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CAUSAL ATTRIBUTION AND EXPECTED RECOVERY BY SERVICE FAILURE TYPES

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ABSTRACT

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Scholars and practitioners' attentions to causal attribution and recovery strategies in self-service technologies (SSTs) failure encounters have not followed the speed of the increasing use of SSTs. Most challenges in SST service encounters encompass difficulty with building relationships with customers and lack of the recovery strategies. This dissertation investigates customers' perceived causal attribution, expected recoveries, and evaluations of firms following three different types of service failures. The three different types of service failures include failure by non-Internet SST, failure by employees, and failure by a company's procedures/policies.

This study manipulates scenarios through a 3 x 2 experimental factorial design with three service failure types and two levels of failure severity. The research design consists of two stages, pretest, and main study to examine the proposed hypotheses. The study's paper-based questionnaire surveys 300 staff members of randomly selected departments at a northeastern university. A total of 182 usable surveys represent a response rate of 62 percent.

The result of the data analysis shows that customers encountering a procedure failure considered the service failure to be a repeat problem and assigned the most overall causal attribution to a company. In the results of the effects of failure severity on overall causal attribution, consumers exposed to severer service failures were more likely to assign overall causal attribution to firms than were customers who encountered mild service failures. In terms of recovery strategies, customers expect an apology for service

recovery more than any other recovery actions such as refund or intent to complain when the level of causal attributions is high. The results also show positive relationships between causal attributions and overall evaluations such as dissatisfaction, complaint intent, and negative word-of-mouth (WOM). A negative relationship exists between causal attributions and return intent.

The findings of this research suggest that, in customers' perceptions of a company's management, procedures are the equivalent of the company. Thus, testing the procedure/policy with customers is important to determine whether or not customers like the procedure/policy or to determine if the procedure/policy is acceptable before managers use it. Once established and the procedure/policy becomes a problem, then the perception will always be the existence of a problem. Furthermore, customers do not perceive causal attributions between non-Internet SSTs failure and employee failure to be different. However, with regard to overall causal attribution (overall blame) to a company, an interesting finding is that customers who experienced a non-Internet SST failure placed a higher degree of overall causal attribution (blame and responsibility) on the firm than did those who experienced an employee failure. Consequently, when customers place overall responsibility on the company rather than attributing on each failure type, they are more likely to blame the firm in a service failure by non-Internet SST than in that by an employee.

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CHAPTER 1

INTRODUCTION

With the proliferation of technology-facilitated transactions and services, millions of customers are increasingly exposed to human-to-machine interfaces instead of interpersonal encounters for fulfillment of consumption needs. The emergence of self-service technologies (SSTs) in the past two decades has introduced interesting changes and challenges in services marketing. Self-service technologies (SSTs) are technological interfaces that enable customers to produce a service, independent of direct service employee involvement (Meuter, Ostrom, Roundtree, & Bitner, 2000). Examples of SSTs are automated teller machines (ATMs), automated hotel checkout, and services via telephone and Internet. Many airline companies replaced employees with self-service devices, such as kiosks for the self check-in. SSTs are also one of the significant driving forces of change in the hospitality industry.

Today, airports display a growing presence of self-service technology. According to the International Air Transport Association's (IATA) "2009 Corporate Air Travel Survey," more than 50 percent of passengers worldwide want more self-service options rather than interpersonal services (Sharma, 2009). In addition, a growing number of chain hotels are using the technology to maintain service excellence during peaks in guest traffic. Furthermore, major chains including McDonald's, Burger King, and Subway have implemented machines that allow consumers to order and pay for their meals without any human contact. Convenience stores such as WaWa (www.wawa.com) and Sheetz (www.sheetz.com) have been using computerized ordering kiosks for years in their sandwich depots. Customers can select their sandwich ingredients, from the amount of

meat to the number and type of condiments. The standalone kiosk prints a receipt that is given first to the meal preparers and then to the cashier for payment (Koroneos, 2008).

Fast food restaurants have implemented touch screen menu (e-menu) options for ordering food, and restaurants, hotels, and grocery shops have installed SSTs for self-service check-out. Obviously, the trend to use of SST's for service encounters is growing: Northwest Airlines estimated that only 20 percent of customers used SSTs when flying in 2001, but over 70 percent used SSTs by 2004. In 2003 alone, estimates suggest that 10.8 billion transactions occurred at ATMs; total Internet spending reached $100 billion (Mullaney, Green, Arndt, Hof, & Himelstein, 2003), and total non-Internet SST spending in the USA rose to $120 billion (Holman, Sheldon, & Buzek, 2004). U.S. consumers scanned $137 billion in merchandise at self-checkout lanes in 2006, a 24 percent jump over the previous year (Koroneos, 2008). The estimate of transactions by North Americans using self-service kiosks or systems of all types might exceed $775 billion in 2009 and will exceed $1.6 trillion annually by 2013 (Nation's Restaurant News, 2009).

Problem Statement

Service Failures in SSTs

With the proliferation of technology-facilitated transactions and services, millions of customers encounter increasing exposure to human-to-machine interfaces instead of interpersonal contact when fulfilling consumption needs (Zhu, 2002). Similar to other service encounters, SSTs' interfaces are subject to service failure resulting from a technology malfunction or customer mistakes. However, scholars and practitioners' attentions to recovery strategies in SST failure encounters have not coincided with the

increasingly pervasive use of SSTs. Most challenges in SSTs service encounters arise from difficulty in building relationships with customers and a lack of the recovery strategies. According to Meuter et al. (2000), the customers' dissatisfying experiences with SSTs stem from: technology failure, process failure, poor design, and customer-driven failure.

Previous service research studied failure and recovery strategies for interpersonal service encounters while current studies of SSTs focus more on adoption and use of SSTs. Few studies examined the SSTs' domain service failure mechanism, especially non-Internet SSTs, with the intent to explore characteristics of SST failures and to address causal attributions, expectations for recoveries, and overall evaluations of firms. All of these closely link to customer satisfaction, loyalty, and a firm's bottom line.

Internet SSTs versus Non-Internet SSTs

Harris, Mohr, and Bernhardt (2006) examined the difference in consumers' causal attributions for service failures and the effects on expectations for recovery in both online and offline settings. Nevertheless, recent Forbes (2008) study focused on non-Internet-based self-service technologies (SSTs). He emphasized that since non-Internet SSTs make up 57% of all SST use by consumers (Holman et al., 2004), marketers must understand the differences between Internet SSTs and non-Internet SSTs. According to Holman et al., the most frequent reason for non-Internet SST failure was customer error (37 percent for non-Internet SST versus 3 percent for Internet SSTs). The most frequent Internet SST failure was packaging errors from the service delivery system (43 percent for Internet SSTs). These findings in the area of failure magnify the significant

differences between Internet SST and the non-Internet SST retail settings. Management needs to understand clearly that a problem that might occur in a store will likely be drastically different than a problem that might occur in an online-store or a self-service station (Forbes, 2008).

Customers' Perceptions of Different Types of Service Failures

When a technology failure occurs, a limited number of options exist for companies to recover from the failures of non-Internet SSTs. Most service organizations currently lack the capacity to conduct real-time recovery from failures from remote locations (Zhu, 2002). As a result, companies often experience customer defection and subsequent profit loss following SSTs' failures. Apparently, customers' perceptions of service quality and commitment to service impact expectations for recovery (Kelly & Davis, 1994). When faced with unexpected problems in SST settings, customers' causal attributions to the company and expectations for recovery eventually impact loyalty to the company. This situation might be different from similar events in interpersonal service failure encounters because a customer in a SST scenario is, in part, an employee, from the perspective of their participation with the company when using SSTs. For example, the following fictitious scenarios are illustrations:

"June is a customer at a certain fast-casual food restaurant. She ordered a hamburger from a server but, by mistake, the server brought the wrong food."

Alternatively, "June ordered a hamburger from the e-menu by using a kiosk's touch-screen. A malfunction of the kiosk screen caused delivery of the wrong food."

In which of these scenarios, failure by a person or failure by machine as an order taker, is the customer more likely to blame the company, to have a higher recovery expectation, and to rate evaluations of the company lower (overall dissatisfaction, return intent, complaining intent, and negative word-of-mouth)? The current study intends to further the understanding of these questions and, in that effort, the research explores how service failure types (by non-Internet SSTs, by employees, or by company procedures/policies) affect causal attributions and expected recovery from the company.

Research Questions

The research questions driving this study are:

1. How do customers perceive service failures differently, between interpersonal services versus technology-based services?
2. How do different service failure types (by non-Internet SSTs, by employees, and by company procedures/policies) affect customers' causal attributions, specifically according to three different elements (locus, stability, and controllability) of causal attributions?
3. How do customers differently assign overall causal attribution to a company after experiencing three different types of service failures?
4. How does the failure severity impact customers' overall causal attribution for the service failure?
5. How do causal attributions influence expectations for recovery, overall evaluation, and behavioral reaction to the company?

6. How do the moderating effects of previous experiences and technology anxiety influence the relationship between failure types and causal attributions?

Purpose of the Study

Capturing the characteristics of failure types and customers' perceptions and reactions following service failures is important for understanding consumers' confusion arising from the complexity of service delivery modes (interpersonal services vs. non-Internet SSTs). Also of significance is the influence on customers' overall evaluations of a company after something goes wrong. Having this information available could provide service firms a competitive advantage as well as enhancing the possibility of the general hospitality industry's improving service to customers. The research clarifies different perceptions of customers for causal attributions (locus, stability, and controllability), overall causal attribution for a firm, and expected recoveries from failures by non-Internet SSTs, by employee services, and by company procedures policies.

In other words, this dissertation explores customers' perceived causal attributions (locus, stability, and controllability), overall causal attribution, expected recoveries, and evaluations of firms following the three different types of service failures. Therefore, the current study develops a conceptual framework for consumers' causal attributions and overall causal attribution for a company for different service failure types and examines how these causal attributions affect the expected recovery and evaluations of the firm.

Definitions of Terms

Service Encounter is a period of time during which a consumer directly interacts with a service provider (Shostack, 1985) includes the moment of interaction between a customer and a firm (Bitner, Booms, & Mohr, 1994; Keaveney, 1995; Shostack, 1985; Winsted, 1997), and involves both interpersonal and non-human interactions (Meuter et al., 2000).

Service Failure is service performance that falls below a customer's expectation (Hoffman & Bateson, 1997).

Self-service Technologies (SSTs) are technological interfaces that enable customers to receive service independent of direct service employee involvement (Meuter et al., 2000, p50). For the purpose of this study, SSTs have been limited to non-Internet SSTs (Forbes, 2008). Some examples include touch screen kiosks, ATM machines, automated airline check-in, hotel check-in/out, and car rental services, etc.

Causal Attributions are customers' attempts to attribute a cause for a particular event (Heider, 1944, 1958). According to Weiner (1985b), causal attributions have three elements: locus, stability, and controllability.

Locus is the extent to which perception of a cause is internal or external to the affected individual (Weiner, 1985). The locus of causality might be attributable to the service organization, the service employee, or the customer (Kelly, Hoffman, & Davis, 1993).

Stability defines the cause as either temporary (the extent to which a cause appears to be not stable and occur infrequently over time) or permanent (stable and expected to persist over time) (Weiner, 1985). Failures with stable (enduring) causes should recur more frequently than failures whose causes are not stable (Hess, 1999).

Controllability is the degree to which the perception of a failure's cause is the volition of an individual (Weiner, 1985). Within a consumer context, companies have generally examined attributions of controllability as the extent to which causes of failures are the volition of an organization.

Expected Recoveries relate to the customer's belief that some level of reparation is appropriate after experiencing a failure (Zeithaml, Berry, & Parasuraman, 1993).

Dissatisfaction is a customer's negative affective psychological response based on subjective evaluations of service performance (Oliver, 1980).

Complaining Intent refers to consumer-initiated communications to the service provider to obtain a remedy or restitution for problems arising from particular market transactions (Bougie, Pieters, & Zeelenberg, 2003).

Negative Word-of-Mouth (WOM) entails consumers' relating to friends and other members of a social network the details of a negative service encounter and advising associates to avoid accessing the services of the organization involved (Bougie, Pieters, & Zeelenberg, 2003).

Previous Experience is the relationship or history that a customer has with a business (Oh & Parks, 1997).

Technology Anxiety is the fear and apprehension people feel when thinking about or actually using technology-related tools (Meuter, Ostrom, Bitner, & Roundtree, 2003).

CHAPTER 2

LITERATURE REVIEW AND MODEL DEVELOPMENT

This chapter consists of five sections: (1) service encounter, (2) technology's infusion in service marketing, (3) service failure types: technology, employee, and company procedure/policy, (4) model and hypotheses development, and (5) summary of research hypotheses.

Service Encounter

Service encounters have been defined as the moment of interaction between a customer and a firm (Bitner, Booms, &Mohr, 1994; Keaveney, 1995; Shostack, 1985; Winsted, 1997). Service encounters are critical moments of truth in which customers often develop indelible impressions of a firm. In fact, the encounter represents service from the customer's point of view (Bitner, 1990). Encounters may be face-to-face in an actual service setting, via telephone, through the mail, or even on the Internet. Encounters involve both interpersonal and non-human interactions (Meuter et al., 2000). Interpersonal service encounters encompass all aspects a consumer may confront during an encounter with a service firm's personnel, including physical facilities and other tangible elements during a given period of time (Bitner, Booms, & Tetreault, 1990, p72).

How well a service encounter is handled can be a considerable conjecture in the overall evaluation of the service quality. Customers who experience favorable service encounters are more likely to become repeat, loyal customers, while customers who experience unfavorable service can become angry and dissatisfied customers. Service providers must, therefore, understand that customers often evaluate services received

based on the behavior of a company's employees (Bitner, 1990; Bitner, Booms, & Tetreault, 1990; Surremamt & Solomon, 1987).

The interpersonal focus of service encounter research is not surprising since most encounters have traditionally been interpersonal contact. However, infusing technology into an existing operation requires extensive adaptation on the part of employees, customers, and the company (Bitner, Brown, & Meuter, 2000).

Three components of models served service encounter research for many years. Those components include the company, its employees, and customers, and are collectively known as the Service Marketing Triangle (Kotler, 1994). A newly developed model with a fourth component represents the three components' interaction illustrating a firm's increasing reliance on technology. The resulting Services Marketing Pyramid shows all four components (the company, its employees, its customers, and technology) interacting in a service encounter (Parasuraman, 1996).

Technology's Infusion in Service Marketing

The triangle model of services marketing (Kotler, 1994) is a framework, envisioned by Parasuraman (1996), has been expanded to include the influence of technology. The basic triangle model has endpoints representing the company, employees and customers (see Figure 1.1). Researchers traditionally focused on the issues between the company and its employees (internal marketing), between the company and its customers (external marketing) and contact employees and customers (interactive marketing). Since the role of technology influences each of these types of marketing, Parasuraman (1996) extended the basic triangle model of service marketing to

incorporate the role of technology. The revision changes the triangle to a pyramid with the forth endpoint representing technology (see Figure 1.1). The adaptation of the triangle model of services marketing into a pyramid illustrates the overall influence of technology on service management.

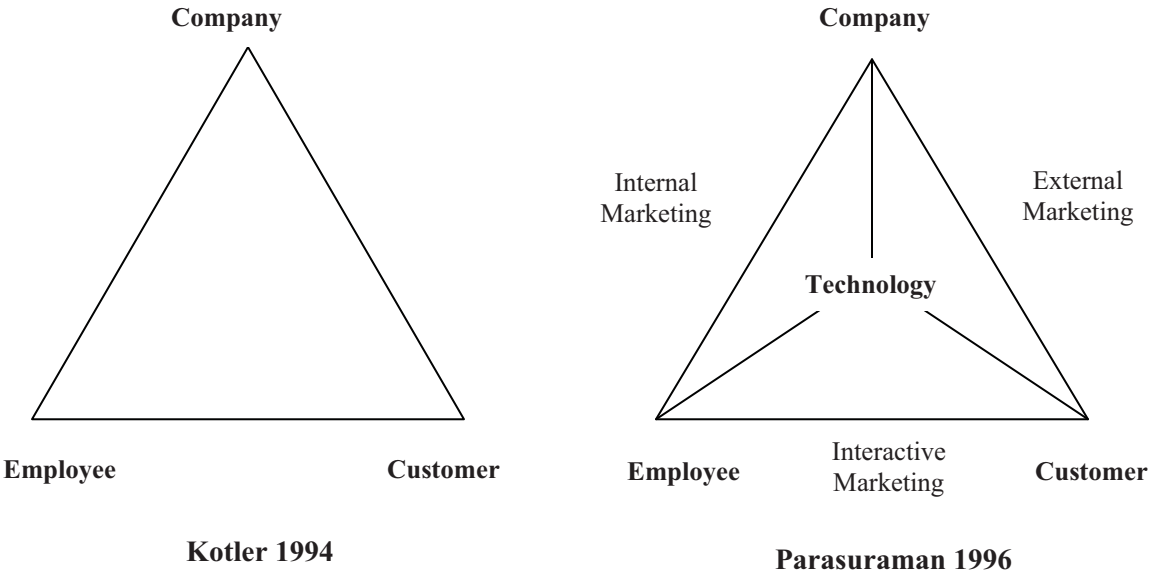

FIGURE 1.1 Service Marketing Triangle and Pyramid Models

Through the base of the pyramid, the service encounters are now seen as the dynamic relationships among employees, customers, technology, and the company. In terms of service interface or interaction with customers when delivering services, customers interact with employees, technologies, and company. Just as the original triangle helped shape the direction of service encounter research, the adapted pyramid model also encourages direct research on service failures among different types of services deliveries; technology, employee, and company procedure/policy. Since

encounters represent service from the customer's point of view (Bitner, 1990), the current research explores customers' differing perceptions of service failures originating with technology, employees, and companies' procedures/policies.

