representing the apology, courtesy, and speed dimensions of Normative Procedural Recovery Expectations were 0.743, 0.844, and 0.868. Each scale included 3 items. No items needed to be eliminated from these scales to increase scale reliability.
- *Distributive recovery performance*: Measures respondents' perceptions of their providers' recovery compensation performance. Distributive recovery performance was modeled reflectively. Cronbach's alpha value for the normative distributive recovery performance scale was 0.942. Its scale included 3 items. These items were measured using seven-point Likert scale with anchors of 1-strongly disagree and 7=strongly agree. No items needed to be eliminated from this scale to increase scale reliability.
- *Procedural recovery performance*: Measures respondents' perceptions of their providers' recovery processes. Procedural Recovery Performance was modeled as a formative construct consisting of separate dimensions of apology, courtesy, and speed of recovery. Each of these dimensions was measured reflectively. These items were measured using

seven-point Likert scale with anchors of 1-strongly disagree and 7=strongly agree.

Cronbach's alpha values for scales representing the apology, courtesy, and speed dimensions of normative procedural recovery expectations were 0.848, 0.879, and 0.948 respectively. Scales included 3, 3, and 5 items respectively. No items needed to be eliminated from these scales to increase scale reliability.

- *Distributive recovery disconfirmation*: Measured respondents' disconfirmation in terms of how provider performance compared to their distributive expectations. These items were adapted from prior recovery studies (Yim et al., 2003; Webster et al., 1998; Watson, 2012). Items were measured using seven-point Likert scale with anchors of 1-strongly disagree and 7=strongly agree. The initial Cronbach's alpha value for distributive recovery disconfirmation was 0.475. One item was dropped from this scale to increase the scale's reliability. The scale included in the final measurement model had 2 items and a Cronbach's value of 0.895.
- *Procedural recovery disconfirmation*: Measured respondents' disconfirmation in terms of how provider performance compared to their procedural expectations. Items were adapted from prior recovery studies (Yim et al., 2003; Webster et al., 1998; Watson, 2012). The initial Cronbach's alpha value for procedural recovery disconfirmation was 0.454. Two items were dropped from this scale to increase the scale's reliability. The scale included in the final measurement model had 3 items and a Cronbach's value of 0.905.
- *Recovery satisfaction*: Measured respondents' happiness with regard to their providers' recovery efforts. Items were adapted from prior recovery satisfaction studies (Webster et al., 1998; Weun et al., 2004). The initial Cronbach's alpha value for recovery satisfaction

was 0.837. One item was dropped from this scale to increase the scale's reliability. The scale included in the final measurement model had 3 items and a Cronbach's value of 0.948.

VII.III Reliability of Reflective Measures

Instrument validation should be undertaken before further analysis in order to demonstrate that the study is measuring the intended constructs (Straub, 1989). First, reflective measurements were tested for scale reliability and weak items removed to purify measures. Cronbach's Alpha is used to estimate the internal consistency reliability of first-order constructs with reflective indicators (MacKenzie et al., 2011). Items within each scale were also tested for convergent validity using Pearson's r coefficient to determine how well they correlated with other items designed to represent the same construct. Items with low correlations were trimmed from the scales to increase scale reliability and achieve a Cronbach's Alpha of 0.7 or higher. Table 3 summarizes the scale reliability of reflective measures. Measurement model diagrams are contained in Appendix 2 and a list of items that representing each construct is presented in Appendix 3.

Table 3: Scale Reliability of Reflective Measures

Construct	Definition	Items	Sample N	Mean	Variance	StDev	Reliability Cronbach's α	Scale Modified From
Recovery Satisfaction	The customer's response to the evaluation of the perceived discrepancy between prior expectations or some other norm of performance and the actual recovery performance of a service provider following a service failure.	3	367	14.73	19.394	4.404	0.948	(Webster et al., 1998; Weun et al., 2004)
Distributive Recovery Disconfirmation	The customer's evaluation of the perceived discrepancy between prior expectations and the actual recovery performance of a service provider following a service failure.	2	367	7.71	11.839	3.441	0.895	(Webster et al., 1998; McCollough et al., 2000)
Procedural Recovery Disconfirmation	The customer's evaluation of the perceived discrepancy between prior	3	366	13.17	19.272	4.390	0.905	(Webster et al., 1998); (McCollough et al., 2000)

	expectations and the actual recovery performance of a service provider following a service failure.							
Normative Distributive Recovery Expectations	A customer's perceptions of how a service provider ought to compensate the customer in order to produce a fair outcome from the recovery process following a service failure.	3	366	17.11	8.754	2.959	0.836	(Yim et al., 2003; Oliver et al., 1981)
Normative Procedural Recovery Expectations: Apology	A customer's perception that a service provider ought to apologize to the customer during the recovery process following a service failure.	3	367	18.37	5.278	2.297	0.743	(Yim et al., 2003)
Normative Procedural Recovery Expectations: Courtesy	A customer's perception that a service provider ought to respond courteously to the customer during the recovery	3	367	19.26	4.252	2.062	0.844	(Yim et al., 2003)

	process following a service failure.							
Normative Procedural Recovery Expectations: Speed	A customer's perception that a service provider ought to respond quickly to the customer during the recovery process following a service failure.	3	367	19.41	4.675	2.162	0.868	(Yim et al., 2003)
Distributive Recovery Performance	A customer's perception of how fairly a service provider has compensated the customer during the recovery process following a service failure.	3	367	12.16	22.310	4.723	0.942	(Yim et al., 2003; Mattila, 2001; Weun et al., 2004)
Procedural Recovery Performance: Apology	A customer's perception of the adequacy of the service provider's apology during the recovery process following a service failure	3	367	14.42	17.425	4.174	0.848	New
Procedural Recovery Performance: Courtesy	A customer's perception of the adequacy of the service provider's courtesy during the	3	367	15.41	14.307	3.783	0.879	New

	recovery process following a service failure							
Procedural Recovery Performance: Speed	A customer's perception of the adequacy of the service provider's response speed during the recovery process following a service failure	5	366	24.74	47.009	6.856	0.948	New
Failure Severity	The customer's perception of the intensity of a service problem	3	367	10.58	7.774	2.788	0.852	(Weun et al., 2004)
Criticality	The customer's perception of the importance of successful service delivery during a specific occasion.	4	367	24.64	13.991	3.740	0.903	New

VII.IV Composite Scale Scores and Calculated Measures

After scale purification, composite scale scores were calculated for each case by taking the mean of the items in each scale. Prior to calculating a composite score for each scale, responses for reverse-coded items were calibrated so that that scale values of 1 indicated low amounts of construct measured and 7 indicated a high amount of the construct. Calibration was done in this manner because all measurements in this survey were based on a seven-point scale

with anchors of 1-strongly disagree and 7=strongly agree. Composite scale scores were used to aggregate data for the formative measures tested in Partial Least Squares (PLS).

Difference Gaps were calculated between Normative Recovery Performance and Normative Recovery Expectations to determine the difference between respondents Expectations and Performance in each case. Calculated measures are summarized in Table 4.

Table 4: Summary of Calculated Measures

Calculated Measure	Calculation
Difference Gap: Distributive Recovery	Difference between Distributive Recovery Performance and Normative Distributive Recovery Expectations
Difference Gap: Procedural Recovery: Apology	Difference between Procedural Recovery Performance: Apology and Normative Procedural Recovery Expectations: Apology
Difference Gap: Procedural Recovery: Courtesy	Difference between Procedural Recovery Performance: Courtesy and Normative Procedural Recovery Expectations: Courtesy
Difference Gap: Procedural Recovery: Speed	Difference between Procedural Recovery Performance: Speed and Normative Procedural Recovery Expectations: Speed

VII.V Reliability of Formative Measures

Procedures to interpret the results of formatively measured constructs were undertaken. Specifically, evaluations of the dimensions of Normative Procedural Recovery Expectations and Procedural Recovery Difference Gap were conducted.

Partial Least Squares (PLS) is a methodology used to evaluate latent formative constructs represented by multiple indicators. PLS analyzes data in three stages: the assessment of reliability and validity of indicators; generation of alternative models of relationships between indicators and constructs; and the estimation of path coefficients and determination of model accuracy (Hulland, 1999). This order of steps ensures that indicators measuring constructs are

reliable and valid before proposing relationships between constructs (Hulland, 1999). SmartPLS software was used to analyze data in this study to estimate path models using the PLS methodology.

Cenfetelli et al. (2009) proposed several criteria to use in assessing the reliability and validity of indicators that represent a specific formative latent construct. First, indicator weights should be significant for all indicators in the indicator model. The recommended threshold for significance is a T-value > 1.96 for item weights. Second, indicator weights should all have the same sign and larger indicator weights are preferable. Indicator weights < 0.02 are described as weak; Indicator weights ≥ 0.02 are small; Indicator weights ≥ 0.15 are medium; and Indicator weights ≥ 0.35 are large. Third, correlations between indicators should be low when the indicators represent distinct dimensions of a formative construct. The recommended threshold for correlations is $r < 0.80$. Lastly, items that represent different dimensions of the same formative construct should not exhibit multicollinearity. The recommended threshold for multicollinearity measured by the maximum Variance inflation Factor (VIF) is $VIF < 10.0$ (Mason et al., 1991; Marquardt et al., 1970). The results from the application of these criteria to the current study's data follow.

VII.V.i Formative indicators of normative procedural recovery. First, the indicators of the normative procedural recovery expectations construct were tested. Table 4a summarizes the results of these tests. Indicator weights were significant for all indicators in the model and all indicators had a large effect on the construct. A notable finding from this analysis is that the courtesy indicator has the largest weight. In other words, customers' expectations of courtesy followed by speed had a stronger influence on overall normative procedural recovery expectations than customers' expectations of an apology.

Table 5: Formative Item Indicators of Normative Procedural Recovery Expectations

Construct	Item	Outer Loading Test Results	Outer Loading (absolute importance)	Outer Loading T-Stat	Outer Weight (relative importance)	Outer Weight T-Stat
Normative Procedural Expectations	Normative Procedural Expectations: Courtesy	Significant and Large Effect	0.9509	160.0945	0.3742	44.0558
	Normative Procedural Expectations: Speed	Significant and Large Effect	0.9273	100.338	0.3694	37.5679
	Normative Procedural Expectations: Apology	Significant and Large Effect	0.873	52.7729	0.3455	28.9525

Secondly, the indicators of the procedural recovery difference gap construct were tested. Table 4b summarizes the results of these tests. Indicator weights were significant for all indicators in the model and all indicators had a large effect on the construct. A notable finding from this analysis is that the speed indicator has the largest weight. In other words, the gap between speed performance and customers' expectations of speed had the largest impact on the overall procedural recovery difference gap followed by the courtesy gap, with the apology gap having the smallest impact.

Table 6: Formative Item Indicators of Procedural Recovery Difference Gap

Construct	Item	Outer Loading Test Results	Outer Loading (absolute importance)	Outer Loading T-Stat	Outer Weight (relative importance)	Outer Weight T-Stat
Procedural Difference Gap	Procedural Difference Gap: Speed	Significant and Large Effect	0.9563	203.836	0.3622	86.9263
	Procedural Difference Gap: Courtesy	Significant and Large Effect	0.9537	185.3566	0.3411	93.2814
	Procedural Difference Gap: Apology	Significant and Large Effect	0.9464	155.4566	0.3469	86.9316

VII.V.ii Bivariate correlations of normative procedural recovery. Thirdly, the strength of correlations between formative indicators that measure different dimensions of a formatively-defined construct were tested (Cenfetelli et al., 2009). Correlational analyses were conducted between formative indicators in the measurement model. The Pearson correlation coefficient, also known as Pearson's r , measures the strength and direction of the correlation between two indicators. Tables 5a and 5b summarize the results of bivariate correlation tests between formative indicators. $r < 0.8$ for correlations between all dimensions of normative procedural recovery expectations except between the dimensions of courtesy and speed. $r > 0.8$ for correlations between all dimensions of procedural recovery difference gap.

Because the dimensions of apology, courtesy, and speed are representative of distinct facets of the normative procedural recovery expectations, and procedural recovery difference gap constructs (Wirtz et al., 2004), they should not be removed or combined (Bollen et al., 1991). Dimensions should not be removed if removal would alter the meaning of a construct. Instead,

researchers should proceed with further evaluation of the structural model (Cenfetelli et al., 2009).

**Table 7: Bivariate Correlations for Formative Constructs:
Normative Procedural Recovery Expectations**

	Pearson's r Correlation Coefficient		
	1	2	3
1. Normative Procedural Recovery Expectations: Apology	1	0.742	0.676
2. Normative Procedural Recovery Expectations: Courtesy	0.742	1	0.866
3. Normative Procedural Recovery Expectations: Speed	0.676	0.866	1

**Table 8: Bivariate Correlations for Formative Constructs:
Procedural Recovery Difference Gap**

	Pearson's r Correlation Coefficient		
	1	2	3
1. Procedural Recovery Difference Gap: Apology	1	0.854	0.854
2. Procedural Recovery Difference Gap: Courtesy	0.854	1	0.876
3. Procedural Recovery Difference Gap: Speed	0.854	0.876	1

VII.V.iii Multicollinerity tests of normative procedural recovery. Lastly, tests of multicollinearity were conducted. Multicollinearity was not detected. All multicollinearity tests on formative constructs showed maximum Variance Inflation Factors, $VIF < 10.0$ which are within threshold levels (Mason et al., 1991; Marquardt et al., 1970). Tables 9 and 10 summarize the results of Variance Inflation Factor tests.

**Table 9: Variance Inflation Factor Analysis:
Normative Procedural Recovery Expectations**

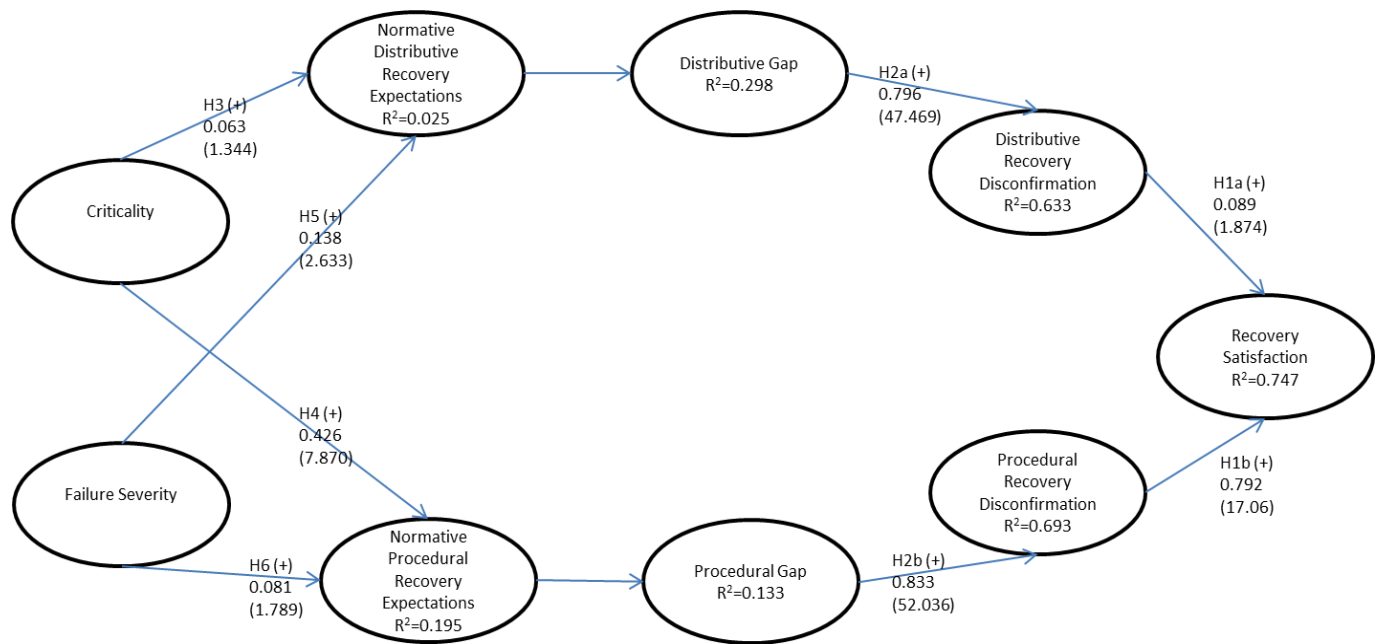
	VIF
Normative Procedural Recovery Expectations: Apology	2.249
Normative Procedural Recovery Expectations: Courtesy	4.887
Normative Procedural Recovery Expectations: Speed	4.047