Service Failure Types: Technology, Employee, and Company Procedure/Policy

Gronroos (1992) defined service failure as not performing or performing below customers' expectations of the firm. The services marketing literature recognizes two types of service encounter failures: outcome and process (Bitner, Booms, & Tetreault 1990; Hoffman, Kelley, & Rotalsky, 1995; Keaveney, 1995; Mohr & Bitner, 1995). The outcome dimension of a service encounter involves what customers actually receive from the service; whereas, the process dimension involves how customers receive the service: the manner of delivery (Gronroos, 1988; Parasuraman, Zeithaml, & Berry, 1985). Therefore, in an outcome failure, the organization does not fulfill the basic service need or perform the core service (e.g., a reserved hotel room is unavailable); whereas, in a process failure, a flaw occurs in the delivery of the core service or the service is deficient in some way (e.g., a hotel desk clerk treats the customer rudely during check-in).

On the other hand, few studies in service marketing consider customers' causal attributions and expected recovery from the three different types of service failures that arise from service interfaces with customers. Principles of resource exchange and mental accounting suggest that customers may classify the various types of resources lost due to a service failure into different categories or "accounts." Customers' evaluations are expected to be differed by types of failures because these failures represent different categories of loss.

If the definition of customer service is limited to dyadic interaction, or even interaction between providers and customers, addressing some of the elements of people's experiences from self-service technologies is not possible because SSTs allow acquiring both products and services without direct interaction with an employee (Meuter et al., 2000).

Much customer service research seems to have assumed that customer service is only face-to-face interpersonal interaction between "real people": providers and customers. Based on the study by Meuter et al. (2000), dissatisfying incident categories do arise from experiences with SSTs: technology failure, process failure, poor design, and customer-driven failure. The extension of the Parasuraman (1996) Services Marketing Pyramid, service failures by technology (machine), employee (person), and by company (procedure/policy) allows the current study to compare different effects of failure types on causal attributions and expected recovery.

Technology Failure (Non-Internet SST)

Based on the study by Meuter et al. (2000), a breakdown of delivery can occur at the point at which the customer interacts with technology. Typical examples include a broken ATM or a malfunctioning kiosk machine. These technology failures can be especially frustrating for customers who have come to rely on performing these transactions 24 hours a day from any location (Meuter et al., 2000).

Forbes (2008) strengthened the lack of studies on types of service failures and service recoveries initiated by non-Internet SSTs. Forbes also emphasized the differences between Internet SSTs and non-Internet SSTs in which non-Internet SSTs customers

experience different types of service failure compared to Internet-based SSTs. Also non-Internet SST firms employ a different series of recovery strategies relative to Internet SSTs. In addition, the Forbes study suggested that the largest recovery category for non-Internet SST was no recovery, 48%. The current research focuses exclusively on non-Internet SST service failure and excludes those in an Internet SST setting.

Employee Failure

Customers occasionally encounter a service failure from employees that may contribute to a dissatisfactory outcome. A schema created by Bitner, Booms, and Tetreault (1990) used the Critical Incident Technique (CIT) to categorize both favorable and unfavorable service encounters within hotel, restaurant, and airline industries. Service delivery failures, apparently, relate to customers' dissatisfaction in the retail industry (Kelly et al., 1993). In the Bitner, Booms, and Tetrault study, service failures such as slow or unavailable service or improper employee action through mischarging, embarrassments, and attention correlate significantly with customer dissatisfaction.

Company Failure (Procedure/Policy)

Failures commonly related to policy or procedure issues involve such activities as billing, delivery, or processing a transaction. Some examples are: a company policy to deny credit purchases for certain services, procedures that require extended periods of time to accomplish, or a process that allows orders to be easily lost or filled incorrectly.

The attribution of the failure to the firms causes a reduction in all of quality perceptions. When the customer attributes the responsibility of the failure to the firm, the

negative effects result for the quality perceptions of the different aspects of the service provided by the firm (Iglesias, 2009).

MODEL AND HYPOTHESES DEVELOPMENT

This section describes a conceptual model used in this study. The study proposes a model for investigating: (1) the effects of service failure types on causal attributions, (2) the effects of service failure types on overall causal attribution, (3) the effects of failure severity on overall causal attribution, (4) the effects of causal attributions on expected recovery, (5) the effects of causal attributions on evaluative outcome and behavioral outcome, and (6) the moderating effects of previous experience and technology anxiety on the relationship between failure types and overall causal attribution. The proposed conceptual model appears in Figure 2.1 and Figure 2.2.

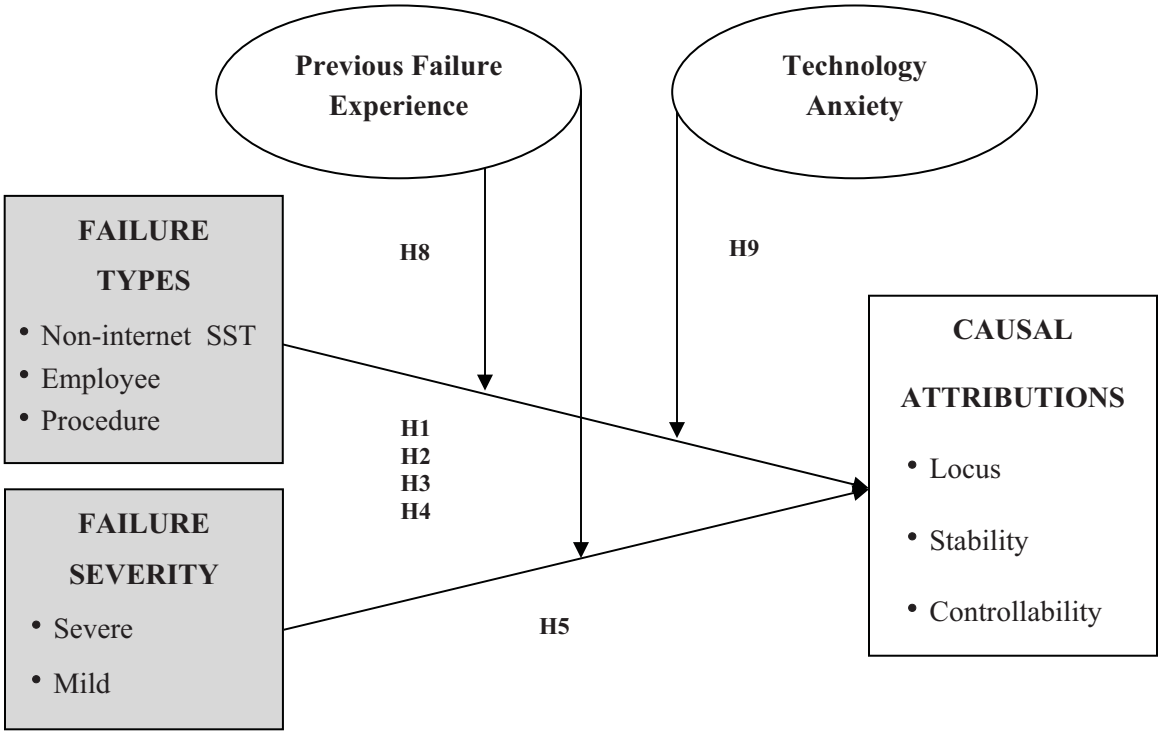

FIGURE 2.1 Proposed Conceptual Model for the Effects of Service Failure Types and Failure Severity on Causal Attributions

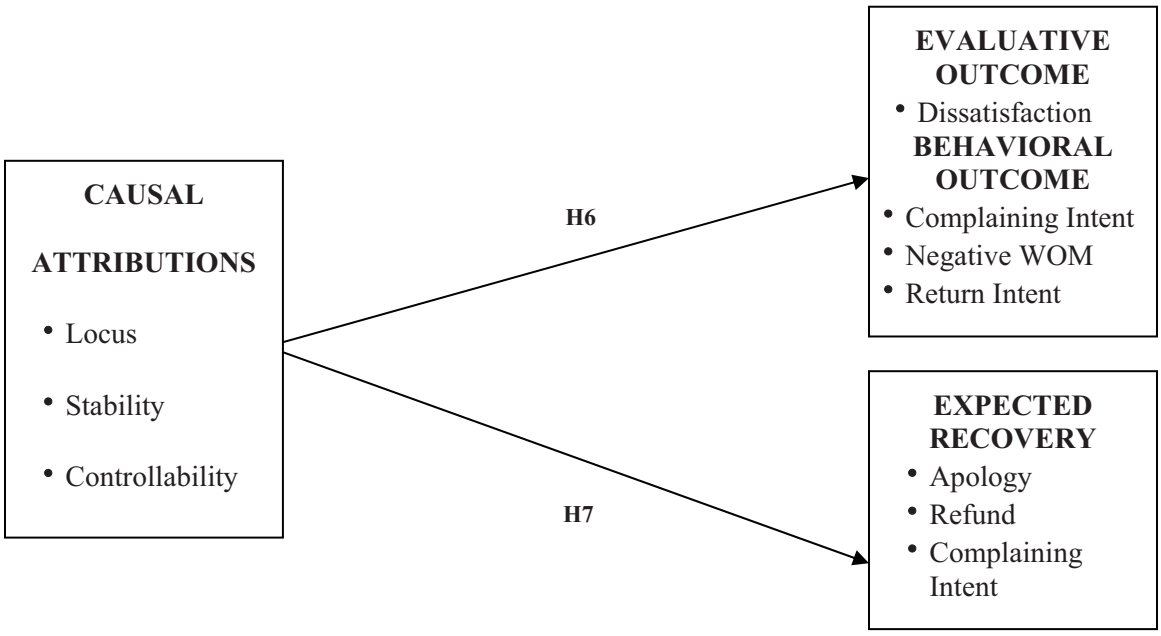

FIGURE 2.2 Proposed Conceptual Model for the Effects of Causal Attributions on Evaluations and Expected Recovery

The Effects of Service Failure Types on Causal Attributions

When services fail, customers search for explanations. They will engage in a thought process in an attempt to make sense of what happened. This attribution process serves as the link to the customers' attitudes and behavior.

Causal Attributions

Causal attributions represent cognitive explanations events (Heider, 1958). Weiner (1985) suggested that individuals form attributions according to three dimensions: locus, stability, and controllability: (1) Locus attribution is customers' determination of whether or not the cause(s) of failures are located within the customer or the organization. (2) Stability attribution is the degree to which customers believe that the cause(s) of failures are temporary or enduring. (3) Controllability attribution is the degree to which customers believe that the cause(s) of failures could have been prevented by the organization (Folkes, 1984; Weiner, 1985).

In particular, the three attribution dimensions of locus (Who caused the failure?), stability (Is the failure likely to happen again?), and controllability (Could the failure have been prevented?) have empirical links to influencing consumers' complaint intentions, return intentions, word-of-mouth behavior, redress preferences, and anger toward firms (Folkes, 1984; Folkes, Koletsky, & Graham,1987; Richens, 1983). Moreover, attribution has had a prominent role in research of service failures (Bitner, 1990; Folkes, 1984; Folkes et al., 1987). Few studies on comparisons of levels of causal attributions from different failure types (e.g., non-Internet SST, employee, and procedure) examined the characteristics of failure types.

Locus Attribution

Locus is the extent to which a cause is considered to be internal or external to the individual (Weiner, 1985). Locus has been operationalized in marketing to represent whether or not the location of the cause of failure is external to the organization (originated in production or distribution of the product or service) or internal to the organization (initiated by consumer ignorance or carelessness) (Folkes, 1984; Krishnan & Valle, 1979; Richins, 1983; Valle & Wallendorf, 1977). Folkes (1988, p556) argued that "locus influences beliefs about who should solve problems; problems arising from consumers' actions should be solved by consumers whereas problems arising from firms' actions should be solved by firms."

The locus of causality might be the service organization, the service employee, or the service customer (Kelly, Hoffman, & Davis, 1993). The nature of the locus of causality, whether the cause is internal to customers or external to customers (Folkes, 1984), must be examined in light of new technologies. A generally accepted notion is that individuals tend to attribute successful outcomes to themselves and unsuccessful outcomes to external forces. Marketing literature demonstrated strong support for a self-serving bias in decision making contexts (Curren, Folkes, & Steckel, 1992). This bias represents the tendency to emphasize internal attributions for successful performance than for unsuccessful performance (Bradley, 1978). A central interest in this study is whether or not a self-serving bias has an impact on causal attribution in the context of service failure.

Subjects in the high-participation conditions expressed a greater degree of external attribution for service failure to the organization (school) and to the employee

(lecture) than did subjects in the low-participation condition (Yen, Gwinner, & Su, 2004). Self-service contexts interact with the level of participation because the consumer has a major, active role in successful delivery of service. Consumers of technology-based services, actually perform the service for themselves. Since consumers are their own service providers, they are more likely to attribute failure to the firm (in this case, non-Internet SST) than those with a less active role in service delivery by an employee or a company's procedure/policy. Furthermore, an active role is the lowest in the company procedure/policy mode of service delivery compared with an interaction with an employee or with a non-Internet SST. This study considers three external causes of attributions (non-Internet SST, employee, and company procedure/policy); self-blaming, customers blaming themselves, is internal locus attribution. Based on the level of customers' participation in service delivery and the self-serving bias theory, internal attribution (self-blame) could be the lowest level and external attribution the highest level in a non-Internet SST failure when comparing the levels of locus attributions among three types of failures. This may be due to customers' high participated in non-Internet SSTs.

Based upon the previous background, proposed hypotheses are:

H1a: Customers' internal attribution (self-blame) will be the lowest in a non-Internet SST failure.

H1b: Customers' external attribution will be the highest in a non-Internet SST failure.

Stability Attribution

Stability is the perception of the extent to which a cause is temporary (expected to vary over time and less predictable) or permanent (expected to persist over time and

therefore more predictable) (Weiner, 1985). Failures with stable (enduring) causes should recur more frequently than failures whose causes are not stable (Hess, 1999). For example, stable causes of a late-arriving airplane include factors such as air controller strikes, organizational policies, and personnel practices, while unstable causes include mechanical problems, thunder storms, fog, and wind shear (Folkes, 1984; Folkes et al., 1987). Stability is associated with uncertainty of future performance (Folkes, 1984). Stability attributions should, therefore, be important because of their influences on customers' expectations of future service performance (Folkes, 1984; Oliver, 1997; Weiner, 2000).

Failures with stable causes are more likely to recur than failures with unstable causes, creating considerable problems for an organization. Therefore, failures with stable causes are obvious managers' targets for problem solving to facilitate good service. People often use consistency principles to form attributions (Heider, 1958). Compared to an average service organization, an excellent service organization has lower tolerance for recurring failures.

The literature on the subject of stability usually considers causes of a more stable nature (the structural ones) usually affect satisfaction more negatively than causes of an unstable nature (employee attitude) (Iglesias, 2009). When a company's policies/procedures, such as organizational policies and personnel practices in service settings go awry, a company procedure/policy failure is more stable until corrected, than are services failures from technologies. Therefore, companies' procedure/policy failures are more likely to allow mistakes to persist over time. Folkes et al. (1987) found that passengers believe that delays caused by airline personnel are the most stable, and those

caused by mechanical problems are least stable. Moreover, people may perceive humans are more likely to perpetrate errors than machines. Also, changing humans' actions is more difficult than correcting machines' malfunctions. In other words, it is harder for humans to fix or correct their problem while it needs shorter period of time for mechanical problems to be fixed. Therefore, people may more likely perceive machine malfunctions to cause unexpected events that vary over time, when perceptions of the level of stability attribution is compared to employee failures and procedure failures. The resulting hypothesis is:

H2: Customers' stability attribution will be the lowest in a non-Internet SST failure.

Controllability Attribution

Controllability is the degree to which the perception of the cause of a failure is at the volition of an individual (Weiner, 1985). Within a consumer context, companies have generally examined attributions of controllability as the extent to which causes of failures are at the volition of an organization (Hess, 1999). According to Folkes, Koletsky, and Graham (1987), attributions of controllability emerge from perceptions that the organization: (1) could have performed alternative actions to avert a negative event from occurring (Hamilton, 1980), or (2) possesses a solution that eliminates the cause(s) of a negative event (Brickman, Rabinowitz, Karuza, Coates, Cohn, & Kidder, 1982). Past research in marketing revealed that factors such as employee training, misleading advertising, delays caused by excessive ticket sales, and personnel practices gain customers' perceptions of being significantly under the control of an organization (Folkes, 1984; Folkes et al., 1987). In contrast, factors considered uncontrollable by airline

organizations include: ice, fog, hail, excessive heat, unanticipated over-demand, and fraudulent marketing research from suppliers (Folkes 1984; Folks et al., 1987). Therefore, controllability is the degree to which a consumer group perceives a cause to be volitional or non-volitional. This attribution involves customers' perceptions of a service organization's ability to influence or prevent a failure (Hamilton, 1980; Weiner, 2000).

Past research in marketing has not explicitly determined whether or not examination of controllability attributions should be at the employee or organizational level. Typically, Hess, Ganesan, and Klein (2007) considered controllability to be an organizational-level construct (Folkes, 1984; Folks et al., 1987). Customers may perceive service failures caused by restrictive return policies to be controllable by organizations, while perceptions of failures caused by employee rudeness may be less controllable by organizations. Given the factors that authors of previous research have found to be controllable and uncontrollable by organizations (Folkes, 1984; Folks et al., 1987), apparently, in general, customers attribute control to organizations if causes can be prevented or eliminated by altering existing policies, procedures, or training programs (or establishing new ones). For example, service failures caused by overly restrictive return policies typically have the perception of being controllable at the organization-level because modification of the current policy eliminates the cause. Thus:

H3: Customers' controllability attribution will be the highest in a company procedure/policy failure.

The Effects of Service Failure Types on Overall Causal Attribution

For overall causal attribution, which has greater relevance to blame and a company's responsibility, than to causal attributions for failure types, customers may perceive overall causal attribution among three failure types differently from attributing each causal attributions on each failure. Specifically, when customers perceive failures separately, they perceive each failure to be technology's malfunction, human error, and a company's failure.

However, when regarding customers' perceptions of a company's responsibility for each failure for which customers can evaluate a company's management, overall causal attribution may accrue least to an employee failure since companies have difficulty controlling employees' mistakes and misbehaviors. Service failures caused by restrictive return policies may be viewed by customers as organizationally controllable, while failures caused by employees' rudeness may be perceived as less controllable by organizations (Folkes, 1984; Folks et al., 1987). The malfunctions of machines or inefficient procedures are more easily controlled and corrected by a firm than are humans' attitudes and behaviors. As a consequence, customers may perceive procedural and technological failures are more the responsibility of the company than human service failure because controlling and consistently implementing service by humans is more difficult for companies despite providing the best possible training programs

Accordingly:

H4: Customers' overall causal attribution to a firm will be the lowest in an employee failure.