Table 10: Variance Inflation Factor Analysis: Procedural Recovery Difference Gap

	VIF
Procedural Recovery Difference Gap: Apology	4.500
Procedural Recovery Difference Gap: Courtesy	5.218
Procedural Recovery Difference Gap: Speed	5.240

VII.VI Hypothesis Test Results

The final structural model from SmartPLS, its path coefficients, T-values representing the significance of path coefficients, and the R^2 or explained variance of each construct are depicted in Figure 2.

Figure 2: Results of PLS Final Measurement Model Assessment

Analyses were conducted of the constructs in the measurement model. The path coefficient measures the strength and direction of the relationship between two constructs. A hypothesis is supported when the path coefficient between two constructs are significant and in the anticipated direction. The R² or explained variance for each construct is contained in Table 11. Table 12 contains the significance and weight of the path coefficients for each hypothesis.

Table 11: Explained Variances of Dependent Variables (SmartPLS)

Dependent Variables	Explained Variance
Recovery Satisfaction	0.747
Distributive Recovery Disconfirmation	0.633
Procedural Recovery Disconfirmation	0.693
Distribution Recovery Gap	0.298
Procedural Recovery Gap	0.133
Normative Distributive Recovery Expectations	0.025
Normative Procedural Recovery Expectations	0.195

Table 12: Structural Equation Modeling Hypothesis Test Results (SmartPLS)

Hypothesis	Test Results	Significance & Strength of Effect	T-Statistic (Bootstrapping algorithm, 367 cases, 5000 sample)	Path Coefficient
H1a: Distributive Recovery Disconfirmation → Recovery Satisfaction	Not Supported	Not Significant & Small Effect	1.874	0.089
H1b: Procedural Recovery Disconfirmation → Recovery Satisfaction	Supported	Significant & Large Effect	17.06	0.792
H2a: Normative Distributive Recovery Difference Gap → Distributive Recovery Disconfirmation	Supported	Significant & Large Effect	47.469	0.796
H2b: Normative Procedural Recovery Difference Gap → Procedural Recovery Disconfirmation	Supported	Significant & Large Effect	52.036	0.833
H3: Criticality → Normative Distributive Recovery Expectations	Not Supported	Insignificant & Small Effect	1.344	0.063
H4: Criticality → Normative Procedural Recovery Expectations	Supported	Significant & Large Effect	7.870	0.426
H5: Failure Severity → Normative Distributive Recovery Expectations	Supported	Significant & Small Effect	2.633	0.138
H6: Failure Severity → Normative Procedural Recovery Expectations	Not Supported	Insignificant & Small Effect in Opposite Direction	1.789	0.081

Hypothesis 1a predicts that distributive recovery disconfirmation has a positive relationship with recovery satisfaction. Consistent with the expectancy disconfirmation literature, it would be logical to assume that customers who receive more positive distributive recovery disconfirmation will feel greater satisfaction with the recovery effort. The path coefficient between the distributive recovery disconfirmation and recovery satisfaction is 0.089. The T-

value is 1.874. This indicates that distributive recovery disconfirmation has an insignificant positive and small effect on recovery satisfaction. The analysis does not support this hypothesis.

Hypothesis 1b predicts that procedural recovery disconfirmation has a positive relationship with recovery satisfaction. Consistent with the expectancy disconfirmation literature, it would be logical to assume that customers who receive more positive procedural recovery disconfirmation will feel greater satisfaction with the recovery effort. The path coefficient between the procedural recovery disconfirmation and recovery satisfaction is 0.792. The T-value is 17.06. This indicates that procedural recovery disconfirmation has a significant positive and large effect on recovery satisfaction. The analysis supports this hypothesis.

Hypothesis 2a predicts that the distributive recovery difference gap has a positive relationship with distributive recovery disconfirmation. Consistent with the expectancy disconfirmation literature, it would be logical to assume that customers who receive higher recovery compensation relative to their normative expectations will experience greater positive disconfirmation than customers who receive less compensation. The path coefficient between the distributive recovery difference gap and distributive recovery disconfirmation is 0.796. The T-value is 47.469. This indicates that distributive recovery difference gap has a significant positive and large effect on distributive recovery disconfirmation. The analysis supports this hypothesis.

Hypothesis 2b predicts that the procedural recovery difference gap has a positive relationship with procedural recovery disconfirmation. Consistent with the expectancy disconfirmation literature, it would be logical to assume that customers who receive better recovery performance relative to their normative expectations will experience greater positive disconfirmation than customers who receive poor recovery performance. The path coefficient

between the procedural recovery difference gap and procedural recovery disconfirmation is 0.833. The T-value is 52.036. This indicates that the procedural recovery difference gap has a significant positive and large effect on procedural recovery disconfirmation. The analysis supports this hypothesis.

Hypothesis three predicts that criticality has a positive relationship with normative Distributive recovery expectations. Customers who perceive Internet service to be more important to their businesses may expect to receive more compensation after a service failure than customers who perceive Internet service to be less important to their businesses. The path coefficient between criticality and normative distributive recovery expectations is 0.063. The T-value is 1.344. This indicates that criticality has an insignificant positive and medium effect on normative Distributive recovery expectations. The analysis does not support this hypothesis.

The fourth hypothesis predicts that criticality has a positive relationship with normative procedural recovery expectations. Customers who perceive Internet service to be more important to their businesses may have higher expectations of faster, more courteous service, and perhaps an apology after a service failure than customers who perceive Internet service to be less important to their businesses. The path coefficient between criticality and normative procedural recovery expectations is 0.426. The T-value is 7.87. This indicates that criticality has a significant positive and large effect on normative procedural recovery expectations. The analysis supports this hypothesis.

The fifth hypothesis predicts that severity has a positive relationship with normative distributive recovery expectations. Customers who perceive an Internet service failure to be more severe may expect to receive more compensation after a service failure than customers who

perceive a service failure to be less severe. The path coefficient between criticality and normative distributive recovery expectations is 0.138 . The T-value is 2.633. This indicates that severity has a significant positive and small effect on normative distributive recovery expectations. The analysis supports this hypothesis.

The sixth hypothesis predicts that severity has a positive relationship with normative procedural recovery expectations. Customers who perceive an Internet service failure to be more severe may have higher expectations of faster, more courteous service and perhaps an apology after a service failure than customers who perceive a service failure to be less severe. The path coefficient between criticality and normative procedural recovery expectations is -0.081. The T-value is 1.789. This indicates that severity has an insignificant negative and medium effect on normative procedural recovery expectations. The analysis does not support this hypothesis.

VII.VII Moderator Effects

Moderation occurs when a variable known as a moderator influences the strength or direction of a relationship between an independent variable and a dependent variable. Hypothesis 7a predicts that severity moderates the relationship between criticality and normative distributive recovery expectations. Because the current study's results do not support hypothesis 3: that criticality has a positive relationship with normative distributive recovery expectations, hypothesis 7a cannot be tested.

However, hypothesis 7b, which predicts that severity moderates the relationship between criticality and normative procedural recovery expectations can be tested because the current study finds support for hypothesis 4: that criticality has a positive relationship with normative procedural recovery expectations.

PLS analysis does not support hypothesis 7b: that failure severity has a moderating effect on the relationship between criticality and normative procedural recovery expectations. The path coefficient of the moderating effect with failure severity as the moderator variable, criticality as the independent variable, and normative procedural recovery expectations as the dependent variable has a path coefficient of -0.330. The T-value is 1.915. This indicates that failure severity has an insignificant negative and medium moderating effect on normative procedural recovery expectations.

DISCUSSION

The purpose of this study was to understand how SME business managers and other purchasing decision makers established service failure response expectations, and to identify how criticality and service failure severity played a part in how these expectations are set. The current study contributes to the existing service recovery literature by expanding the discussion to include the recovery of Internet services in a small and medium enterprise environment. This is an important setting in which to study service recovery because Internet service is a technology that facilitates information sharing between firms' vendors, customers, and other organizations; and because the rate of adoption of Internet service in SME's continues to increase as firms see Internet service as an essential competitive tool.

The current study's conceptual model integrates equity theory with McCollough's (2000) disconfirmation model of recovery to explain that recovery satisfaction increases when providers exceeds customer expectations for a fair failure recovery response. Normative distributive expectations was measured reflectively; and normative procedural expectations was measured formatively through its dimensions of apology from the provider, courtesy during the recovery process, and speed of recovery. In addition, the conceptual model adds the constructs of criticality and failure severity and hypothesizes that criticality and severity would affect both normative distributive expectations and normative procedural expectations.

Consistent with the recovery disconfirmation literature, the current study's test of hypotheses (H1b, H2 and H2b) supported findings from prior studies' (McCollough et al. 2000; Yim et al., 2003) that procedural disconfirmation has a positive relationship with recovery satisfaction; and that the difference between a customer's procedural expectations and the customer's perceptions of the provider's performance had a positive effect on disconfirmation.

However, H1b was not supported which indicated that distributive disconfirmation does not influence recovery satisfaction in this enterprise setting. This is a unique finding because prior studies have typically found that the degree by which customer expectations for recovery compensation were met did affect recovery satisfaction in a consumer setting.

The current study's conceptual model adds to the body of expectancy disconfirmation research by extending McCollough's (2000) disconfirmation model of recovery to include the constructs of criticality and failure severity as antecedents of normative distributive recovery expectations, and normative procedural recovery expectations. Hypotheses (H4 and H5) were supported whereas hypotheses (H3 and H6) were not. These findings suggest that in this setting, criticality has a large positive effect on normative procedural expectations, but does not affect normative distributive expectations; and that failure severity has a small positive effect on normative distributive expectations but does not affect normative procedural expectations. Because the extant literature does not contain findings from previous studies on the influence of criticality and failure severity on normative expectations in an enterprise information technology services environment, opportunities for future research exist to understand if customers in other information technology services settings would behave similarly.

Hypothesis 7a could not be tested; and the current study's tests do not find support for hypothesis 7b: the moderation of the relationship between criticality and normative procedural recovery expectations by failure severity. This would indicate that in this setting, service criticality should continue to affect customers' procedural recovery expectations regardless of the severity of the failure.

CONCLUSION

IX.I Contributions to Theory

A theoretical contribution of this study is the extension of expectancy disconfirmation theory to include the roles of criticality and failure severity on the normative recovery expectations of enterprise customers in an information systems services setting (Yim et al., 2003). Prior research on satisfaction has focused largely on business-to-consumer relationships because many customer satisfaction conceptual models were derived from psychological studies on individuals (Lam, Shankar, & Erramilli, 2004). Few recovery satisfaction studies have been conducted on enterprise credence services.

The current study addressed the first research question by showing that business managers appear to form normative distributive and procedural expectations for recovery from information services failures. This finding would be consistent with prior research showing that consumers form normative recovery expectations for experience services (Yim et al. 2003). The second research question is also addressed by exploring criticality and failure as factors that service providers should potentially consider when determining the level of recovery response and compensation given to Small and Medium Enterprise (SME) customers after a service failure.

The first key finding is that in contrast to consumer studies that found a relationship between failure severity and both normative distributive expectations and normative procedural expectations (Oliver 1981; Spreng 1996; Yim 2003) ; Failure severity only appears to have a small effect on normative distributive expectations in a SME business services setting, and no effect on normative procedural expectations. Additionally, in contrast to prior research which found that consumers expect higher levels of recovery compensation during high criticality

situations (Ostrom et al., 1995; Webster et al., 1998); criticality was found to have a large and significant relationship with normative procedural expectations, but none with normative distributive expectations.

The current study also contributes to recovery satisfaction literature by exploring how SME expectation disconfirmation impacts recovery satisfaction. While it is expected that the recovery disconfirmation model can be applied in both consumer and enterprise settings, it is believed that some requirements considered by enterprise customers may be different from those considered by consumers. Most notably, the current study finds that, unlike consumer research, in a SME business services setting, only procedural recovery disconfirmation has a strong relationship with recovery satisfaction. The current study does not support a relationship between distributive recovery disconfirmation and recovery satisfaction. This may imply that in an enterprise setting, business managers' satisfaction with service failure recovery efforts are based on how providers perform in the dimensions of courtesy, speed, and apology and not so much on how much compensation the provider is offering for the damages or inconvenience caused by a service failure. It is also interesting to note that meeting or exceeding customers' normative expectations for courtesy has the strongest impact on disconfirmation followed by meeting or exceeding customers' normative requirements for an apology and courtesy during recovery interactions between the provider and the customer.

The results of this study provides an opportunity for future research into why enterprise customers of credence services might behave differently from consumers of experience services in a service recovery setting. While it is beyond the scope of the current study to answer these questions, future research could explore whether customer type (i.e. enterprise versus consumer) or service type (i.e. credence versus experience) explains some of these differences. Perhaps any

difference attributable to customer type and service type could be explained by the amount of the expected compensation relative to the potential loss from the service failure. Enterprise customers typically purchase services to assist in business operations. A service failure could then potentially impact business operations. In this case, the compensation that the business manager may receive from the provider could be small relative to the business loss that might result from a slow Internet service recovery, or relative to the frustration that the manager would experience from a rude and non-apologetic provider. The service type may also explain the current study's findings.

IX.II Contributions to Methodology

The current study contributes to methodology by improving on the realism of prior service failure studies through using retrospective introspection instead of scenario-based experiments. Retrospective introspection provides more realistic results than scenario-based experiments because subjects recall their attitudes, beliefs and experiences during real events instead of projecting their responses to hypothetical future situations in a scenario-based experiment.