The Effects of Failure Severity on Overall Causal Attribution

O'Conner and Siomkos (1994) reported that the importance of a purchasing task is one of the crucial factors that influences a customer's willingness to relinquish control. If the tasks are of great importance, customers are less likely to relinquish control. Therefore, the expectation is that when a service is important to the customer, an effective strategy is to provide a sense of control, thus enhancing satisfaction. Customers who are dissatisfied with products or services of importance will experience higher levels of stress, frustration, and anger than customers who are dissatisfied with products or services of lesser importance (Blodgett, Granbois, & Walters, 1993, p. 407). Levesque and McDougall (2000) suggested that severe service failures are likely to lead to greater dissatisfaction than mild service failures, and Oh (2005) asserted that failure severity had significant influence on negative word-of-mouth (WOM) intention.

Service failures can vary in severity, which is the magnitude of loss that customers experience due to the failure (Hart, Heskett, & Sasser, 1990). Service failure severity refers to a customer's perception of the severity of a severe problem. The more intense or severe the service failure, the greater the customer's perceived loss. Zeithaml, Berry, and Parasuraman (1993) suggested that customers' zones of tolerance for service failure vary depending on the situation. The researchers maintained that a service failure is one of the major factors that narrow a customer's zone of tolerance. As the service problem becomes more severe, the customers' tolerance zone gets narrower, thus increasing the potential for customer dissatisfaction (Hoffman et al., 1995).

Previous research suggested that the severity of the service failure influences the evaluation of a service provider after a service failure. The more consumers blamed a

company for product failures, the more they complained (Richins, 1983). In addition, a greater number of severe service failures should increase the likelihood of negative WOM due to the strong negative emotions associated with severe service failures (Richins, 1987). Therefore, the severity of the service failure negatively influences satisfaction and word-of-mouth recommendations and increases complaining intent.

The defensive attribution hypothesis posits that when an incident results in a severe outcome, greater blame attributes to a potentially responsible party by an observer of the incident (Shaver, 1970). Fiske and Taylor (1991, p.85) described the impact of the perceived severity of outcomes and causal attribution: "As the consequences of an action become more severe, they become more unpleasant, and the notion that they might be accidental becomes less tolerable." The defensive attribution hypothesis has had extensive examination in the psychology literature, and two meta-analyses found a significant positive relationship between the severities of negative outcomes on measures of responsibility and blame (Burger, 1981; Robbennolt, 2000). Hence, severity or perceived severity, apparently strongly correlates with observers' blame attributions to the perpetrators. Based on the above, the arising hypothesis is:

H5: Customers experiencing severe service failures will assign more overall causal attribution to firms than do customers experiencing mild service failures.

The Effects of Causal Attributions on Expected Recovery

Expected recovery is related to the customer's belief that some level of reparation is appropriate after experiencing a failure (Zeithaml, Berry, & Parasuraman, 1993). Prior

research showed that attributions related to a firm's responsibility for the failures has a significant effect on the degree to which consumers believe a refund and/or an apology are deserved (Hess, Ganesan, & Klein, 2003; Swanson & Kelly, 2001). Folks (1984), for example, asked survey respondents to recall a recent restaurant experience in which they were dissatisfied with the taste of their food or beverage, and to explain why they were dissatisfied. The results showed that attributions of blame toward the restaurant were strongly influenced by whether or not the customers believed that they deserved to receive an apology or refund. Swanson and Kelley (2001) also found causal attributions of failure to positively relate to the customers' service recovery expectations.

Although recent literature implied that online consumers expect service providers to incorporate a recovery mechanism (Meuter et al., 2000), no mention of differences in levels of expectations for recovery appeared. While in fact, differences may exist in the level of expected recovery between online and offline shoppers, few research studies investigated this. For example, while a given service failure would lead both online and offline consumers to expect an apology (the same recovery level), each customer might prefer that the apology occur by different means (Harris, Grewal, Mohr, & Bernhardt, 2006). The online customer might expect an emailed apology, while the offline customer might expect a letter or an apology in person. Similarly, two studies compared expected recovery across service types.

On the other hand, in non-Internet SSTs failure encounters, without any interpersonal assistance from service employees, customers are ignorant of the roles or scripts to follow and to fix the problems (Solomon, Surprenant, Czepiel, & Gutman, 1985). Some consumers passively leave the interface and switch to other alternatives,

others use toll-free telephone numbers to notify the company of the failure and claim compensation. Still others just wait until interpersonal (employee) assistance arrives (Zhu, 2002).

Locus attribution influences whether or not consumers believe a firm should provide a refund and apology for product failure (Folkes, 1984b). When failure is firm-related, firms owe consumers refunds and apologies; when failure is consumer-related, firms are not obligated to provide redress (Folkes, 1984).

Stability attribution refers to customers' perception that causes are relatively permanent and unchanging or temporary and fluctuating. Stability attribution influences the types of redress preferred when a failure occurs. Compared to unstable reasons for the service failures, stable attributions lead consumers to prefer refunds over exchanges (Folkes, 1984).

Controllability attribution also influences consumers' anger from product failure (Folkes, 1984b), and consumers express more anger when the firm had volitional control over a problem (e.g., repair was not timely due to the shop's carelessness) than when the firm lacked control over the problem (e.g., a repair was not ready on time due to a power failure in the area). Delayed airline passengers who believe that flight delays were controllable by the airline felt angrier at the airline than those who believed the delay was uncontrollable (weather) (Folkes et al., 1987). Anger, in turn, influences passengers' desires to complain about a problem to the airline and willingness to fly the same airline again. Expected recovery actions vary depending on the degree of causal attribution. Based on these studies, proposed hypotheses are:

H6a: When locus attribution is high, customers more frequently expect an apology as service recovery than either a refund or the need to complain.

H6b: When stability attribution is high, customers more frequently expect a refund as service recovery than the need to complain.

H6c: When controllability attribution is high, customers are more likely to complain as service recovery, than feel the need for a refund.

The Effects of Causal Attributions on Evaluative Outcome and Behavioral Outcome

Previous research demonstrated that attributions relate to important effects and behavioral outcomes (Folkes, 1984; Folkes et al., 2003; Curren & Folkes, 1987; Bitner, 1990; Hess et al., 2003; Tsiros et al., 2004). This study investigates two principal outcomes from service failure encounters: evaluative outcomes and behavioral outcomes. The evaluative outcome of a service failure encounter is overall dissatisfaction. Behavioral outcomes include return intent, complaining intent, and negative WOM.

For example, controllability attribution, apparently, impacts customer anger (Folkes, 1984; Folkes et al., 1987), (dis)satisfaction (Bitner, 1990; Hess et al., 2003), and service recovery expectations (Hess et al., 2003). Furthermore, stability attribution appears to influence certainty of future performance (Folkes, 1984), customer preference for redress (Folkes, 1984), satisfaction (Bitner, 1990; Hess et al., 2003), anger (Folkes et al., 1987), desire to complain (Folkes et al., 1987), and intention to repeat patronage (Folkes et al., 1987).

Evaluative Outcome: Overall Dissatisfaction

Consumers' attributions of blame toward marketers can influence the dissatisfaction outcome. Dissatisfaction is a customer's affective psychological response based on subjective evaluations of service performance (Oliver, 1980).

Findings showed that attributions of controllability and stability both significantly and negatively affect customer satisfaction (Bitner, 1990; Tsiros et al., 2004). Previous research indicated that the greater the severity of a service failure, the more dissatisfied the customer is with the organization (Folkes, 1984; Folkes et al., 1987). Wirtz and Mattila (2004) demonstrated that a customers' perceptions of a firm's responsibility significantly influences satisfaction evaluations. Smith and Bolton (1998) found a direct relationship between attributions of stability (along with satisfaction) and return intentions within a restaurant context, but not within a hotel context. Previous research showed that both of these attributions predict satisfaction (Bitner, 1990; Hess et al., 2003), and it was often assumed to be a full mediator of these relationships. Controllability and stability attributions, each, have a significant, direct effect on return intentions, not fully mediated by satisfaction with the organization (Hess, 2008). Thus:

H7a: Customers' causal attributions positively relate to overall dissatisfaction with the firm.

Behavioral Outcome: Complaining Intent, Negative Word-of-Mouth, Return Intent

Previous research revealed that stability and controllability attributions directly impact return intentions and negative word-of-mouth behavior (Folkes et al., 1987; Curren & Folkes, 1987). Complaining Intent refers to consumer-initiated communications to the service provider to obtain remedies or restitutions for problems in

particular market transactions (Bougie, Pieters, & Zeelenberg, 2003). Negative word-of-mouth (WOM) entails telling friends and other members of one's social network the details of a negative service encounter and advising them not to acquire services from the organization involved (Bougie, Pieters, & Zeelenberg, 2003).

Richins (1983) also found that the greater the degree of blame attributed to the company for product failure, the more consumers complain. Hence, consumers may perceive complaining as a way of castigating an organization, but they may also view complaining as a way of encouraging problem solution. In addition, severe service failures increase the likelihood of negative WOM due to strong negative emotions associated with these failures (Richins, 1987). Therefore, proposed hypotheses are:

H7b: Customers' causal attributions positively relate to both complaining intent and negative WOM to the firm.

H7c: Customers' causal attributions negatively relate to return intent to the firm.

The Moderating Effects of Previous Experience and Technology Anxiety on the Relationship between Failure Types and Overall Causal Attribution

Previous Experience

Previous experience is defined as past interactional service experience, and past core service experience as customers' perceptions of the relative quality of interaction and core service elements during previous encounters with the focal organization (Zeithaml, 1988). Tax et al. (1998) identified previous experiences as an important component of the service encounter because they influence subsequent service encounters and the future relationship between the customer and the service provider. Customers

continually update their beliefs and expectations regarding a service, and with each visit they integrate new information with their existing knowledge.

Prior failure experience is the negative relationship or history that a customer has with a business and it moderates the customer's service quality judgment and level of satisfaction (Oh & Parks, 1997). Bougie et al. (2003) investigated the specific experience of anger and dissatisfaction and their effects on customers' behavioral responses to failed service encounters among various industries. In that study, reported service failures represented categories of: personal transportation, telecommunication, stores, restaurants, education, banking and insurance, repair and utility services, travel agencies, and local government. Presumably, customers ascribe different levels of blame to companies when perceiving increasing failures from different types of services.

Weiner (2000) stated that previous experiences with a product or service influence customers' impressions of product or service quality. The study claimed that this tendency causes customers to attribute a current failure to unstable (rather than stable) causes when past experiences have been positive. Quality of past service performance negatively relates to stability attributions for the cause of failure (Hess et al., 2003).

If customers encounter consistent failures from these three different types of service failures at the same restaurant, then how would it be different for the level of blame on company among these three types of failures? Consumers' past experiences with a particular service tend to shape the perception of causal attribution. Therefore, the number of past failure encounters might moderate the effects of service failure types on overall causal attribution. As the number of past failure encounters increases, the customer might react to these three types of service failure and evaluate the service

organization's performance differently. In other words, the more failure experience customers have with a particular transaction type (non-Internet SST, employee, and procedure), the more varied the levels of blame the customers are likely to place on the firm for service failures. Also, the numbers of service failures may moderate the relationship between failure severity and overall causal attribution. From the previous arguments, the following predictions arise:

H8a: Previous failure experience moderates the relationship between service failure types and overall causal attribution.

H8b: Previous failure experience moderates the relationship between failure severity and overall causal attribution.

Technology Anxiety (TA)

Technology anxiety (TA) has been the subject to study because it represents one of the important determinants for adoption of new technologies (Meuter, Ostrom, Bitner, & Roundtree, 2003). Technology anxiety originated from computer anxiety, which relates to the fear, apprehension, and hope that people have when using computer technology (Cambre & Cook, 1985). The concept of technology anxiety reflects the level of anxiety experienced by an individual when confronted with the decision to use a technological innovation such as a computer (Igbaria & Parasuraman, 1989). Whereas, computer anxiety pertains to a narrow range of anxieties related to personal computer use, technology anxiety, however, concentrates on a user's state of mind regarding technology tools in general (Meuter, Ostrom, Bitner, & Roundtree, 2003). Therefore, technology anxiety is the fear and apprehension people feel when thinking about or actually using

technology-related tools (Cambre & Cook, 1985; Meuter, Ostrom, Bitner, & Roundtree, 2003).

Research has emphasized anxiety related to personal computers, yet the concept and its implications can extend to anxiety in relation to technological tools in general. Research on use patterns of self-service technologies (SSTs) indicates that respondents with higher levels of technology anxiety use fewer SSTs and that technology anxiety is a consistent predictor of SST use (Meuter, Ostrom, Bitner, & Roundtree, 2003). Likely, the anxiety arises from an inability or lack of self-confidence for effectively managing or controlling the technology. For this reason alone, consumers' anxieties toward technology or computers should affect the decision to use that technology. For example, Meuter et al. (2003, p. 904) found that technology anxiety was the "most influential predictor of SST usage," and individuals with high technology anxiety were less disposed to utilizing SSTs. The other study also supported that technological anxiety negatively affects consumers' SST use decisions (Oyedele & Simpson, 2007).

A previous study showed that technology anxiety has more explanatory power for predicting adoption of technological services than demographic variables such as age and gender, and the anxiety negatively impacts overall satisfaction, repeat use intention, and positive word-of-mouth behavior from using technological services (Meuter, Ostrom, Bitner, & Roundtree, 2003). In other words, technology anxiety lowers the positive outcomes of self-service technology encounters (namely, overall satisfaction, the likelihood of repeat patronage, and positive word-of-mouth referrals) for those with satisfying experiences.

On the other hand, TA specifically focuses on the user's state of mind regarding the ability and willingness to use technology-related tools (Meuter, Ostrom, Bitner, & Roundtree, 2003). In the Meuter, Ostrom, Bitner, and Roundtree study, flights-waiting respondents with high levels of TA more often attributed failure to internal causes than did respondents with low levels of TA. Overall 72% of the respondents assigned blame to the firm for dissatisfactory encounters, while 49% of respondents ascribed praise toward the firm in satisfactory encounters (Meuter, Ostrom, Bitner, & Roundtree, 2003). Therefore, the current research focuses on the influence of TA on the relationship between service failure types and causal attribution. Thus:

H9: Technology anxiety moderates the relationship between service failure types and overall causal attribution.

Summary of Research Hypotheses

To summarize, this section presents research hypotheses that will address the relationships between the variables in the proposed conceptual model.

The Effects of Service Failure Types on Causal Attributions

H1a: Customers' internal attribution (self-blame) will be the lowest in a non-Internet SST failure.

H1b: Customers' external attribution will be the highest in a non-Internet SST failure.

H2: Customers' stability attribution will be the lowest in a non-Internet SST failure.

H3: Customers' controllability attribution will be the highest in a company procedure/policy failure.

The Effects of Service Failure Types on Overall Causal Attribution

H4: Customers' overall causal attribution on a firm will be the lowest in an employee failure.

The Effects of Failure Severity on Causal Attribution

H5: Customers experiencing severe service failures will assign more overall causal attribution to firms than do customers experiencing mild service failures.

The Effects of Causal Attributions on Expected Recovery

H6a: When locus attribution is high, customers more frequently expect an apology as service recovery than either a refund or the need to complain.

H6b: When stability attribution is high, customers more frequently expect a refund as service recovery than the need to complain.

H6c: When controllability attribution is high, customers are more likely to complain as service recovery, than feel the need for a refund.

The Effects of Causal Attribution on Overall Evaluations

H7a: Customers' causal attributions positively relate to overall dissatisfaction with the firm.

H7b: Customers' causal attributions positively relate to both complaining intent and negative WOM to the firm.

H7c: Customers' causal attributions negatively relate to return intent to the firm.

The Moderating Effects of Previous Experience and Technology Anxiety on the Relationship between Failure Types and Overall Causal Attribution

H8a: Previous failure experience moderates the relationship between service failure types and overall causal attribution.

H8b: Previous failure experience moderates the relationship between failure severity and overall causal attribution.

H9: Technology anxiety moderates the relationship between service failure types and overall causal attribution.

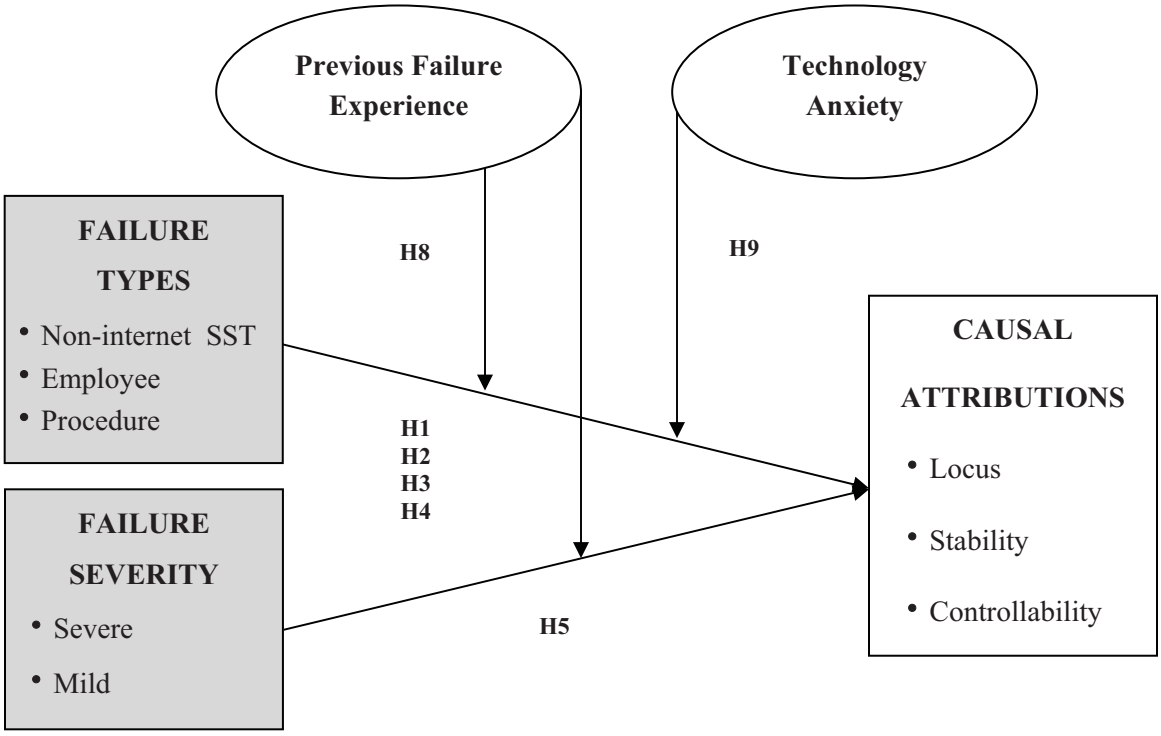

FIGURE 2.3 Proposed Conceptual Model for the Effects of Service Failure Types and Failure Severity on Causal Attributions

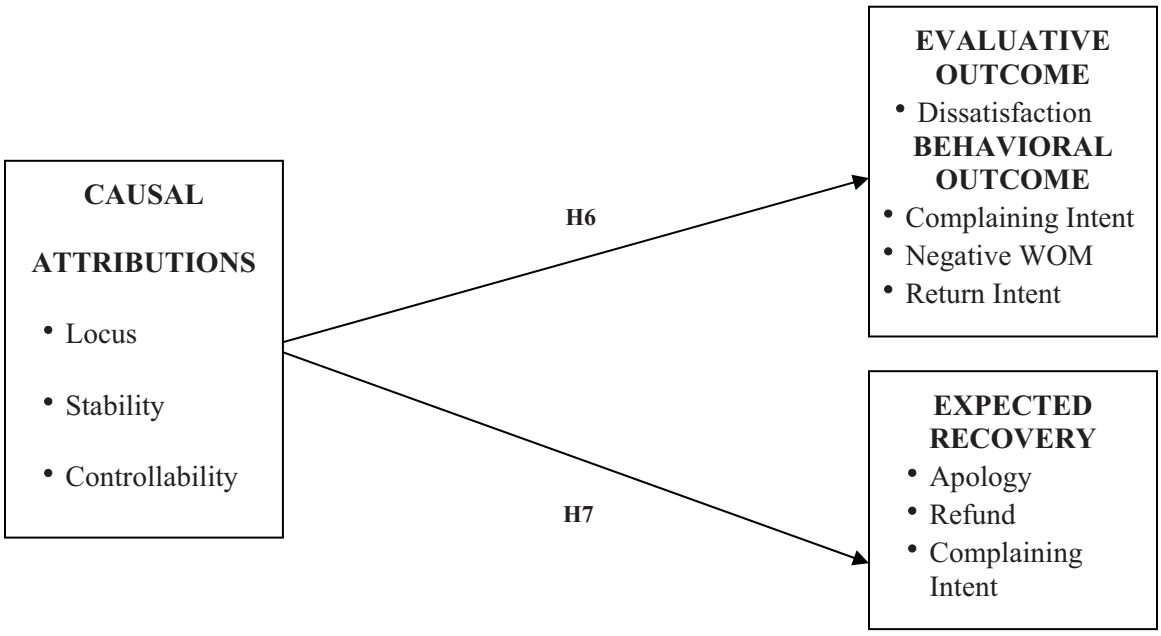

FIGURE 2.4 Proposed Conceptual Model for the Effects of Causal Attributions on Evaluations and Expected Recovery

CHAPTER 3

RESEARCH METHODOLOGY

This chapter addresses the research methodology utilized to accomplish the study's objectives, including (1) research design, (2) pretest of the survey instrument, (3) scenarios development, (4) measurement variables, and (5) sample selection and data collection procedures.

Research Design

This study adopts a between-subjects design and uses written scenarios as stimulus materials. Experimental scenarios have proven to be valuable in past studies of reactions to service failures and/or recovery processes (Smith & Bolton, 1998). The experiment employed a 3 x 2 full-factorial between-groups design, which manipulates three service failure types and two levels of failure severity.

To measure causal attributions, behavioral intent, and expected service recovery, participants received scenarios of restaurant service failure by a non-Internet SST, an employee, and a company procedure/policy. Multi-item measures of causal attributions, expected recovery, overall dissatisfaction, return intent, complaining intent, and negative WOM were dependent variables. The details of the scenarios appear in Appendix B.

Data were gathered using a scenario-based experiment, followed by a survey employing Likert-type and semantic differential scales. The research design consists of two stages, one to pretest the measures and perform a manipulation check, and the second, or main study, to test the proposed hypotheses.

Pretest of the Survey Instrument

The pretest assisted verification of service failure scenarios, modification of items for the validity of the questions and the realism of the scenarios, and manipulation checks. In order to determine if the scenarios were clear and the measures were valid, a pretest and manipulation check was necessary. Thirty undergraduate students in a marketing class in a large northeastern university read the scenarios and answered questions to determine if the manipulations were appropriate and to test and adjust the measurement scales prior to conducting the main study. Pretest results showed that the manipulation check for failure severity was not significantly successful.

Therefore, another pretest with revised scenarios was conducted with thirty staff members of a large northeastern university (See scenarios of pretest and main test in Appendix A). The scenarios for service failure types were identical to the first pretest; however, to make the severe service failure condition appear to be more severe, the event for dining out was changed into an important anniversary celebrated with a spouse.

Comparing the mean scores on the manipulations check items showed that the participants regarded the three service failure types to be significantly different. Participants perceived their involvement to be highest with a non-Internet SST failure in a non-Internet SST failure scenario (mean for non-Internet SST = 4.90, mean for employee = 1.50, and mean for procedure = 3.00; $F = 10.762$; $p < 001$). The other two failure types met the planned perception levels.

Table 3.1

Pretest: Manipulation Checks for Service Failure Types

Service Failure Conditions	Perceived Failure	Mean	SD	F- Value	P- Value
Non-Internet SST	Non-Internet SST	4.90	1.97	10.76	<.001
	Employee	1.50	1.08		
	Procedure	3.00	1.77		
Employee	Non-Internet SST	2.50	1.58	7.41	<.01
	Employee	4.80	2.30		
	Procedure	1.88	0.84		
Procedure	Non-Internet SST	4.90	1.66	9.23	<.01
	Employee	2.30	1.83		
	Procedure	5.88	2.10		

Second, a T-test measured the item related to failure severity. A significant difference appeared for participants' perceptions between severe and mild service failure conditions ($p < 05$). Finally, participants rated the scenarios for realism. Two questions, formatted as seven-point semantic differential scales, had anchors of "strongly disagree" to "strongly agree." The measurement scales for realism are: "I believe the scenario was realistic," and "I had no difficulty putting myself in this scenario." A mean value (M= 5.3) on a seven-point scale showed that the scenarios were reasonably and sufficiently realistic. An additional scale was, "I am confident in my ability to assess this kind of service failure." The study's participants perceived the scenarios' descriptions to be realistic ($M = 5.10$).

Reliability tests measured the items representing the dependent variables. Cronbach's alpha values for all dependent variable items were above .70.

Scenarios Development

Mohr and Bitner (1995) suggested guidelines for scenario development based on the definition of the studied constructs. For the main study, revision of the six different scenarios, which manipulated the variables, was the result of the two pretests.

In the scenario for a non-Internet SST failure, when customers went to a restaurant for dinner, the order for a steak through a touch screen SST went wrong due to a malfunction of the SST. In this instance, unexpectedly, the steak order arrived with sautéed onions because the touch screen did not mention that all steaks on the menu were served with onions nor did the SST order menu, despite programming to the contrary, ask customers for a preference: onions or no onions. In the scenario representing an employee failure, the server made a mistake in the order by forgetting to mention that steaks are served with sautéed onions. In the scenario for a procedure/policy failure, customers encountered the failure due to the restaurant policy that all steak orders automatically include onions.

In the scenario for severe service failure condition, a customer and spouse visit a restaurant to celebrate a very important anniversary, and in the course of dinner their steaks arrived with sautéed onions to which the spouse has a deathly allergic reaction. On the other hand, in the scenario for mild service failure, customers visited a restaurant for dinner unassociated with a special occasion. Also, neither individual had a known allergic reaction to onions, merely dislike

Determination of the severity of service failure depends upon the magnitude of loss, damage, or inconvenience caused by service failure (Blodgett, Granbois, & Walters, 1993). The consequences of a service failure such as ruining an anniversary celebration

and being served food to which customers have a serious allergic reaction are much more severe than a service failure such as just "dining out" and being served unpalatable food.

The different types of service failure and different levels of failure severity created the six versions of stimuli (See Appendix B). Independent variables are failure types, failure severity, previous experience, and technology anxiety. Dependent variables are overall causal attribution, causal attributions (locus, stability, and controllability), expected recovery, dissatisfaction, and behavioral reactions (complaining intent. return intent, and negative WOM).

Measurement Variables

Measurement scales appear in Appendix B.

Independent Variables

Failure Types. A 7-point Likert-type scale measured the manipulation check of the failure types. Participants rated, "I believe a touch screen/server/procedure was primarily involved with the problem" (1= strongly disagree, 7= strongly agree).

Failure Severity. A manipulation check of the failure severity used a 7-point Likert-type scale with four items. Participants rated "In my opinion, the problem I encountered at the restaurant was a: 1) 1= insignificant service failure/7= significant service failure; 2) 1= minor problem/7= major problem; 3) 1= small inconvenience/7= big inconvenience, and 4) 1= minor aggravation/7= major aggravation." Development of the four scales was according to Maxham and Netemeyer (2002: 4 items).

Previous Experience. Four items characterized participants' histories with a type of service failure on a 7-point Likert-type scale. The four items were: "1) I have

experienced a problem like this before; 2) This type of problem is a common; 3) I have had a service failure like this many times in the past, and 4) I have never had a service failure like this in the past" (1= strongly disagree, 7= strongly agree). The scale is an adaptation from Hess et al. (2003: 4 items).

Technology Anxiety. The scale included the items: "1) Services that use new technology are much more convenient to use; 2) I feel confident that machines will complete the tasks according to my instructions; 3) I enjoy the challenge of figuring out new technology; 4) I have fewer problems with technology than my friends; 5) It is embarrassing when I have trouble with a new technology while people are watching; 6) Technology always seems to fail at the worst possible time; 7) I feel apprehensive about using technology, and 8) I hesitate to use technology for fear of making mistakes I cannot correct" (1= strongly disagree, 7= strongly agree). The scale is an adaptation from Meuter, Ostrom, Bitner, and Roundtree (2003: 2 items) and from Parasuraman (2000: 6 items).

Dependent Variables

Overall Causal Attribution. Participants rated: "1) To what extent do you blame the restaurant for this problem?" and "2) To what extent do you hold the restaurant responsible for the problem?" on a 7-point Likert-type scale (1= not at all, 7= completely). The scale is an adaptation from Maxham and Netemeyer (2002: 2 items).

Locus Attribution. Locus attribution measurement used a 7-point Likert-type scale. Participants rated: "1) I perceive a touch screen/machine caused the problem; 2) I perceive the server caused the problem; 3) I perceive a restaurant procedure/policy

caused the problem; 4) I perceive I caused the problem" (1= strongly disagree, 7= strongly agree).

Stability Attribution. Stability was measured on a 7-point scale with three-item measure. Participants were asked to rate "the cause of the problem described is likely to be 1) 1= temporary/7= permanent; 2) 1= occurring infrequently/7= occurring frequently, 3) 1= changing over time/7= unchanging over time." The scale is an adaptation from Russell (1982: 3 items).

Controllability Attribution. Controllability, measured on a 7-point scale, included two-items. Participants rated "1) The cause of the problem was controllable," and "2) the cause of the problem could have easily been prevented" (1= strongly disagree, 7= strongly agree). The scale was adapted from Russell (1982: 2 items).

Expected Recovery. Expected Recovery, measured on a 7-point Likert-type scale, included: "1) I expect a replacement and an apology would be sufficient; 2) I expect a replacement and my meal to be free (refund); 3) I expect a replacement, an apology and the meal to be free" (1= strongly disagree, 7= strongly agree).

Overall Dissatisfaction. Six items measured overall dissatisfaction on a 7-point Likert-type scale. The scale included items: "Overall, what is your level of satisfaction or dissatisfaction with this service experience? I feel: 1) displeased with the restaurant, 2) discontented with the restaurant, 3) unhappy with the restaurant, 4) dissatisfied with the restaurant, 5) the restaurant did a poor job, and 6) I made a wise choice in having a meal at this restaurant" (1= strongly disagree, 7= strongly agree). The scale is an adaptation from Oliver and Swan (1989: 6 items).

Complaining Intent. Participants rated: "Considering what you read about the restaurant, how likely is it that you would: 1) discuss the problem with the manager, 2) ask the restaurant to take care of the problem, and 3) complain to the restaurant about the problem" (1= strongly disagree, 7= strongly agree)." The scale is an adaptation from Swan and Oliver (1989: 3 items).

Return Intent. Participants rated "I will 1) return to this restaurant in the future and 2) choose this restaurant again when I want this type of cuisine" (1= strongly disagree, 7= strongly agree). The scale is an adaptation from Choi and Mattila (2008: 2 items).

Negative Word-of-Mouth (WOM). Measurement of negative word-of-word used four items. The scale includes items: "Considering what you read about the restaurant, how likely is it that you would: 1) warn others not to use the restaurant, 2) say negative things about the restaurant to other people, 3) not recommend the restaurant to others who seek my advice, and 4) discourage friends and relatives to do business with the restaurant" (1= strongly disagree, 7= strongly agree). The scale is an adaptation from Zeithaml, Berry and Parasuraman (1989; 4 items).

Sample Selection and Data Collection Procedure

The questionnaire was a paper-based survey distributed to 300 staff members from randomly selected departments at a northeastern university who represent a general population. A cover letter (See Appendix C) accompanied an information sheet providing instructions and details of IRB clearance. In support of a paper-based survey, Cho & LaRose (1999, p. 427) suggested that online surveys rely on contacting respondents through online communities. In many cases, email and Web-based surveys fail to reach

response rate levels of postal surveys and may threaten the use of electronic surveys (Couper, Blair, & Triplett, 1999; Schafer & Dillman, 1998). Therefore, a personal visit to each department to collect surveys obviated low response rates typical of postal surveys (Malhotra, 1993, p.197) and online surveys (Couper et al., 1999; Schafer & Dillman, 1998). Moreover, due to the characteristics of the study to explore the distinction between interpersonal service and technology-based service, manual collection of the surveys avoided the possibility that electronic surveys would bias the response rate toward technology-familiar participants.

Each department's staff assistants consented to making the questionnaires available to staff members, and agreed to return the surveys via campus mail service after collecting completed surveys. The survey completion and collection period spanned one month following email reminders after two weeks of survey distributions. The schools or departments were random selections.

CHAPTER 4

DATA ANALYSIS AND RESULTS

This chapter presents the data analysis and results. The data analyses used the statistical analysis software package: Statistical Package for Social Sciences (SPSS) version 12. 0. ANOVA, hierarchical multiple regression, and paired samples t-test determined the presence of significant differences between variables.

The results from various data analyses designated for verifying hypotheses and the proposed model appear in the following sections: (1) descriptive data analyses, (2) manipulation checks, (3) tests of research hypotheses, and (4) summary of major findings.

Descriptive Data Analysis

After distributing a total of 300 questionnaires, 187 returned questionnaires resulted in a response rate of 62 percent. Deleting 5 incomplete questionnaires produced 182 usable surveys. The gender make-up of the sample was skewed, with 74 percent female respondents and 26 percent male respondents. Ages ranged from 19 to 67 years, with the average subject being just over 35 years old.

Manipulation Checks

Service Types: Failure types: Non-Internet SST, Employee, and Procedure/policy

Cells or groups in an experiment design form from the combining independent variables; A three (Failure types: by non-Internet SST, by employee, and by procedure/policy) x two (Failure severity: severe vs. mild) design creates six cells. The

recommended minimum is 20 observations per cell (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 408). As shown in Table 4.1, all cells are above 25 observations.

To check whether or not failure type manipulations are relevant, participants rated the extent to which they agreed with the following statements: "I believe a touch screen/server/restaurant procedure was primarily involved with the problem." A seven-point Likert-type scale ranged between: 1 "strongly disagree" and 7 "strongly agree." The ANOVA results indicate that participants in the non-Internet SST failure condition reported a higher perception of fault to the non-Internet SST for service failure than their counterparts in the other two failure conditions (mean for non-Internet SST = 5.67; mean for employee = 1.61, and mean for procedure/policy = 3.85; $F = 79.37$; $p < 001$). Participants in the employee failure condition also reported a perception of greater fault for the server compared with their counterparts in the other two failure conditions (employee = 6.19; non-Internet SST = 2.13, and procedure = 2.75; $F = 103.82$; $p < 001$). Finally, the mean value for participants perceiving a procedure failure is the highest in the procedure failure condition (procedure = 6.42; non-Internet SST = 5.20, and employee = 4.69; $F = 15.34$; $p < 001$). Therefore, manipulation of service types was successful.

Table 4.1

Number of Usable Surveys in Experimental Design
(3 Failure Types x 2 Failure Severity)

	Failure Types		
Failure Severity	Non-Internet SST	Employee	Procedure
Severe	35	25	30
Mild	29	34	29

Table 4.2

Manipulation Checks for Service Failure Types

Failure Types	Perceived Failure	Mean	SD	F- Value	P- Value
Non-Internet SST	Non-Internet SST	5.67	1.86	79.37	<.001
	Employee	1.61	1.13		
	Procedure	3.85	2.20		
Employee	Non-Internet SST	2.13	1.72	103.82	<.001
	Employee	6.19	1.20		
	Procedure	2.75	1.98		
Procedure	Non-Internet SST	5.20	1.85	15.34	<.001
	Employee	4.69	2.10		
	Procedure	6.42	1.12		

Failure Severity: Severe vs. Mild

To check the manipulation regarding failure severity, statements used are: "In my opinion, the problem I encountered at the restaurant was an insignificant (1)/significant service failure (7), minor (1)/major problem (7), small (1)/big inconvenience (7), minor (1)/major aggravation (7)." The manipulation check for failure severity was also successful (severe = 5.33; mild = 4.01; F = 29.181; p<001).