Due to the difficulty in observing service failures contemporaneously, or to access a representative sample of respondents who have experienced similar types of service failures in the past, most criticality and service failure studies have employed scenario-based experiments instead of conducting field studies (Goodwin et al. 1992; Smith et al., 2002; Watson, 2012). Researchers use scenario methods to explore complex concepts that are not easily operationalized in real-world settings (Alford et al., 1996). Scenario manipulation involves role play, where subjects are presented with a hypothetical situation, asked to imagine themselves experiencing that situation, and then presented with questions regarding their perceptions. A

scenario-based study is described as "an as-if experiment in which the subject is asked to behave as if he [or she] were a particular person in a particular situation" (Greenberg, 1993).

The recovery literature acknowledges that scenario-manipulation may limit the realism of an experiment. A lack of realism can lead to erroneous conclusions if subjects in a laboratory setting respond differently during an experiment than if they were really in a service setting (Folkes, 1984). The realism of an experiment may be reduced when research subjects have difficulty imagining themselves in the role of the customer in the test scenario.

Scenario-based studies have also been criticized for providing information about what people think they would do and not what they would do (Freedman, 1969). It would be logical to assume that attempts to improve the realism of these studies would improve their predictive ability to determine how respondents would really act. Researchers attempt to increase the realism of these studies by selecting common services likely to be familiar to a wide range of research participants, and by providing participants with detailed descriptions of the service being studied. Researchers also ask participants to rate the realism of the scenarios. However, one shortcoming of many studies is that they involve respondents who may have had limited experience and familiarity with the services used in the scenarios.

Some researchers have taken additional steps to increase the realism of their scenario-based experiments. McCollough (2000) increased the realism of his experiments by recruiting airline passengers as subjects in an expectancy disconfirmation experiment with airline travel as the setting. This technique increased the likelihood that subjects would be familiar with the context of the service being studied and reduced the possibility that subjects would respond differently than if they were actually in the service setting. However, even though McCollough

(2000) used actual airline passengers as subjects, the passengers' expectations were still being manipulated.

IX.III Contributions to Practice

This study addresses service failure, criticality, and recovery satisfaction in the context of enterprise customers and more specifically, SME's, the fastest growing segment of businesses in the United States. While studies measuring normative recovery expectations of firms are scarce, recovery studies focused on SME's are even rarer. SME's are unique in that they share characteristics of both individual consumers and large enterprises. Regardless, there are distinctive differences between SME's, consumers and large enterprises.

The SME internet hosting service is a relatively new market and thus there are fewer examples of satisfaction studies in extant literature. Most of the growth in this market has occurred in the previous five years. Because of the importance of these services to enterprise customers and the consequences of business interruption from service failures, research on this service can be helpful to inform future studies of other critical information technology services.

This additional insight from the current study will help Internet providers to better understand the factors that impact initial satisfaction and recovery satisfaction after a service failure. More importantly, providers will gain the ability to design recovery procedures that will improve customer satisfaction. For example, Internet Service Providers do not typically ask SME customers to rate the criticality of Internet service to their businesses. This would be a significant improvement to their business processes to do so because the current study finds that criticality could explain 19.5% of a customer's normative procedural recovery expectations. Secondly, most Internet Service Providers write service contracts with an emphasis on the size of the penalty that the Provider would pay the customer in the event of high service failure levels.

Whereas the current study shows that compensation offered to customers after a service failure does not have a significant impact on recovery satisfaction. Lastly, Internet Service Providers typically prioritize service visits to customers based on the severity or duration of the Internet outage when in fact; the current study shows that service prioritization could potentially be better based on the criticality of service to the customer. An improved understanding in this area will provide help Internet providers to prioritize effort and investments and will improve customer service.

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APPENDICES

Appendix A: Rater Review Details

Constructs & Item Text	“Essential” Ratings (Out of 7 Raters)	Decision	Survey Instrument Question #
Recovery Satisfaction (Reflective)			
<ul style="list-style-type: none"> I am happy with my Internet Provider’s response. 	5	Include	Satisfaction_Q38
<ul style="list-style-type: none"> I am dissatisfied with my Internet Provider’s responses. (r) 	7	Include	Satisfaction_Q35
<ul style="list-style-type: none"> I am satisfied with my Internet Provider’s handling of my problems. 	7	Include	Satisfaction_Q36
<ul style="list-style-type: none"> My Internet Provider’s response left me with a pleasant feeling. 	1	Exclude	
<ul style="list-style-type: none"> I am disgruntled with the Internet Provider’s response (r) 	6	Exclude	
<ul style="list-style-type: none"> This service experience met my needs. 	3	Exclude	
<ul style="list-style-type: none"> I felt the service response I received was good. 	2	Exclude	
<ul style="list-style-type: none"> I was not happy with the way the problem was handled. 	5	Exclude	
<ul style="list-style-type: none"> I am satisfied with the way my problems have been resolved. 	7	Include	Satisfaction_Q37
Distributive Recovery Disconfirmation (Reflective)			
<ul style="list-style-type: none"> The compensation that my Internet Provider gave me exceeded my expectations when the problems started. 	7	Include	Disconfirm_distrib_Q39
<ul style="list-style-type: none"> My Internet Provider reimbursed me for everything that it should have 	7	Include	Disconfirm_distrib_Q40
<ul style="list-style-type: none"> I expected my Internet Provider to pay me more for my issues. (r) 	7	Include	Disconfirm_distrib_Q42

<ul style="list-style-type: none"> • My Internet Provider's payment for my problems was better than I hoped for. 	3	Exclude	
<ul style="list-style-type: none"> • The compensation for this problem should have been better based on what I thought when the problem started. (r) 	3	Exclude	
Procedural Recovery Disconfirmation (Reflective)			
<ul style="list-style-type: none"> • My experience with the Internet Provider to fix this mistake was better than I hoped for. 	7	Include	Disconfirm_Procedural_Q43
<ul style="list-style-type: none"> • My interaction with the Internet Provider to correct this issue was better than I thought it might have been. 	7	Include	Disconfirm_Procedural_Q44
<ul style="list-style-type: none"> • The process of solving this problem should have been better based on what I thought when the problem started. (r) 	7	Include	Disconfirm_Procedural_Q45
<ul style="list-style-type: none"> • The steps my Provider took to fix its mistakes were fairer than they needed to be. 	7	Include	Disconfirm_Procedural_Q46
<ul style="list-style-type: none"> • My Internet Provider should have made the process of solving this problem smoother. (r) 	7	Include	Disconfirm_Procedural_Q56
Normative Distributive Recovery Expectations (Reflective)			
<ul style="list-style-type: none"> • Internet providers should reimburse customers for losses. 	7	Include	Expect_Distrib_Q13
<ul style="list-style-type: none"> • Internet Providers should give customers a refund when mistakes happen. 	7	Include	Expect_Distrib_Q14
<ul style="list-style-type: none"> • Internet Providers should offer compensation when problems occur. 	5	Include	Expect_Distrib_Q47
<ul style="list-style-type: none"> • Internet Providers should pay customers for service issues. 	4	Exclude	
<ul style="list-style-type: none"> • Internet Providers should offer compensation when problems occur. 	5	Exclude	
Normative Procedural Recovery Expectations (Formative)			