Table 4.3

Manipulation Checks for Failure Severity

Failure Severity	Mean	SD	F- Value	P- Value
Severe	5.33	1.62	29.18	<.001
Mild	4.01	1.63		

Realism

The mean values for realism in the six conditions were greater than the neutral value which is 4.0, implying that scenarios for all conditions were somewhat realistic (See Table 4.4). Regarding realism, study participants perceived the scenario descriptions

to be realistic indicating that respondents easily imagined themselves as participants in the scenarios. No other significant interactions appeared. Therefore, the manipulations by the scenarios were effective.

Mean scores also reveal that respondents, in an employee failure condition, easily imagined themselves in the scenarios than any other two conditions of service failures (non-Internet SST = 5.10; employee = 5.81, and procedure/policy= 4.37). Similarly, participants who perceived mild service failure rated the realism of scenarios higher than those who exposed to severe service failure scenarios (severe = 4.82; mild = 5.36). However, the manipulation check of a procedure failure with mild service failure condition revealed a less realistic situation (M=3.92). This might be due to the scenarios' being an extreme case: "already set-up procedure for all steaks with onions" and "being deadly allergic to onions" for the procedure failure with severe service failure condition and perceived as being less realistic.

Table 4.4

Manipulation Checks for Realism

Scenario	Mean	Std. Deviation
Non-Internet SST/Severe	5.09	1.42
Non-Internet SST/Mild	5.13	1.20
Employee/Severe	5.53	1.01
Employee/Mild	6.02	0.97
Procedure/Severe	3.92	1.13
Procedure/Mild	4.83	1.15
Total	5.10	1.32

Tests of Research Hypotheses

This section presents research hypotheses that address the relationships between the variables in the proposed conceptual model.

Scale Items and Scale Reliability

This sub-section presents the results of data analysis for each research hypothesis. Reliability tests examined the measurement scales. The Cronbach's alpha reliability coefficients in Table 4.5 were .94, .78, .91, and .95 for overall dissatisfaction, complaining intent, return intent, and negative WOM, respectively. The generally agreed upon lower limit for Cronbach's alpha is .70 although it may decrease to .60 in exploratory research (Hair et al., 2006, p.137). Therefore, all used scale items except those of controllability are reliable. Cronbach's alpha of controllability is less than .60. Using only two items to measure reliability of controllability could be reason that Cronbach's alpha for the controllability is low.

Because controllability attribution consists of 2 items, only the correlation between items can be calculated. Correlation appears to be sufficient. Pearson's r was .42. Cohen (1983) suggested the following guidelines: r= .10 to .29, or r= -.10 to -.29 as small; r= .30 to .49, or r= -.30 to -.49 as medium, and r= .50 to 1.0, or r= -.50 to -1.0 as large.

Table 4.5

Scale Items and Scale Reliability

Construct	Cronbach's Alpha	Scale Items
Overall Causal Attribution	.93	To what extent do you blame the restaurant for this problem? To what extent do you hold the restaurant responsible for the problem?
Locus Attribution (2 items)	N/A	I perceive a touch screen/machine caused the problem. I perceive the server caused the problem. I perceive a restaurant procedure/policy caused the problem.
Stability Attribution (3items)	.70	The cause of the problem described is likely to be permanent. The cause of the problem described is likely to be occurring frequently. The cause of the problem described is likely to unchanging over time.

Controllability Attribution (2 items)	.56	The cause of the problem was controllable. The cause of the problem could have easily been prevented.
Overall Dissatisfaction (6 items)	.94	I feel displeased with the restaurant. I feel discontented with the restaurant. I feel unhappy with the restaurant. I feel dissatisfied with the restaurant. I feel that the restaurant did a poor job. I feel that I made a wise choice in having a meal at this restaurant.
Complaining Intent (3 items)	.78	I will discuss the problem with the manager. I will ask the restaurant to take care of the problem. I will complain to the restaurant about the problem.
Return Intent (2 items)	.91	I will return to this restaurant in the future. I will choose this restaurant again when I want this type of cuisine.
Negative Word-of-Mouth (4 items)	.95	I will warn others not to use the restaurant. I will say negative things about the restaurant to other people. I will not recommend the restaurant to others who seek my advice. I will discourage friends and relatives to do business with the restaurant.
Previous Experience (4 items)	.85	I have experienced a problem like this before. This type of problem is a common. I have had a service failure like this many times in the past. I have never had a service failure like this in the past.
Technology Anxiety (8 items)	.79	Services that use new technology are much more convenient to use. I feel confident that machines will complete the tasks according to my instructions. I enjoy the challenge of figuring out new technology. I have fewer problems with technology than my friends. It is embarrassing when I have trouble with a new technology while people are watching. Technology always seems to fail at the worst possible time. I feel apprehensive about using technology. I hesitate to use technology for fear of making mistakes I cannot correct.

Table 4.6 presents the correlations among locus, stability, and controllability attributions. The results show significant correlations among items (Pearson's r= .50, .53, and .26) for stability attribution and items (Pearson's r= .42) for the controllability variable. However, no correlations exist among each of the three elements of locus, stability, and construability attributions. Overall, obtaining the scores for each of the

variables in this study used valid measures that have previously demonstrated internal consistency. Cronbach's alpha and corrected item-to-total correlations provided validation of the reliability of each scale. All Cronbach's alpha values and corrected item-to-total correlations exceeded the respective cut-offs of .7 and .3 recommended by Nunnally (1978).

Table 4.6

Correlations[a] of Locus, Stability, and Controllability Attributions

Causal Attributions	Items	1	2	3	4	5	6	7	8	9
Locus	1.Non-intent SST	1								
	2. Employee	-.44**	1							
	3. Procedure	.13	-.29**	1						
	4. Myself	-.08	.12	-.15*	1					
Stability	5. Permanent	-.03	.08	.25**	.04	1				
	6. Frequent	.03	-.05	.31**	-.08	.50**	1			
	7. Unchanging	-.08	-.01	.13	.12	.53**	.26**	1		
Controllability	8. Controllable	-.11	.02	.09	-.05	.01	.05	.02	1	
	9. Prevented	-.13	-.05	.06	-.03	.04	.07	.07	.42**	1

[a] N=173 with Listwise deletion

** p< .01

* p < .05

Normality Measures

Before conducting final analyses, preliminary analyses identified any problematic observations or violations of assumptions. Assessment of variables for violations of assumptions included missing data, normality, and multicollinearity. The normality assumption is that the scores have a normal distribution (bell shaped) and involved using the one-sample Kolmogorov-Smirnov test. The assumption of normality was not met and data transformations were not successful in normalizing the data. In a many studies

(particularly in the social sciences), scores for the dependent variable do not form a tidy, normal distribution. With sufficiently large sample sizes (e.g., 30+), the violation of this assumption should not cause any major problem (See discussion in Gravetter & Wallnau, p 302, 2000; Stevens, 1996, p.242).

Bonferroni Correction

One way to control for the Type 1 errors in multiple tests is to use a Bonferroni adjustment. To do this, a value (typically .05) is divided by the number of tests that that were intended to perform. For three comparisons, .05 is divided by 3 (which equals .017 after rounding that would be used as the cut-off). A Bonferroni Correction applied to H1a, H1b, H2, and H3 guard against Type 1 errors. For these hypotheses, variables were considered statistically significant only if the probability level reached .017 or below.

The Effects of Service Failure Types on Causal Attributions

This study assesses the impacts of different failure types on causal attributions by testing H1a, H1b, H2, and H3.

H1a: Customers' internal attribution (self-blame) will be the lowest in a non-Internet SST failure.

First, a paired t-test compared locus attributions between external attributions for each of the three service failure types (non-Internet SST, employee, and procedure) and for internal attribution from customers themselves. Table 4.7 presents that subjects in all

three failure condition types show a tendency to assign significantly more external attribution for the service failure to each of three service failure types (non-Internet SST= 5.63; employee= 5.88; procedure= 6.42) than internal attribution to customers themselves (non-Internet SST= 1.42; employee= 2.29; procedure=1.92).

This hypothesis tests what types of service failures cause customers to rate the internal attribution lowest for the service failure. Second, a one-way between-groups ANOVA tests H1a. A Levene's test for homogeneity of variances did not violate the assumption. Table 4.8 indicates that subjects in a non-Internet SST failure condition assign the least internal attribution (self-blame) than do subjects in employee or procedure failure conditions (non-Internet SST= 1.42; employee= 2.29; procedure= 1.92). A statistically significant difference appeared at the $p < .005$ level of internal attribution for the three groups according to the three different types of service failures [(F (2, 182) = 5.91; $p < .005$)]. After applying a Bonferroni correction to H1a, this hypothesis remained statistically significant because the probability level stayed below .017. Thus, H1a is supported. As a result, customers experiencing service failure with a non-Internet SST rated internal attribution lowest for service failures compared with those experiencing service failures either by an employee or by a procedure.

Third, paired-samples t-tests indicated that the mean for participants with a non-Internet SST failure (M = 1.46) for internal attribution scores was significantly different from those with an employee failure (M = 2.29) [(t (58) = -3.11; $p < .01$], but did not significantly differ from those with a procedure failure (M = 1.92) [(t (58) = -1.86, p = .07] as shown in Table 4.9.

Table 4.7

Paired Samples t-Test of Non-Internet SST, Employee, and Procedure vs. Customer

	External Attribution Internal Attribution	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Customer	5.63 1.42	4.20	2.06	16.29	63	<.001
Pair 2	Employee Customer	5.88 2.29	3.59	2.67	10.33	58	<.001
Pair 3	Procedure Customer	6.42 1.92	4.51	2.12	16.33	58	<.001

Table 4.8 Means and Standard Deviations, One-way ANOVA of Internal Attribution

Failure Types	N	Mean	SD	df	SS	MS	F- Value	P- Value
Non-Internet SST	64	1.42	0.94	2	23.28	11.64	5.91	<.005
Employee	59	2.29	1.78					
Procedure	59	1.92	1.39					
Total	182	1.86	1.44					

DV: Locus Attribution on Customer Themselves (Internal attribution; Self-blame)

Table 4.9

Paired Samples t-Test of Non-Internet SST vs. Employee and Procedure

	Failure Types	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Employee	1.46 2.29	-.83	2.05	-3.11	58	<.01
Pair 2	Non-Internet SST Procedure	1.46 1.92	-.46	1.89	-1.86	58	.068
Pair 3	Employee Procedure	2.29 1.92	.37	2.29	1.25	58	.216

H1b: Customers' external attribution will be the highest in a non-Internet SST failure.

This hypothesis tests the types of service failures that cause customers to rate external attribution highest for a service failure. A one-way between groups ANOVA explores the impact of service failure types on external attribution. Participants who experienced a procedure failure ($M = 6.42$) rated external attribution higher than those who experienced an employee failure ($M = 5.88$). Besides, participants who experienced a non-Internet SST failure rated external attribution lowest ($M = 5.63$). Furthermore, a statistically significant difference appeared at the $p < .01$ ($p = .011$) level in external attribution scores for the three groups according to the three different types of service failures [(F (2, 182) = 4.60; p < .01)] as shown in Table 4.10. After applying a Bonferroni correction to H1b, the hypothesis remained statistically significant because the probability level stayed below .017.

Levene's test for homogeneity of variances tested whether or not the variance in scores is the same for each of the three groups. The observed significance level was .001 which violates the assumption of homogeneity of variance. Since the null hypothesis that variances are equal was rejected, the paired-samples t-test for unequal variances further tested the hypothesis. The results, shown in Table 4.11 indicate that participants with a procedure failure ($M = 6.42$) assign significantly higher external attribution scores and are different from those with a non-Internet SST failure ($M = 5.69$) [(t (58) = -2.78; p < .01]. However, the group with a non-Internet SST failure did not significantly differ from those with an employee failure ($M = 5.88$).

H1b stated that external attribution to the types of service failure will be highest for a non-Internet SST failure, but attribution was highest for a procedure/policy failure. Therefore, H1b is not supported. Consequently, customers experiencing a procedure failure rated external attribution highest for the service failure than did either those experiencing an employee failure or those experiencing a non-Internet SST failure.

Table 4.10

Means and Standard Deviations, One-way ANOVA of External Attribution

Service Types	N	Mean	SD	df	SS	MS	F- Value	P- Value
Non- Internet SST	64	5.63	1.81	2	20.23	10.11	4.60	<.01
Employee	59	5.88	1.40					
Procedure	59	6.42	1.12					
Total	182	5.97	1.51					

DV: Locus Attribution on Each Service Failure (External Attribution)

Table 4.11

Paired Samples t-Test of Non-Internet SST vs. Employee and Procedure

	Failure Types	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Employee	5.69 5.88	-.19	2.41	-.59	58	.555
Pair 2	Non-Internet SST Procedure	5.69 6.42	-.73	2.02	-2.78	58	<.01
Pair 3	Employee Procedure	5.88 6.42	-.54	1.48	-2.82	58	<.01

H2: Customers' stability attribution will be the lowest in a non-Internet SST failure.

A one-way between groups ANOVA tests H2. A Levene's test for homogeneity of variances did not violate the assumption. Table 4.12 illustrates that participants who perceived a non-Internet SST failure ($M = 3.19$) rate stability attribution lower than those who perceived service failures with either an employee or a procedure ($M = 3.36$; $M = 4.06$, respectively). A statistically significant difference exists at the $p < .005$ level in stability attribution for the three groups according to the three different types of service failures [(F (2, 182) = 6.15; p < .005)]. After applying a Bonferroni correction to H2, the hypothesis remains statistically significant with the probability level below .017.

Despite reaching statistical significance, the actual difference in means' scores between the groups was quite small. Therefore, paired-samples t-tests indicated that the mean for participants with a non-Internet SST failure ($M = 3.19$) for stability attribution scores was significantly different from those with a procedure failure ($M = 4.13$) [(t (51) = -2.79; p < .01], but the means did not differ significantly for those with an employee failure ($M = 3.23$) [(t (53) = -.61; p = .55] as shown in Table 4.13.

Thus, H2 is supported. As a result, customers experiencing service failure with a non-Internet SST rated the stability attribution lowest for service failures compared with those experiencing service failures either by an employee or by a procedure.

Table 4.12

Means and Standard Deviations, One-way ANOVA of Stability Attribution

Service Types	N	Mean	SD	df	SS	MS	F- Value	P- Value
Non-Internet SST	61	3.19	1.31	2	24.30	12.15	6.15	<.005
Employee	57	3.36	1.31					
Procedure	55	4.06	1.59					
Total	173	3.52	1.45					

DV: Stability Attribution on Each Service Failures

Table 4.13

Paired Samples t-Test of Non-Internet SST vs. Employee and Procedure

	Failure Types	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Employee	3.19 3.35	-.16	1.93	-.61	53	.55
Pair 2	Non-Internet SST Procedure	3.23 4.13	-.90	2.32	-2.79	51	<.01
Pair 3	Employee Procedure	3.33 4.03	-.69	2.20	-2.29	52	<.05

H3: Consumers' controllability attribution will be the highest in a company procedure/policy failure.

This hypothesis tests the types of service failures that cause customers to rate the controllability attribution highest. A one-way between groups ANOVA explores the impact of service failure types on controllability attribution. Participants who experienced a procedure failure ($M = 6.42$) rated the controllability attribution highest compared to either those who experienced an employee failure ($M = 6.25$) or those who encountered a non-Internet SST failure ($M = 6.02$). However, no statistically significant difference appeared for controllability attribution scores for the three groups according to the three

different types of service failures [(F (2, 181) = 2.07; p = .129)] as shown in Table 4.14. Therefore, H3 is not supported.

Table 4.14

Means and Standard Deviations, One-way ANOVA of Controllability Attribution

Service Types	N	Mean	SD	df	SS	MS	F- Value	P- Value
Non-Internet SST	63	6.02	1.12	2	5.14	2.57	2.07	.129
Employee	59	6.25	1.21					
Procedure	59	6.42	1.00					
Total	181	6.23	1.12					

DV: Controllability Attribution on Each Service Failures

Table 4.15

Paired Samples t-Test of Procedure vs. Non-Internet SST and Employee

	Failure Types	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Employee	6.00 6.24	-.24	1.45	-1.27	57	.210
Pair 2	Non-Internet SST Procedure	6.00 6.46	-.46	1.34	-2.60	57	<.05
Pair 3	Employee Procedure	6.25 6.42	-.17	1.65	-.80	58	.432

The Effects of Service Failure Types on Overall Causal Attribution

The following hypothesis probed the impacts of different failure types on overall causal attribution.

H4: Customers' overall causal attribution to a firm will be the lowest in an employee failure.

In addition, a one-way between groups ANOVA explored the impact of service failure types on overall causal attribution of the restaurant. Participants who experienced procedure failure ($M = 6.34$) rated overall causal attribution higher than those who experienced a non-Internet SST failure ($M = 6.05$). Furthermore, participants who experienced an employee failure rated the overall causal attribution lowest ($M = 4.81$). A statistically significant difference appeared at the $p < .001$ level in overall causal attribution scores for the three groups according to the three different types of service failures [(F (2, 182) = 20.86; p < .001)] as shown in Table 4.16. After applying a Bonferroni correction, the hypothesis remains statistically significant because the probability level stayed below .017. Therefore, H4 is supported.

Levene's test for homogeneity of variances tested whether or not the variance in scores is the same for each of the three groups. The observed significance level is .001 which violates the assumption of homogeneity of variance. Since the null hypothesis asserts that variances are equal was rejected, the paired-samples t-test for unequal variances further tested the hypothesis. The results in Table 4.17 show that participants with a procedure failure ($M = 6.34$) in overall causal attribution scores was significantly higher and different from those with an employee failure ($M = 4.81$) [(t (58) = -5.70; p < .001]. Participants with a non-Internet SST failure ($M = 6.02$) in overall causal attribution scores was significantly higher and different from those with an employee

failure ($M = 4.81$) [(t (58) = 4.68; $p < .001$]. However, the group with a non-Internet SST failure ($M = 6.02$) did not significantly differ from those with a procedure failure ($M = 6.34$).

Table 4.16

Means and Standard Deviations, One-way ANOVA of Overall Causal Attribution

Service Types	N	Mean	SD	df	SS	MS	F- Value	P- Value
Non-Internet SST	64	6.05	1.27	2	77.83	38.92	20.86	<.001
Employee	59	4.81	1.73					
Procedure	59	6.34	1.00					
Total	182	5.74	1.51					

DV: Overall Causal Attribution on Restaurant

Table 4.17

Paired Samples t-Test of Employee vs. Non-Internet SST and Procedure

	Failure Types	Mean	Paired Difference	SD	t- Value	df	P- Value
Pair 1	Non-Internet SST Employee	6.02 4.81	1.20	1.97	4.68	58	<.001
Pair 2	Non-Internet SST Procedure	6.02 6.34	-.32	1.77	-1.40	58	.167
Pair 3	Employee Procedure	4.81 6.34	-1.53	2.06	-5.70	58	<.001

The Effects of Failure Severity on Overall Causal Attribution

Investigation of Hypothesis H5 analyzed the impacts of failure severity on overall causal attribution.

H5: Customers experiencing severe service failures will assign more overall causal attribution to firms than do customers experiencing mild service failures.

In order to separate the respondents who perceived a severe service failure from the respondents who perceived a mild service failure, splitting based on a median split (Median = 5) produced two groups.

H5 was supported [(F (1, 180) = 16.95; p < .001)] as exhibited in Table 4.18. The mean score of overall causal attribution from perceived severe service failure was 6.21, while customers who perceived a mild service failure scored 5.32 on the seven-point scale. Thus, customers who perceived a severe service failure assigned more overall causal attribution to firms than customers who perceived a mild service failure.

Table 4.18

Means and Standard Deviations, One-way ANOVA of Overall Causal Attribution

Failure Severity	N	Mean	SD	df	SS	MS	F- Value	P- Value
Mild	98	5.32	1.68	1	35.52	35.52	16.95	<.001
Severe	82	6.21	1.10					
Total	180	5.73	1.51					

The Effects of Causal Attributions on Expected Recovery

The following research hypotheses examine the impact of causal attributions on expected recovery.

H6a: When locus attribution is high, customers more frequently expect an apology as service recovery than either a refund or the need to complain.

This hypothesis addresses customers' expected recovery following service failures when locus attribution is high. In order to separate the respondents who perceived a greater external attribution from the respondents who perceived a lesser external attribution, a split based on a median split (Median = 6) produced two groups.

The group who assigned high external attribution was the basis for investigation, and then the paired-samples t-test between expected recoveries (apology, refund, and complaint) was used. Table 4.19 demonstrates that the mean of the apology for expected recovery (M = 5.87) was significantly higher than either those of a refund (M = 3.84) [(t (129) = 9.80; p < .001] or a complaint (M = 4.96) [(t (129) = 4.33; p < .001]. Thus, H 6a is supported. Therefore, customers expect an apology more frequently than a refund or the need to complain when their locus attribution is high.

Table 4.19

Means and Standard Deviations, Paired Samples t-Test for Expected Recovery

	Expected Recovery	N	Mean	SD	df	SD	M	t- Value	P- Value
Pair 1	Apology-Refund	129	5.87	1.52	128	2.36	2.03	9.80	<.001
		129	3.84	2.03					
Pair 2	Apology-Complaint	129	5.87	1.52	128	2.38	0.91	4.33	<.001
		129	4.96	1.95					
Pair 3	Refund-Complaint	128	3.83	2.04	127	2.38	-1.12	-5.32	<.001
		128	4.95	1.95					

H6b: When stability attribution is high, customers more frequently expect a refund as service recovery than the need to complain.

In order to separate the respondents who perceived a high stability attribution from the respondents who perceived a low stability attribution, a split based on a median (Median = 4) produced two groups.

The group who assigned high stability attribution was only used to examine H6b, and then the paired-samples t-test between expected recoveries was performed. Table 4.20 indicates that a refund for expected recovery ($M = 3.75$) was significantly lower than either an apology ($M = 5.89$) [(t (72) = -8.17; $p < .001$] or a complaining intent ($M = 5.00$) [(t (72) = -5.13; $p < .001$], the opposite direction of the hypothesis. Thus, H 6b is not supported. Consequently, customers seem to expect an apology no matter the attribution, and then customers have a complaining intent for service recovery more than they expect a refund when stability attribution is high.

Table 4.20

Means and Standard Deviations, Paired Samples t-Test for Expected Recovery

	Expected Recovery	N	Mean	SD	df	SD	M	t- Value	P- Value
Pair 1	Refund-Complaint	72 72	3.75 5.00	2.13 2.01	71	2.07	-1.25	-5.13	<.001
Pair 2	Refund-Apology	72 72	3.75 5.89	2.13 1.26	71	2.22	-2.14	-8.17	<.001
Pair 3	Apology-Complaint	72 72	5.89 5.00	1.26 2.01	71	2.09	0.89	3.62	<.001

H6c: When controllability attribution is high, customers are more likely to complain as service recovery, than feel the need for a refund.

In order to separate the respondents who perceived a high controllability attribution from the respondents who perceived a low controllability attribution, a split based on a median (Median=6) produced two groups.

The group who assigned high controllability attribution was only used to investigate the high controllability attribution, and then the paired-samples t-test between expected recoveries was used. Table 4.21 presents that the mean of the complaining intent for expected recovery ($M = 4.85$) was significantly higher than that of the refund ($M = 3.72$) [(t (158) = -1.13; $p < .001$]. Thus, H 6c is supported. On the other hand, the mean of the complaining intent for expected recovery ($M = 4.85$) was significantly lower in frequency than that of the apology ($M = 5.81$) [(t (160) = 5.16; $p < .001$]. This further supports the notion that an apology for expected recovery is basic and needed no matter what types of attribution are applied, because an apology was had the highest frequency in all three conditions.

Table 4.21

Means and Standard Deviations, Paired Samples t-Test for Expected Recovery

	Expected Recovery	N	Mean	SD	df	SD	M	t- Value	P- Value
Pair 1	Complaint-Refund	158	4.85	1.91	157	2.40	-1.13	-5.93	<.001
		158	3.72	1.96					
Pair 2	Complaint-Apology	160	4.88	1.91	159	2.28	.93	5.16	<.001
		160	5.81	1.46					
Pair 3	Apology-Refund	159	5.81	1.47	158	2.29	2.08	11.45	<.001
		159	3.73	1.96					

The family-wise error rate was controlled with a Bonferroni test. If Bonferroni correction is used for 3 comparisons, with a family-wise error rate of .05, and thus applies each test at the .05/3 = .017 level. Using this approach, the difference among variables in H6a, H6b, and H6c is significant.

The Effects of Causal Attribution on Overall Evaluations

H7a: Customers' causal attributions positively relate to overall dissatisfaction with the firm.

Hierarchical multiple regression analysis determined the relationship between causal attributions and overall dissatisfaction. In the analysis, overall dissatisfaction represented a dependent variable; locus, stability, and controllability attributions were independent variables. As shown in Table 4.22, customers' locus and stability attributions significantly and positively influence overall dissatisfaction in Regression Model 1. On the other hand, the results of the analyses present that controllability attribution in Model 2 also positively influences overall dissatisfaction, but it is not statistically significant. Therefore, of these two variables, locus attribution provides a larger unique contribution (beta = .51), although stability attribution also provides a statistically significant contribution (beta = .19). On the other hand, the controllability attribution has not unique contribution, as shown in Model 2. As a consequence, H7a is partly supported.

Table 4.22

Hierarchical Multiple Regression for Relationship between Casual Attributions and Overall Dissatisfaction

Model	Causal Attributions	Unstandardized β Coefficients	Standardized β Coefficient	Sig.
1	Locus	.500	.509	<.005
	Stability	.196	.191	<.05
2	Locus	.491	.499	<.005
	Stability	.194	.189	<.005
	Controllability	.115	.087	.17

IV: Locus, Stability, Controllability
DV: Dissatisfaction

H7b: Customers' causal attributions positively relate to both complaining intent and negative WOM to the firm.

Hierarchical multiple regression analysis also tested H7b. In the analysis, overall complaining intent was the dependent variable; locus, stability, and controllability attributions were independent variables. Locus attribution produced the greatest unique contribution (beta = .45), whereas, stability and controllability attributions provide no significant contributions, as shown in Model 2. As a consequence, H7b is partly supported.

Table 4.23

Hierarchical Multiple Regression for Relationship between Casual Attributions and Complaining Intent

Model	Causal Attributions	Unstandardized β Coefficients	Standardized β Coefficient	Sig.
1	Locus	.435	.445	<.001
2	Locus	.417	.427	<.001
	Stability	.047	.046	.52
	Controllability	.066	.050	.47

IV: Locus, Stability, Controllability
DV: Complaining Intent

To probe the relationship between casual attributions and negative WOM, negative WOM was tested as the dependent variable while the independent variables were the same as in H7a; locus, stability, and controllability. Similar to the result of analysis for the effects of causal attributions on overall dissatisfaction, customers' locus and stability attributions significantly and positively influence negative WOM in Regression Model 1. On the other hand, controllability attribution in Model 2 also positively influences negative WOM, but it is statistically insignificant. Therefore, of the two remaining variables, stability attribution provides a greater unique contribution (beta = .34), although locus attribution also made a statistically significant contribution (beta = .29). However, controllability attribution provides no unique contribution as shown in Model 2. Thus, H7b is partly supported.

Table 4.24

Hierarchical Multiple Regression for Relationship between Casual Attributions and Negative WOM

Model	Causal Attributions	Unstandardized β Coefficients	Standardized β Coefficient	Sig.
1	Locus	.335	.298	<.001
	Stability	.399	.340	<.001
2	Locus	.325	.289	<.001
	Stability	.396	.338	<.001
	Controllability	.122	.081	.23

IV: Locus, Stability, Controllability
DV: Negative WOM

H7c: Customers' causal attributions negatively relate to return intent to the firm.

Hierarchical multiple regression analysis determined the relationship between causal attributions and return intent. Accordingly, return intent was the dependent

variable; the independent variables were the same as in H7a and H7b. Of these two independent variables, stability attribution produced a greater unique contribution (beta = -.20), and locus attribution also produces a statistically significant contribution (beta = -.17). Both locus and stability attributions produce negative contributions. Finally, controllability attribution produces no unique contribution as shown in Model 2. Therefore, H7c is partly supported.

In all these hypotheses, H7a, H7b, and H7c, the controllability attribution was insignificant.

Table 4.25

Hierarchical Multiple Regression for Relationship between Casual Attributions and Return Intent

Model	Causal Attributions	Unstandardized β Coefficients	Standardized β Coefficient	Sig.
1	Locus	-.183	-.172	<.02
	Stability	-.224	-.202	<.01
2	Locus	-.178	-.167	<.03
	Stability	-.223	-.201	<.01
	Controllability	-.060	-.042	.57

IV: Locus, Stability, Controllability
DV: Return Intent

The Moderating Effects of Previous Experience on the Relationship between Failure Types and Overall Causal Attribution

H8a: Previous failure experience moderates the relationship between service failure types and overall causal attribution.

In order to separate the respondents who perceived more numbers of previous failure experience from the respondents who perceived less numbers of previous failure

experience, a split based on a median (Median = 4) produced two groups. Two-way ANOVA explored the moderating effects of previous failure experience on the relationship between service failure types and overall causal attribution. In the analysis, overall causal attribution was the dependent variable; service failure types and previous failure experience were the independent variables. Table 4.26 shows that the main effects of failure types are statistically significant, [F (2, 180) = 14.99; $p < .001$], but no main effects appeared for previous failure experience on overall causal attribution and no significant interaction effects appeared between failure types and previous failure experience. As a consequence, H8a is not supported.

Table 4.26

Two-Way ANOVA for Moderating Effects of Previous Experience on the Relationship between Service Failure Types and Overall Causal Attribution

Source	df	SS	MS	F	P	Partial Eta Squared
Failure Types	2	56.56	28.28	14.99	.000	.147
Previous Failure Experience	1	4.10	4.10	2.17	.142	.012
FT x PFE	2	0.55	0.28	0.15	.864	.002
Error	174	328.38	1.887			
Total	180	6314.00				

IV: Service Failure Types, Previous Failure Experience
DV: Overall Causal Attribution
Note: FT= Failure Types; PFE= Previous Failure Experience

H8b: Previous failure experience moderates the relationship between failure severity and overall causal attribution.

In order to separate the respondents who perceived a more numbers of previous failure experience from the respondents who perceived less numbers of previous failure experience, a split based on a median (Median = 4) produced two groups. Two-way

ANOVA explored the moderating effects of previous failure experience with the different types of services on the relationship between failure severity and overall causal attribution. In the analysis, overall causal attribution was the dependent variable; failure severity and previous failure experience were the independent variables. Table 4.27 indicates that the main effects of failure severity and previous failure experience are statistically significant, [F (1, 178) = 7.55; p < .001; F (1, 178) = 10.60; p < .005, respectively], but no significant interaction effects appeared between failure severity and previous failure experience, [F (1, 178) = 1.71, *p* = .19). As a result, H8b is not supported.

Table 4.27

Two-Way ANOVA for Moderating Effects of Previous Experience on the Relationship between Failure Severity and Overall Causal Attribution

Source	df	SS	MS	F	P	Partial Eta Squared
Failure Severity	1	15.84	15.84	7.55	.007	.042
Previous Failure Experience	1	22.24	22.24	10.60	.001	.057
FS x PFE	1	3.583	3.58	1.71	.193	.010
Error	174	365.01	2.10			
Total	178	6216.00				

IV: Failure Severity, Previous Failure Experience
DV: Overall Causal Attribution
Note: FS= Failure Severity; PFE= Previous Failure Experience

H9: Technology anxiety moderates the relationship between service failure types and overall causal attribution.

Two-way ANOVA analysis explored the moderating effects of technology anxiety on the relationship between failure types and overall causal attribution. In the analysis, overall causal attribution was the dependent variable; failure types and technology

anxiety were the independent variables. In order to separate the respondents who perceived more technology anxiety from the respondents who perceived less technology anxiety, a split on a median (Median=4) produced two groups.

Apparently from Table 4.28, statistically significant differences exist between the service failure group types. However, the differences between the low and high technology anxiety groups are not statistically significant. No interaction effect appeared in the two-way ANOVA. Thus, H9 is not supported

Table 4.28

Two-Way ANOVA for Moderating Effects of Technology Anxiety on the Relationship between Service Failure Types and Overall Causal Attribution

Source	df	SS	MS	F	P	Partial Eta Squared
Failure Types	2	78.68	39.34	21.14	.000	.194
Technology Anxiety	1	1.35	1.35	0.73	.395	.004
FT x TA	2	4.82	2.41	1.29	.277	.014
Error	176	327.48	1.86			
Total	182	6412.00				

IV: Service Failure Types, Technology Anxiety
DV: Overall Causal Attribution
Note: FT= Failure Types; TA= Technology Anxiety

Summary of Major Findings

Table 4.29
Summary of Hypotheses Testing Results

	Hypotheses	
H1a	Customers' internal attribution will be the lowest in a non-Internet SST failure.	**S**
H1b	Customers' external attribution will be the highest in a non-Internet SST failure.	**NS**
H2	Customers' stability attribution will be the lowest in a non-Internet SST failure.	**S**
H3	Customers' controllability attribution will be the highest in a company procedure/policy failure.	**NS**
H4	Customers' overall causal attribution to a firm will be the lowest in an employee failure.	**S**
H5	Customers experiencing severe service failures will assign more overall causal attribution to firms than do customers experiencing mild service failures.	**S**
H6a	When locus attribution is high, customers more frequently expect an apology as service recovery than either a refund or the need to complain.	**S**
H6b	When stability attribution is high, customers more frequently expect a refund as service recovery than the need to complain.	**NS**
H6c	When controllability attribution is high, customers are more likely to complain as service recovery, than feel the need for a refund.	**S**
H7a	Customers' causal attributions positively relate to overall dissatisfaction with the firm.	**PS**
H7b	Customers' causal attributions positively relate to both complaining intent and negative WOM to the firm.	**PS**
H7c	Customers' causal attributions negatively relate to return intent to the firm.	**PS**
H8a	Previous failure experience moderates the relationship between service failure types and overall causal attribution.	**NS**
H8b	Previous failure experience moderates the relationship between failure severity and overall causal attribution.	**NS**
H9	Technology anxiety moderates the relationship between service failure types and overall causal attribution.	**NS**

S = Supported; NS= Not Supported; PS= Partially Supported

Note: Definitions

- Service Failure Types: Non-Internet SST, employee, and company procedure/policy failures.
- Failure Severity: Severe and mild service failures.
- Causal Attributions: Locus (internal and external), stability, controllability attributions.
- Locus Attribution: Extent of internal attribution on customer themselves vs. extent of external attributions on non-Internet SST, employee, and company procedure failures.
- Stability Attribution: Cause as being temporary or permanent.
- Controllability Attribution: Causes of failures are considered to be under the volition of an organization.
- Overall Causal Attribution: Overall blame or responsibility on a company
- Expected Recovery: Apology, refund, and complaint.
- Overall Evaluation: Overall Dissatisfaction, complaining intent, negative WOM, and return intent.
- Previous Failure Experience: Previous experience with three different types of service failure.
- Technology Anxiety: Level of anxiety experienced by an individual decision to use a technological innovation

CHAPTER 5

CONLUSION, DISCUSSION, AND LIMITATIONS

This chapter summarizes the research through (1) conclusions and discussion, (2) contributions, (3) limitations, and (4) managerial implications.

Conclusions and Discussion

Discussion of the major findings from hypotheses testing use the developed model as a basis.