Normative Procedural Recovery Expectations: Apology			
<ul style="list-style-type: none"> Internet Providers should offer an apology when problems occur. 	7	Include	Expect_Apology_Q15
<ul style="list-style-type: none"> Internet Providers should acknowledge issues and their role in creating these situations. 	7	Include	Expect_Apology_Q16
<ul style="list-style-type: none"> Internet Providers should express regrets for their mistakes. 	7	Include	Expect_Apology_Q17
<ul style="list-style-type: none"> Internet Providers should take responsibility for problems that they cause. 	4	Exclude	
Normative Procedural Recovery Expectations: Courtesy			
<ul style="list-style-type: none"> Internet Providers should be courteous when responding to complaints. 	7	Include	Expect_Courtesy_Q18
<ul style="list-style-type: none"> Internet Providers should treat complaints with respect. 	7	Include	Expect_Courtesy_Q19
<ul style="list-style-type: none"> Internet Providers should be concerned about how customers feel when mistakes happen. 	7	Include	Expect_Courtesy_Q20
<ul style="list-style-type: none"> Internet Providers should be polite when customers report problems 	6	Exclude	
<ul style="list-style-type: none"> Internet Providers should be considerate of customers' feelings when issues occur. 	5	Exclude	
Normative Procedural Recovery Expectations: Speed			
<ul style="list-style-type: none"> Internet Providers should respond to client problems quickly. 	5	Include	Expect_Speed_Q21
<ul style="list-style-type: none"> Internet Providers should treat customer problems as high priorities. 	7	Include	Expect_Speed_Q22
<ul style="list-style-type: none"> Internet Providers should fix client issues as soon as possible. 	7	Include	Expect_Speed_Q23
<ul style="list-style-type: none"> Internet Providers should respond to customer issues with service. 	1	Exclude	
Distributive Recovery Performance (Reflective)			

<ul style="list-style-type: none"> The compensation that I received for my loss was appropriate. 	7	Include	Perform_Distrib_Q24
<ul style="list-style-type: none"> The reimbursement that I received was fair. 	7	Include	Perform_Distrib_Q25
<ul style="list-style-type: none"> I felt that the Internet Provider offered me adequate compensation for my problems. 	6	Include	Perform_Distrib_Q48
<ul style="list-style-type: none"> In resolving my problems, the Internet Provider gave me what I deserved. 	5	Exclude	
<ul style="list-style-type: none"> My Internet Provider should have compensated me more. (r) 	2	Exclude	
<ul style="list-style-type: none"> I did not get the compensation that I deserved. (r) 	5	Exclude	
<ul style="list-style-type: none"> The outcome from y complaint was not right. (r) 	2	Exclude	
<ul style="list-style-type: none"> I do not feel that I got the payment that I deserved. (r) 	4	Exclude	
Procedural Recovery Performance (Formative)			
Procedural Recovery Performance: Apology			
<ul style="list-style-type: none"> The apology I received was adequate. 	7	Include	Perform_Apology_Q26
<ul style="list-style-type: none"> My Internet Provider gave me an acceptable explanation for the problem. 	7	Include	Perform_Apology_Q27
<ul style="list-style-type: none"> My Internet Provider acknowledged its role in creating the situation. 	4	Exclude	Perform_Apology_Q49
Procedural Recovery Performance: Courtesy			
<ul style="list-style-type: none"> With regard to courtesy, my Internet Provider gets high marks in responding to my complaint. 	7	Include	Perform_Courtesy_Q28
<ul style="list-style-type: none"> My complaint was treated with respect by my Internet Provider 	7	Include	Perform_Courtesy_Q29
<ul style="list-style-type: none"> My Internet Provider was considerate of my feelings with respect to my case. 	7	Include	Perform_Courtesy_Q30
<ul style="list-style-type: none"> My Internet Provider was polite when responding to my 	5	Exclude	

complaint.			
<ul style="list-style-type: none"> • My Internet Provider appeared to be concerned about how I felt. 	3	Exclude	
Procedural Recovery Performance: Speed			
<ul style="list-style-type: none"> • My Internet Provider fixed the problems quickly. 	7	Include	Perform_Speed_Q31
<ul style="list-style-type: none"> • My Internet Provider seemed to treat my problems as a high priority. 	7	Include	Perform_Speed_Q32
<ul style="list-style-type: none"> • The problems were corrected by my Internet Provider as soon as possible. 	7	Include	Perform_Speed_Q33
<ul style="list-style-type: none"> • I did not have to wait long to have these problems fixed. 	7	Include	Perform_Speed_Q34
<ul style="list-style-type: none"> • My Internet Provider immediately took care of my complaint. 	7	Include	Perform_Speed_Q57
Failure Severity (Reflective)			
<ul style="list-style-type: none"> • These problems severely hurt my business. 	7	Include	Severity_Q6
<ul style="list-style-type: none"> • These problems harmed my business. 	7	Include	Severity_Q7
<ul style="list-style-type: none"> • These problems were a major loss to my business. 	7	Include	Severity_Q12
<ul style="list-style-type: none"> • My losses as a result of these problems were severe. 	3	Exclude	
<ul style="list-style-type: none"> • My losses as a result of these problems were serious. 	3	Exclude	
Criticality (Reflective)			
<ul style="list-style-type: none"> • Internet service is important to my business. 	7	Include	Criticality_Q1
<ul style="list-style-type: none"> • Access to the Internet is vital to my business's success. 	7	Include	Criticality_Q2
<ul style="list-style-type: none"> • Being able to get onto the Internet is critical to my business. 	7	Include	Criticality_Q3
<ul style="list-style-type: none"> • My business needs to use the Internet in order to run efficiently. 	7	Include	Criticality_Q4
<ul style="list-style-type: none"> • Internet service is an essential requirement of my business. 	4	Exclude	
<ul style="list-style-type: none"> • My business would not run well without Internet access. 	2	Exclude	
<ul style="list-style-type: none"> • Internet service is one of the 	6	Exclude	

things that are necessary to run my business.			
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Appendix B: Measurement Models