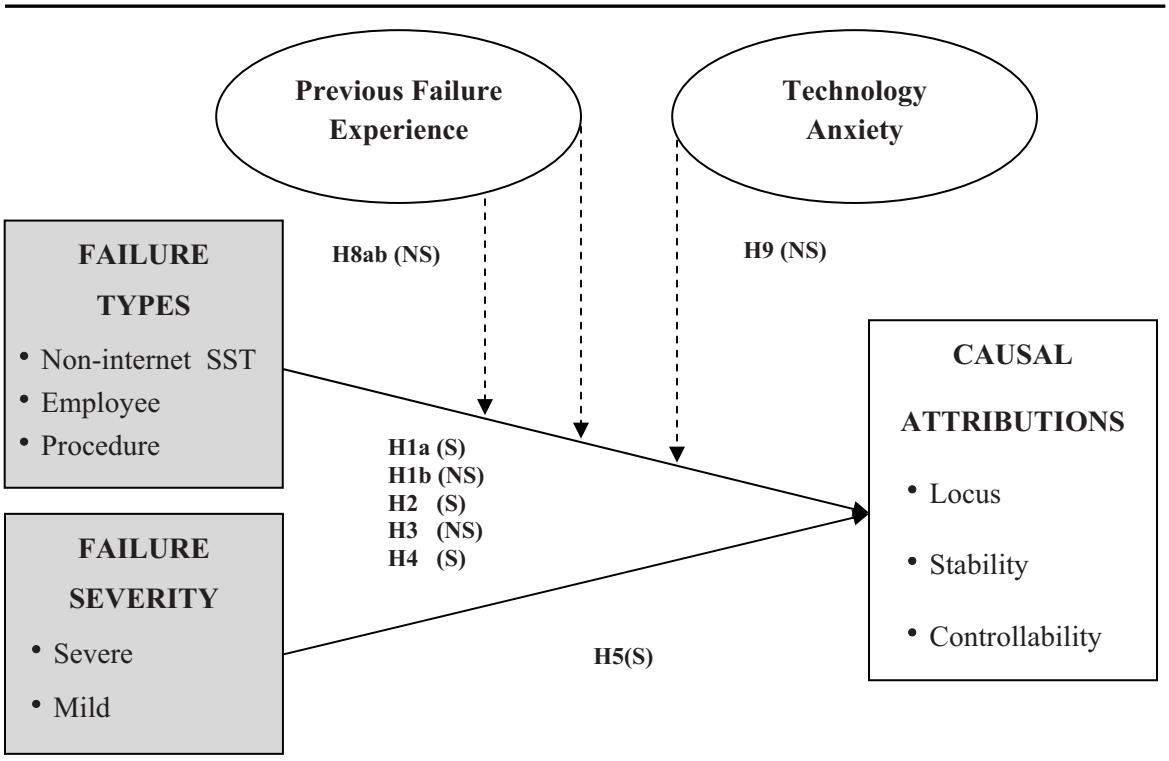

FIGURE 5.1 Developed Model for the Effects of Service Failure Types and Failure Severity on Causal Attributions

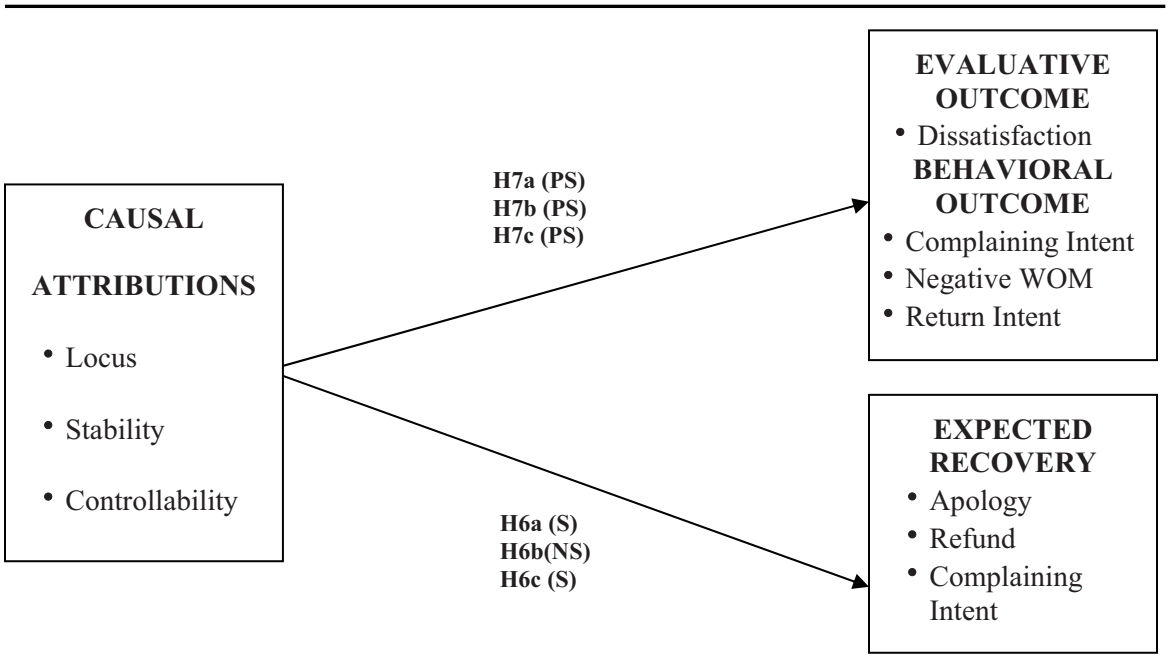

FIGURE 5.2 Developed Model for the Effects of Causal Attributions on Evaluations and Expected Recovery

Discussion of the Hypotheses Testing Results

The Effects of Service Failure Types on Causal Attributions

The first question for this research involves customers' differing perceptions of service failures by interpersonal services versus by non-Internet SSTs. Of interest in this study is whether or not a self-serving bias has an impact on locus attribution in the context of service failure. A self-serving bias (individuals' tendency to assume more personal responsibility for a success than for a failure outcome, Bradley, 1978) influences locus attribution in the context of service failure because customers assign more external attribution to three types of service failures (external causes) than internal attribution to the customers themselves (internal causes). Moreover, a remaining consideration is whether or not levels of consumers' participation affect the degree to which they blame themselves, as opposed to a firm, its employees, or its adapted technology (non-Internet

SST) following a service failure. Among three failure types, customers using non-Internet SSTs have the highest customer participation in service delivery. Interestingly, customers assign the least internal attribution to non-Internet SST failures. In other words, customers' self-blame is lowest in a non-Internet SST failure. This could have important managerial implications as companies develop new SSTs and struggle with service encounter failures. This finding further emphasizes the need to prevent service failures in non-Internet SST encounters and educate customers on their roles as participants; otherwise, customers are unlikely to share in the blame if the service fails.

The results of H1b show that perceptions of external attribution for service failure by a procedure are highest compared with those for service failures by an employee and by a non-Internet SST. Therefore, customers' external attribution is highest in a procedure failure, and their internal attribution is lowest in a non-Internet SST encounter.

Second, H2 investigated how different service failure types (non-Internet SST, employee, and procedure) affect stability attribution. According to the findings of the results, customers' stability attribution for service failures is lowest in a non-Internet SST failure compared with the other two groups. Specifically, consumers considered the non-Internet SST failure as an infrequently occurring cause while they regarded a procedure failure as a repeated problem. Causes also differ by degree of stability: some failures are temporary or erratic, while others are permanent or constant over time (Weiner, 1985). Based on the finding from H2, a non-Internet SST problem is perceived as a temporary cause while a procedure/policy related failure is viewed as a permanent cause of the problem. With respect to the controllability attribution, H3, there was no statistically significant difference in customers' controllability attribution among three failure groups.

To sum, customers rated all external, stability, and controllability attributions the highest in a procedure failure and the lowest in a non-Internet failure among three failure types. Thus, customers made the highest external attribution in the procedure failure and viewed it as the most permanent and preventable problem when compared with any other service failures such as non-Internet SST and employee failures. On the other hand, they made the lowest self-blame in a non-Internet SST failure and considered it as the most temporary and the least controllable cause. In short, customers made the highest causal attributions in the procedure failure among three failure types. However, there were no significant different levels of customers' causal attributions (external, stability, and controllability attributions) between in a non-Internet SST failure and in an employee failure. Consequently, customers do not perceive causal attributions differently on failures by a non-Internet SST and by an employee. The result of the finding might recommend to managers that they should test the procedure/policy with customers as to whether they like it or not and see if it is acceptable to them before the managers put it into practice. Once it is set up and a problem occurs, then it could be perceived as a "forever" problem.

The Effects of Service Failure Types on Overall Causal Attribution (Blame) of Company

When it comes to overall causal attribution (H4), which is more related to blame and responsibility of the company as whole, rather than the matter of failure type itself, customers still perceive the overall causal attribution of the company in a procedure failure the highest. According to the results of H1, H2, and H3 (external, stability, and

controllability attribution on each failure type), customer's causal attributions are the highest in a procedure failure. If people viewed a procedure failure as more external, stable, and controllable cause of problem, then it seems natural that they blame the company more in a procedure failure than in any other failures.

Interestingly, customers' causal attributions on each service failure itself differed from their overall causal attribution on the company. That is to say that customer's perceptions on the characteristics of each failure were different from their overall blame on the firm following three service failures. As shown from H1, H2, and H3, there were no significant different levels of customers' causal attributions (external, stability, and controllability attributions) between in a non-Internet SST failure and in an employee failure. The different level of three causal attributions among three failure types tested by H1, H2, and H3 might represent customers' distinctions about the characteristics of each failure type. On the other hand, customers do not distinguish causal attributions (external, stability, and controllability) on a technology failure from those on an interpersonal failure.

However, the customers experiencing a non-Internet SST failure made higher overall causal attribution (blame and responsibility) on the company than those experiencing an employee failure. Consequently, when customer thought about the overall responsibility of the company on the service failure rather than extinguishing the characteristics of each failure, they are more likely to blame on the company in a non-Internet SST failure than in an employee failure. In other words, when it comes to customers' perceptions about the company's management, they are more likely to blame on the company when it went wrong with the technology than when human made

mistakes for the service. They might think that an employee failure is more uncontrollable by the company than a non-Internet SST failure

For that reason, managers should check periodically the non-Internet SSTs once they implemented it. The shorter the interval of the periodic check is, the better it will be for managers to reduce the errors and possibly eliminate them all together. Companies can have systems in place that monitor if and how an SST is functioning which will help them prevent failures before they happen and/or provide real-time service recovery for customers as they interact with an SST.

The Effects of Failure Severity on Overall Causal Attribution

This study also examined how the failure severity impacts customers' overall causal attribution for the service failure. In the results, consumers engaging with severe service failures were more likely to put overall causal attribution on firms than those facing mild service failures.

Unlike previous studies, the current study focuses on the severity construct to determine its influence on blame attribution. As the service problem becomes more severe, the customers' tolerance zone gets narrower, thus increasing the potential for customer dissatisfaction (Gilly & Gelb, 1982; Hoffman et al., 1995). Researchers have warned about the strong negative impact of a critical service mistake on customer's future relationships with a service organization (Bell & Zemke, 1987; Berry & Parasuraman, 1991). In a study of service switching behavior, Keaveney (1995) found that a single catastrophe is one of the primary factors causing customers to switch service providers. If consumers perceive a service failure to be more severe, they may be more

likely to blame the company. Alternatively, if consumers perceive a service failure to be less severe, they may be less likely to blame the firm. The theoretical contribution is that there are some studies about the effects of failure severity on overall evaluation and recovery but few studies have been done on the effects of failure severity on causal attributions and show that the magnitude of service failure influences the overall blame on the company.

In addition to the theoretical contribution to the literature of establishing the link between perceived failure severity and consumers' overall causal attribution, these findings have several important practical implications for companies.

The reason that customer feel more of failure severity in a non-Internet SST than in an employee failure might be directly related to the availability of a chance to fix the problem. When customers encountered the non-Internet SST failure, they probably look for a person to fix it. If they are with a human service already, then they might feel less severe failure because there is a person to address the problem and fix it. Once a SST failure happens, customers' failure severity level will increase, and they will blame a company more. Therefore, the best strategy for managers is to try to eliminate the errors of non-Internet SST, but if failures happen, then human assistance should be always available to address the problem.

The Effects of Causal Attributions on Expected Recovery

For the expected recovery following service failures, this research first investigate how causal attributions influence recovery expectations.

As stated in the results of H6a, customers expect an apology for service recovery more than any other recovery such as a refund or a complaining intent when the level of locus attribution is high. An apology for recovery expectation is shown to be a basic service recovery condition which is always needed no matter what types of attributions are applied because an apology was always the most expected recovery in all three causal attributions conditions.

Secondly, customers seem to need to extend a complaining intent for service recovery more than they expect a refund when the stability attribution is high. Third, H6c presents that a complaining intent for expected recovery was significantly higher than a refund when the controllability attribution is high. Management should therefore make themselves available to listen to customer complaints and offer an apology. It is also important that management be aware of this need by the customer to voice their complaint, give customers the opportunity and time to complain, and for management to listen more than make excuses. Managers should also remember that when a customer complains, they often are looking to help the management fix the problem (Cranage & Mattila, 2006).

Locus was correlated with receiving an apology, stability was correlated with type of redress preferred, and restaurant controllability was correlated with feeling of anger and desire to hurt the restaurant's business (Folkes, 1984). Considering multiple possible additional determinants of consumer reactions, the precise relationship between causal attributions and consumer reactions was difficult to ascertain using correlations in terms of methodology in Folkes's study (1984). This study supports previous studies with more rigorous methods, that customers expect an apology the most when locus attribution is

high, extend a complaining intent more than a refund for service recovery when the stability attribution and the controllability attribution is high.

In sum, customers expect an apology the most, try to complain the second, and expect the refund the least for the expected recovery no matter what kinds of causal attributions are influenced. It might not be a matter of level of causal attribution's effects on expected recovery but a sequence of solving the problems. When they encountered service failures, customers expect an apology first, try to complain to fix the problems and then see the possibility of refund based on corrections of problems. But management should keep in mind, that when it comes to refunds, customers might be reluctant or even too shy to ask for a refund, so management should know when it is appropriate to offer a refund (Cranage & Mattila, 2006).

This study provides some managerial implications for managers in dealing with recovery strategies. It is crucial to remember that the success of a particular recovery effort may depend on the type of service failure that has occurred. Smith, Bolton, and Wagner (1999) propose that attributes of the recovery effort need to be matched to the specific failure incident including the type and magnitude of failure. Therefore, organizations need to identify the type of failure that has occurred, keeping in mind that it may not be necessary to distribute monetary compensation for a successful recovery effort.

The Effects of Causal Attributions on Overall Evaluations of Company

As for the effects of causal attributions on overall evaluations, this study found the relationships between causal attributions and overall assessments of firms such as

overall dissatisfaction, complaining intent, negative WOM, and return intent. The overall causal attribution on a firm was positively related to overall dissatisfaction, complaining intent, and negative WOM and also negatively related to return intent.

However, when the effects of each causal attribution (locus, stability, and controllability) of failure characteristics on evaluations of the company were investigated, customers' causal attributions were positively related to overall dissatisfaction, complaining intent, and negative WOM and was also negatively related to return intent to the firm with different contributions of each causal attribution.

The results of the analyses presented that, of the three causal attributions, locus attribution and stability attribution strongly influenced overall dissatisfaction. In other words, the more locus attribution customers have on firms and the more they perceive frequent service failures, the more dissatisfied they are. As shown from the result, locus attribution made the larger contribution than stability attribution. The cause of problem might be a main attribution on dissatisfaction.

As for the effects of causal attributions on complaining intent, the finding of results presented that only locus attribution makes a strong impact on complaining intent. The findings show that "who" made a mistake might be directly related to whom to blame and complain about. Therefore, who made mistake is more important than whether the failure is stable or controllable for complaining intent.

The effects of causal attributions on negative WOM, similar to overall dissatisfaction, locus and stability attributions also strongly influenced negative WOM. That means that the customers perceiving more locus attribution and those perceiving a repeated service failure are more likely to say negative WOM to the others. The results

suggest, both locus and stability attribution made equal contribution on negative WOM. Both locus and stability attribution are important for negative WOM.

As to the relationship between causal attributions and return intent, locus and stability attributions also made a statistically significant contribution on return intent. It seems that the more customers perceive locus attribution and a repeated service failure, the less they are likely to return for the services. Based on findings, stability attribution made the larger contribution than locus attribution. Therefore understandably, once customers perceive stable failures, they are less likely to return.

Finally, there are positive relationships between causal attributions and overall evaluations such as dissatisfaction, complaining intent, negative WOM. There is negative relationship between causal attributions and return intent. However, there was no controllability attribution effect on any of evaluations of the company.

As shown from the results, the cause of the problem is the main attribution on dissatisfaction. Therefore, for effective service recovery, managers should find a cause of the problem first, address it, and try to fix it to decrease customers' dissatisfaction.

As for the effects of causal attributions on complaining intent, once something goes wrong, it might be a basic process for managers to listen to the customer to find the cause of the problem, address it, and try to fix to reduce customer's complaint. Furthermore, listening to the customers' complaint on the failure and making various complaining channel available at their convenience might be another important strategy for the company.

On the effects of causal attributions on negative WOM, if customers know a cause of problem and perceive it as a stable problem, they are more likely to convey negative

WOM to other people. Addressing stable problems regularly and correcting them is necessary for managers to decrease negative WOM.

As to the relationship between causal attributions and return intent, it seems natural that once customers perceive repeated service failure, then they do not return for the services. Managers should be aware of how serious stable problems influence return intent. As recommended above, addressing stable problems regularly and correcting those are necessary for managers to increase return intent.

The Moderating Effects of Previous Experience and Technology Anxiety on the Relationships between Failure Types and Overall Causal Attribution

The tests for the moderating effects of previous experience and technology anxiety on the relationship between failure types and overall causal attribution were conducted. There were no significant moderating effects of previous experience with different types of service failures and technology anxiety on the relationships between failure types and overall causal attribution. Even though this is a counter result to what one might expect, future research should look at this because no significance was found.