Figure 3: Measurement Model: Recovery Satisfaction

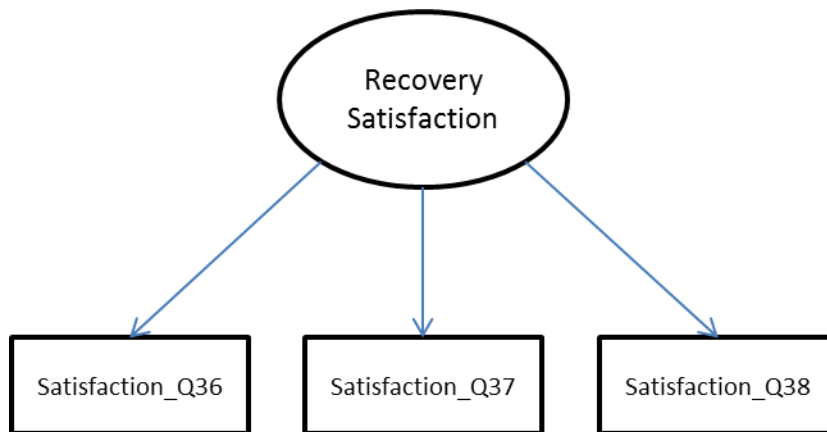


Figure 4: Measurement Model: Distributive Recovery Disconfirmation

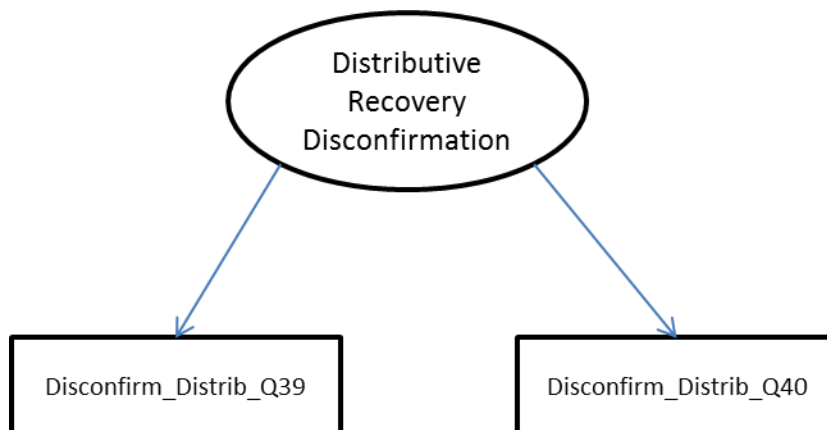


Figure 5: Measurement Model: Procedural Recovery Disconfirmation

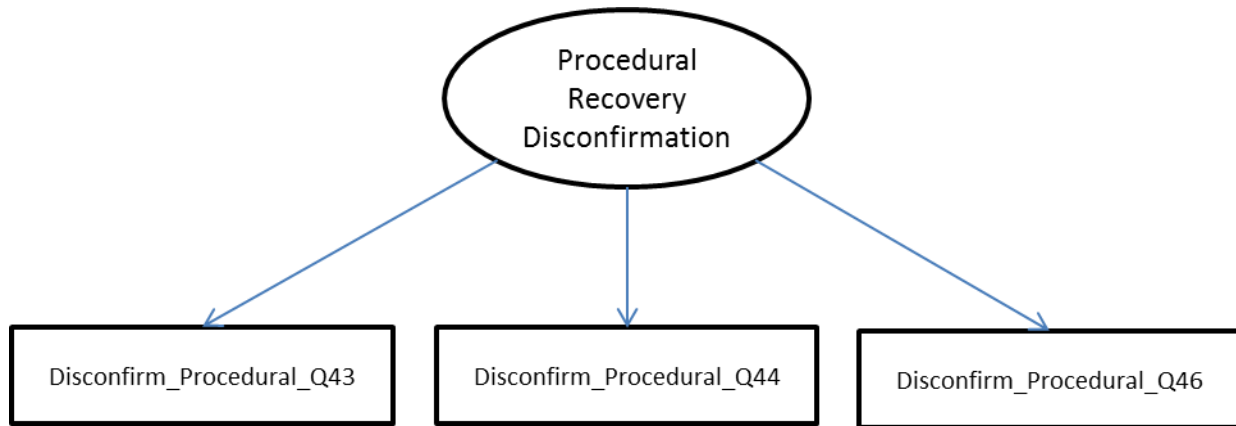


Figure 6: Measurement Model: Normative Distributive Recovery Expectations

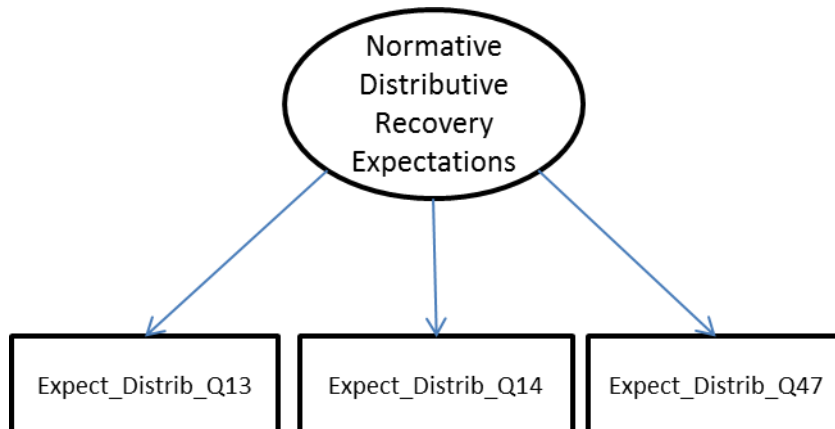


Figure 7: Measurement Model: Normative Procedural Recovery Expectations (Formative)

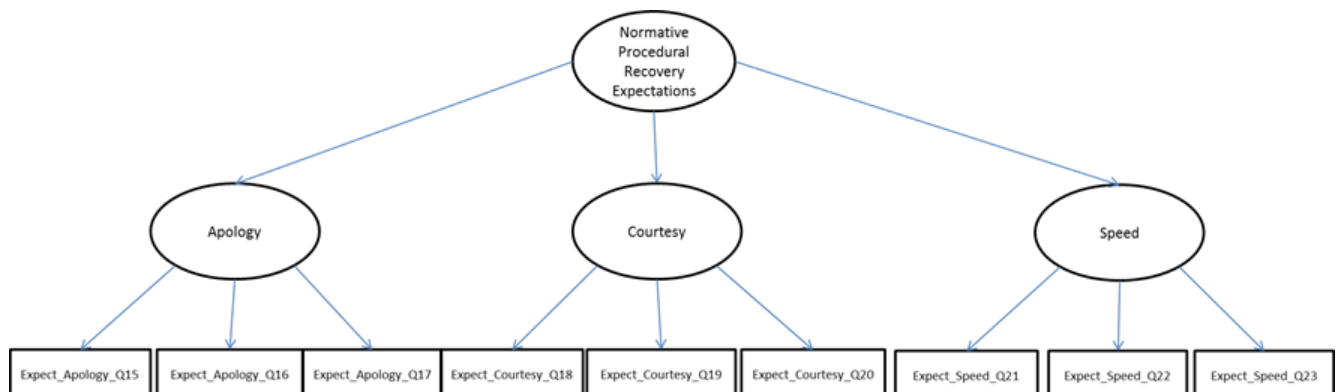


Figure 8: Measurement Model: Distributive Recovery Performance

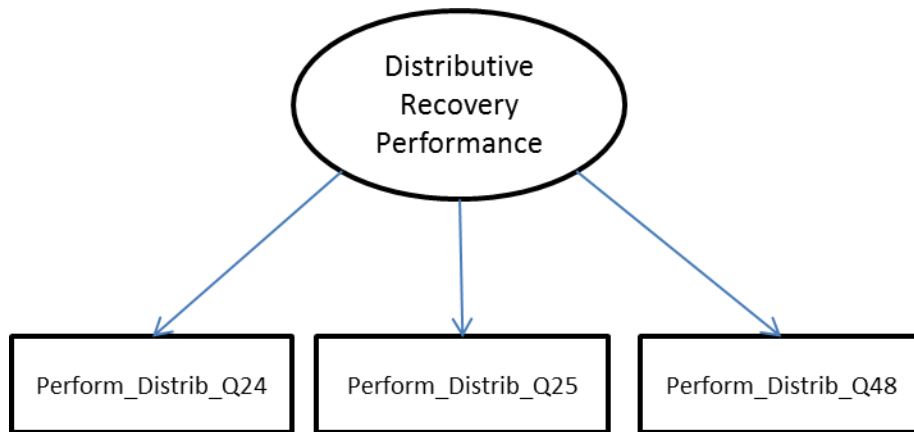


Figure 9: Measurement Model: Procedural Recovery Performance (Formative)

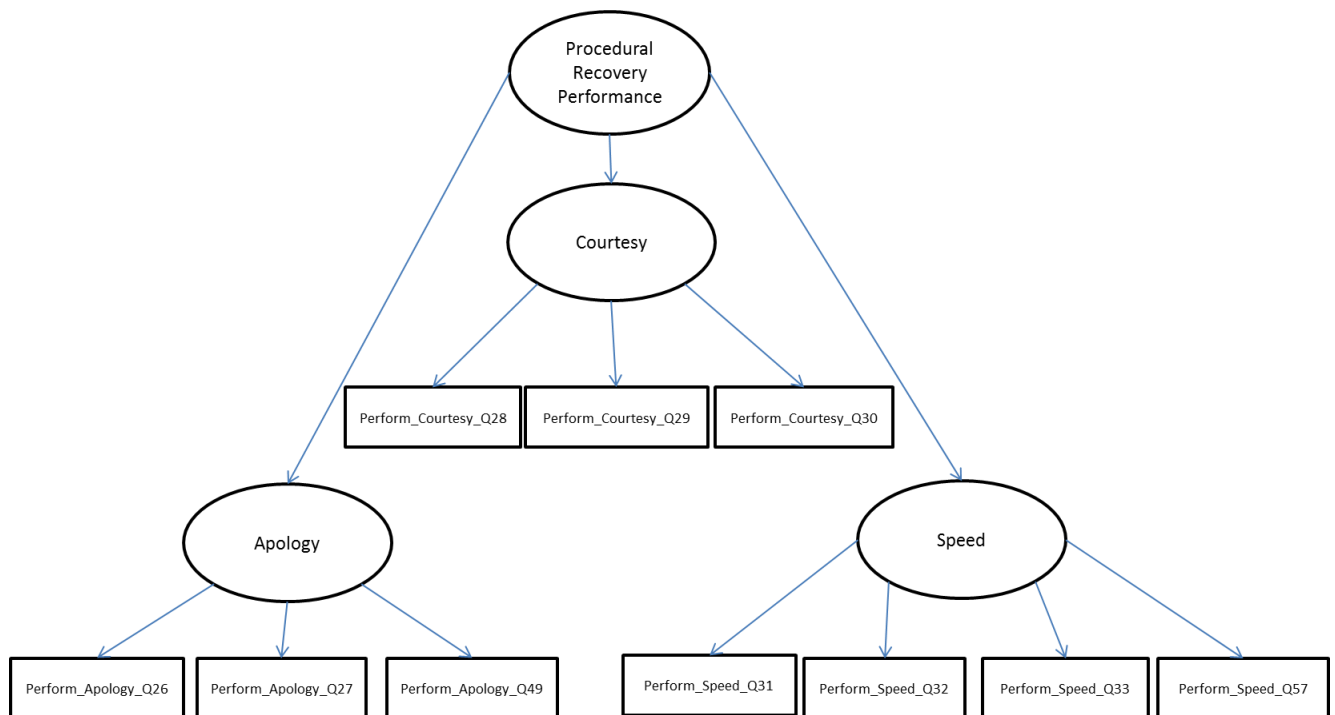
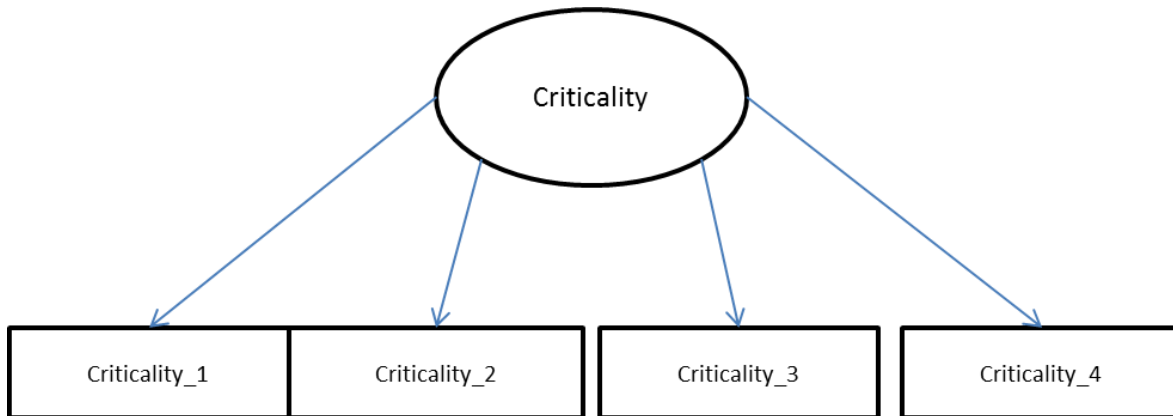
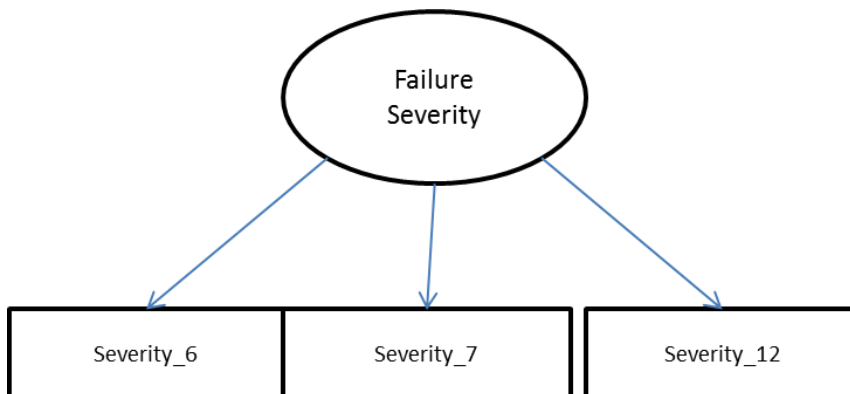


Figure 10: Measurement Model: Criticality**Figure 11: Measurement Model: Failure Severity**

Appendix C: Reflective Measures

Factor	Items	Sample	Mean	StDev	α
Recovery Satisfaction	Satisfaction_Q36	367	4.85	1.568	.948
	Satisfaction_Q37	367	4.96	1.521	
	Satisfaction_Q38	367	4.91	1.539	
Distributive Recovery Disconfirmation	Disconfirm_Distrib_Q39	367	3.84	1.812	.895
	Disconfirm_Distrib_Q40	367	3.88	1.804	
Procedural Recovery Disconfirmation	Disconfirm_Procedural_Q43	366	4.40	1.582	.905
	Disconfirm_Procedural_Q44	366	4.59	1.578	
	Disconfirm_Procedural_Q46	366	4.19	1.630	
Normative Distributive Recovery Expectations	Expect_Distrib_Q13	366	5.52	1.233	.836
	Expect_Distrib_Q14	366	5.83	1.063	
	Expect_Distrib_Q47	366	5.76	1.106	
Normative Procedural Expectations: Apology	Expect_Apology_Q15	367	6.10	.986	.743
	Expect_Apology_Q16	367	6.23	.875	
	Expect_Apology_Q17	367	6.05	.963	
Normative Procedural Expectations: Courtesy	Expect_Courtesy_Q18	367	6.49	.761	.844
	Expect_Courtesy_Q19	367	6.49	.742	
	Expect_Courtesy_Q20	367	6.28	.854	
Normative Procedural Expectations: Speed	Expect_Speed_Q21	367	6.51	.803	.868
	Expect_Speed_Q22	367	6.41	.808	
	Expect_Speed_Q23	367	6.49	.819	
Distributive Recovery Performance	Perform_Distrib_Q24	367	4.06	1.688	.942
	Perform_Distrib_Q25	367	4.02	1.660	
	Perform_Distrib_Q48	367	4.08	1.641	
Procedural Recovery Performance: Apology	Perform_Apology_Q26	367	4.86	1.550	.848
	Perform_Apology_Q27	367	4.88	1.600	
	Perform_Apology_Q49	367	4.68	1.616	
Procedural Recovery Performance: Courtesy	Perform_Courtesy_Q28	367	5.04	1.465	.879
	Perform_Courtesy_Q29	367	5.24	1.329	
	Perform_Courtesy_Q30	367	5.12	1.418	
Procedural Recovery Performance: Speed	Perform_Speed_Q31	366	4.99	1.496	.948
	Perform_Speed_Q32	366	4.94	1.468	
	Perform_Speed_Q33	366	5.11	1.433	

Speed	Perform_Speed_Q34	366	4.77	1.562	
	Perform_Speed_Q57	366	4.93	1.569	
Failure Severity	Severity_Q6	367	3.56	1.085	.852
	Severity_Q7	367	3.60	1.006	
	Severity_Q12	367	3.43	1.081	
Criticality	Criticality_Q1	367	6.29	.946	.903
	Criticality_Q2	367	6.11	1.098	
	Criticality_Q3	367	6.13	1.112	
	Criticality_Q4	367	6.11	1.083	

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