Contributions

This study has built a conceptual framework of the consumers' causal attributions, expected recovery, and overall evaluations for different service types of failures. Empirical support has been provided for this integration of attribution theory and expected recovery in the service failure literature. Regarding the attribution concept in the current study, this might be the first study to examine all three causal attributions,

locus, stability, and controllability attributions. Furthermore, the current study has identified the similarities and differences among consumers' causal attributions across three service failure types, non-Internet SSTs, employee, and company procedure/policy.

A second contribution of this study is its extension to the environment in which the service encounter takes place. Few, if any, studies directly compare three service failure types. This study has provided empirical evidence that customers put different levels of causal attributions on three service failure types, technology-based service, interpersonal service, and company procedure.

This study also contributes to the satisfaction and recovery literature by identifying differences on overall evaluations of the company. It also completes the chain by offering empirical evidence regarding evaluative (dissatisfaction) and behavioral outcome (complaining intent, negative WOM, and return intent).

Unlike previous studies, the current study focuses on the severity construct to determine its influence on overall causal attribution. Theoretical contribution is that there are some studies about the effects of failure severity on overall evaluation and recovery but few studies have been done the effects of failure severity on overall causal attribution and prove that the level of failure severity influence the overall causal attribution on the company.

Limitations

While this study makes a contribution towards understanding the customers' causal attributions, expected recovery, and overall evaluation on different service failure types, there are limitations to this study. Staff members of a university were surveyed in

this study. This group of participants has some unique characteristics such as gender (predominately female) and low or average incomes so they may have different causal attribution and expectations than other groups of customers in terms of restaurant services setting. Therefore, the results of this study may not be generalized beyond the sampled population of this study.

Another limitation lies in the fact the experiment was scenario-based. The findings may not accurately reflect what happens following true service transactions since respondents were asked to report on predicted rather than actual behavior. Scenarios have a tendency to soften strong feelings that may occur in real life situations. Different methodologies might be utilized to confirm the current conceptual framework and possible extend the conclusions of this study.

More specifically, the use of an experimental design is subject to inherent limitations pertaining to a possible lack of realism. Especially, even though the results of the manipulation checks were shown to be successful, the mean for the realism of procedure failure with severe service failure (M= 3.92) was somewhat lower than the other conditions. The scenario of procedure failure (e.g., steaks served with onions) with severe failure (e.g., deadly allergic to onion) might be extreme or a rare case that customer can experience decreasing realism and affecting the way in which respondents react.

Managerial Implications

The results from this study offer a number of implications for service firms.

Three kinds of dominant interactions are introduced: customer-to-technology, customer-to-employee, and customer-to-company. First, it is important for managers to define their services in terms of the dominant service interactions. Second, managers should understand customers' causal attributions and overall causal attribution (blame) when failures occur. Third, managers should develop recovery strategies using the paired criteria approach to capture customer experiences during service interactions.

This research clarified differences of the customer's perceptions on causal attributions and recovery expectation between failure by interpersonal service and that by non-Internet SSTs. For managers, the results suggest clear characteristics of both failure types and customers' reactions and perceptions following service failure before developing recovery strategies that might be appropriate for each failure type (non-Internet SST failure, employee failure, and procedure failure).

The analysis of failures and recovery strategies is beneficial to organizations as it allows management to identify improvement areas valued by customers. This information can, in turn, allow minimization of future mistakes, and improve an organization's recovery efforts through improved technology, revised policies, and employee training programs focusing on these issues. Therefore, appropriate levels of recovery strategies can be developed and implemented without wasting time and effort. Furthermore, they will be less likely to lose customers who are angry and do not know who to contact to complain. They can also sustain customers' loyalty based on relationships among service failure type and recovery expectation.

Self-blame Strategy (H1a)

An interesting finding is that customers' self-blame is lowest for a non-Internet SST failures. Thus, although respondents produce the service themselves, few translate their involvement into self-blame when errors occur. If customers do not accept partial responsibility in dissatisfying situations, as the results of this study show, they may be less likely to use an SST in the future. This could have important managerial implications as companies develop new SSTs and struggle with service encounter failures. This finding further emphasizes the need to prevent service failures among non-Internet SSTs and to educate customers as to their roles as participants in the service encounter; otherwise, customers are unlikely to share in the blame if the service fails.

Self-blame is another strategy that may be used effectively to notice failures of human-robot collaborations (Groom, Chen, Johnson, Kara, & Nass, 2010). The Groom, Chen, Johnson, Kara, and Nass study suggests that attributing blame solely to humans is a generally poor blame attribution strategy, since that leads people to perceive the robot to be less friendly and competent and more belligerent, and customers may feel less comfortable than when blame is attributed to the team (robot and human) or to robot itself. Consequently, managers should be alert to customer-involved technology-based service and should not blame customers despite customers' responsibility for the problem. Rather, blaming technology or the company might be a better strategy when operating a non-Internet SST.

Characteristics of Failures Types (H1b~H3)

Customers assigned the highest external attribution for a procedure failure and viewed the procedure failure as a permanent problem and the most preventable.

Accordingly, customers, overall, assign highest blame to a company for a procedure failure. The result of the finding might encourage managers to test procedures/policies with customers to discover approval and acceptance before implementing the practices. Having established a practice, the perception of a problem becomes "forever" a problem.

Assigning Overall Blame to a Company (H4)

When comparing customers' causal attributions for a non-Internet SST failure with an employee failure, no significant difference appeared in levels of causal attributions between a non-Internet SST failure and an employee failure. That is to say that customer did not distinguish causal attributions in a non-Internet SST failure from those in an employee failure. However, regarding the overall responsibility of a company for each failure, customers are more likely to blame the company for a non-Internet SST failure than for an employee failure. For that reason, managers should periodically investigate implemented non-Internet SST operations. Shorter intervals between periodic checks means managers can more easily reduce errors and possibly eliminate them all together. Companies can have systems in place that monitor SSTs' functioning, which will help prevention of failures before they happen and/or provide real-time service recovery for customers as they interact with SSTs. This is similar in many respects to what firms such as Caterpillar and Xerox already do in anticipating equipment breakdowns through remote monitoring systems (Meuter et al. 2000). Also, human assistances should be prepared to provide backup service.

A customer's perceptions of a company's procedures cause the procedures to be perceived as equivalent to the company. If customers experience a procedure failure, they

automatically perceive it to be company's fault. Therefore, procedures should be screened for possible failures before implementation. On the other hand, customers are more generous toward the company for an employee failure than for any other failures because customers perceive employee failures more difficult to control by a company than either a technology failure or a procedure failure. In a non-Internet SST failure, eliminating errors is very important for management after implementing SSTs because customers are more likely to blame the company for a technology failure than for an employee failure. In a non-Internet SST failure, no human-to-human interaction takes place, so immediate service recovery is less likely, or the failure may not be evident at the moment of encounter. If the possibility does not exist to totally eliminate SST failures, the only avenue for increasing recovery availability is to shorten oversight intervals.

Failure Severity (H5)

Beyond the theoretical contribution to the literature of establishing link between perceived failure severity and consumers' overall causal attribution, this study's findings have several important practical implications for companies.

If consumers perceive a service failure to be more severe, they may be more likely to blame the company. Among three different failure types, customers' perceived failure severity is highest for non-Internet SST failures, the next highest is for procedure failures, and lowest for employee failures. The reason that customers perceive greater failure severity for a non-Internet SST error than for an employee failure might directly relate to the availability of a chance to remedy the problem. When customers encounter a non-Internet SST failure, they likely seek a person to correct the error. If customers are

engaging in an interpersonal service already, then the perceived failure might seem less severe because a person is available to address the issue. Once an SST failure occurs, customers' perceptions of failure severity level increase, and the company receives more blame. Therefore, the best strategy for managers elimination of non-Internet SST errors, but if failures do occur, then human assistance should be always available to address the problem.

Because severe failures require greater recovery effort on the part of the firm, managers may need to offer additional redress. The findings of this study recommend that managers categorize failure types and failure severity and design recovery systems based those assessments. Service firms should first develop a system for tracking and identifying service failures and the levels of failure severity. Although many service companies are increasingly using low-cost methods to standardize service encounters, customer contact employees should be trained to recognize the varying severity levels of service failures from the customer's perspective and to treat customers whose exhibit varying degrees of negative emotions. In particular, customer contact employees should recognize and understand the very different emotional states existing between "annoyed" "victimized" in order to deliver appropriate service recovery (Zemke & Bell, 1990).

Many customers choose not to complain to a service provider after a service failure, especially when the failure is less severe (Tax et al., 1998). Service employees should, therefore, seek to identify customers who are victims of less severe failures allow implementation of appropriate recoveries. The ability of service employees to identify the severity of service failure indicates a somewhat greater need for training and empowering front-line employees.

Recovery Strategy (H6)

Customers expect an apology most frequently when locus attribution is high; tend to expect to complain rather than a refund for service recovery when the stability attribution and the controllability attribution are high.

This study provides some managerial implications for managers' dealing with recovery strategies. Recovering failures based on a firm's causal attributions may either under-reward or over-reward consumers (Folkes & Kotsos, 1986). To maximize the benefit of a recovery strategy, firms should understand consumers' recovery expectations and make decisions according to consumers' causal attributions. This study examines the effect of consumers' causal attributions on recovery expectations and provides a guideline for managers to create appropriate recovery strategies. As crucial factor is that the success of a particular recovery effort may depend on the type of service failure that occurred. Smith, Bolton, and Wagner (1999) proposed attributes for a recovery effort that need to be matched to the specific failure incident including the type and magnitude of failure. Therefore, organizations need to identify the types of failures that occur, and recognize that monetary compensation may be necessary for a successful recovery effort.

The second implication for this study is providing a clear notion for the constituents of an effective recovery strategy. In general, compensation is the most effective recovery for influencing consumers' perceived justice and service encounter satisfaction.

An apology is a basic service recovery condition and expectation and are always necessary despite the types of attributions applied because an apology is always the most frequent expected recovery in all three causal attributions conditions. Customers

receiving only an apology and explanation might be equally satisfied with and loyal to the company as those who receive only compensation or both an apology and compensation. Therefore, an apology/explanation may restore satisfaction without having to provide compensation (refund) in a restaurant setting, provided the organization effectively resolves the customer's issue. Companies must maintain well-developed recovery strategies to manage consumers' post-failure evaluations, but companies also need to know exactly when to use them. Helping consumers understand the cause of the service failure by providing explanations with an apology offers a powerful and inexpensive tool with which to manage the effectiveness and efficiency of service recovery efforts.

Compensation enhances repurchase intentions when the company is responsible for the failure and the failure is stable (Grewal, Roggeveen, & Tsiros, 2008). The influence of compensation on repurchase intentions varies as a function of the locus of responsibility and the stability of the failure. However, in this study, the level of causal attributions did not affect customers' recovery expectations.

The third implication of the current study involves customers' complaints. The beneficial implications of higher complaint rates are important to consider. First, customer complaints enable firms to adapt SST systems proactively to prevent future failures. Second, complaining customers provide firms the opportunity to prevent unhappy SST customers' switching servicers. When dealing with complaints firms' addressing the issues quickly to prevent service switching is important (Tax & Brown, 1998; Tax, Brown, & Chandrashekaran, 1998).

Study results indicate that customers are more likely to engage formally in intention to complain to the company than to seek a refund. One possible solution is to ease methods for customers to complain by creating multiple communication channels for voicing concerns to an organization (Ahmad, 2002). Holloway and Beatty (2003) found that the percentage of customers complaining was significantly higher for online retailing than for traditional service delivery channels, and that customers chose a variety of communication modes. Consequently, special attention should be paid to interactional justice (Mattila & Mount, 2003) in technological modes of communication. A lack customer adaptation remains for interaction and communication with technology-based services (Limbu, Tan, & Por, 2010). The most significant problem is that the failure recovery in non-Internet SST failure is rarely available. Apology, complaint, and refund are all recovery strategies for an interpersonal service encounter. At current point, human backup for service recovery in non-Internet SST failure might be an option, but managers should consider how to provide an apology, complaint channel, and refund policy in a non-Internet SSTs failure to the same degree provided for a human failure.

Recent studies suggested marketing has moved from interpersonal-service-dominant to a technology-based-service-dominant logic. Evidently, advances in technology will continue to be a critical component of the service industry and technological interactions will be the key to long-term business success. However, little is known about how these interactions affect customers' perceptions and behavior (Meuter et al., 2000). As a result, special attention should be paid to interactional justice in technological modes of communication. A lack of customer adaptation remains for

interaction and communication within technology-based services (Limbu, Tan, & Por, 2010). In the Limbu, Tan, and Por study, nearly half of the respondents indicated a lack of ease in communicating with the FusionBot (coffee serving robot) or learning how to use it. On the other hand, people show their loyalty to computer terminals in human-computer interaction (Sundar, 2004). Appling a structure similar to a computer terminal such as an ATM machine, kiosks, and SST may allow future study to determine whether or not customers 'constant use of technology-based service influences loyalty to the company.

The most significant problem is that the service recovery in non-Internet SST failure rarely exists. Apology, complaint, and refund are all recovery strategies of an interpersonal service encounter. Whether or not hearing an apology from machine alleviates customers' dissatisfaction as much as a human' apology could be the focus of a future study. Currently, human backup for service recovery for a non-Internet SST failure might be an option, but managers should consider how to provide an apology, complaint channel, and refund policy in non-Internet SST failures similar to service recovery provided for a human failure.

Finally, Hart et al. (1990) emphasized the need to train employees and empower the front-line. Any problem that an employee can discover and resolve is an opportunity to enhance customer satisfaction and retention. However, employees often do not have the skills, motivation, or authority needed to successfully initiate a recovery from a service failure. Employees close to the customer are vital for service recovery because they are often the first to know about problems. These employees must be trained in communication, creative thinking, and decision-making skills that allow dealing with

customer complaints. In addition, managers must empower these employees to act by providing authority, responsibility, and incentives to implement successful service recoveries (Hart et al., 1990). Also, training for service recovery for technology-based service failure is needed.

Company's Evaluation (H7)

The overall causal attribution for a firm positively relates to overall dissatisfaction, complaining intent, and negative WOM and also negatively relate to return intent. However, no controllability attribution effect exists for any of evaluations of companies.

As the results show, the cause of the service failure is the main attribution for dissatisfaction. Therefore, for effective service recovery, managers should identify the cause of the problem first, address it, and the attempt a remedy to decrease customers' dissatisfaction.

As for the effects of causal attributions for complaining intent, the results indicate that only locus attribution makes a strong impact on complaining intent. Finding "who" made a mistake might directly relate to whom to blame. Once something goes awry, a manager's basic process would be to listen to the customer to determine the cause of the problem, address it, and try to remedy the situation to reduce the customer's complaint. Furthermore, listening to customers' complaints for failures and opening various, convenient complaining channels might be another important strategy for the company.

The effects of causal attributions on negative WOM, the customers' perceiving more locus attribution, and those encountering repeated service failures are more likely to extend negative WOM to the others. Both locus and stability attribution are significant elements for negative WOM. Therefore, if customers know the cause of problem and

perceive it to be a stable problem, they are more likely to convey negative WOM to other people. Addressing stable problems regularly and correcting them is necessary for managers to decrease negative WOM.

Regarding the relationship between causal attributions and return intent, locus and stability attributions also statistically and significantly contribute to return patronage intent. Naturally, once customers perceive repeated service failures, they do not return for the services. Managers should be aware of how serious stable problems influence return patronage intent. As recommended earlier, addressing stable problems regularly and correcting them are managers' necessary steps to increase return patronage intent.

REFERENCES

Bitner, M. J. (1990). Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing,* 54(2), 69-83.

Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The service encounter: Diagnosing favorable and unfavorable. *Journal of Marketing*, 54(1), 71-84.

Bitner, M. J., Booms, B. H., & Mohr, L. (1994). A critical service encounters: The employee's viewpoint. *Journal of Marketing*, 58(4), 95-107.

Bitner, M. J., Brown, S. W., & Meuter, M. L. (2000). Technology infusion in service encounters. *Academy of Marketing*, 28(1), 138-150.

Blodgett, J. G., Granbois, D. H., & Walters, R. G. (1993). The effects of perceived justice on complainants' negative word-of-mouth behavior and repatronage intentions. *Journal of Retailing*, 69(4), 399-429.

Bougie, R., Pieters, R., & Zeelenberg, M. (2003). Angry customers don't come back, they get back: The experience and behavioral implications of anger and dissatisfaction in services. *Academy of Marketing Science*, 31(4), 377-393.

Bradley, G. W. (1978). Self-Serving Biases in the Attribution Process: A Reexamination of the Fact or Fiction Question. *Journal of Personality and Social Psychology*, 36(1), 56-71.

Brickman, P., Rabinowitz, V. C., Karuza, J., Coates, D., Cohn, E., & Kidder, L. (1982). Models of helping and coping. *American Psychologist*, 37(4), 368-384.

Burger, J. M. (1981). Motivational biases in the attribution of responsibility for an accident. A meta-analysis of the defensive-attribution hypothesis. *Psychological Bulletin*, 90, 496-512.

Choi, S., & Mattila, A. S. (2008). Perceived controllability and service expectations: Influences on customer reactions following service failure. *Journal of Business Research*, 61(1), 24-30.

Cho, H., & LaRose, R. (1999). Privacy issues in internet surveys. *Social Science Computer Review*, 17(4), 421-434.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Erlbaum, NJ: Hillsdale.

Couper, M. P., Blair, J., & Triplett, T. (1999). A comparison of mail and e-mail for a survey of employees in federal statistical agencies. Journal of Official Statistics, 15(1), 39-56.

Cranage, D. (2004). Plan to do it right: And plan for recovery. *International Journal of Contemporary Hospitality Management*, 16, (4/5), 210-219.

Cranage, D. & Mattila, A. S. (2006). Service recovery and pre-emptive strategies for service failure: Both lead to customer satisfaction and loyalty, but for different reasons. *Journal of Hospitality Marketing & Management*, 13(3/4), 161-181.

Curren, M. T., & Folkes, V. S. (1987). Attributional influences on consumers' desires to communicate about products. Psychology and Marketing, 4(1), 31-45.

Curren, M. T., Folkes, V. S., & Steckel, J. H. (1992). Explanations for successful and unsuccessful marketing decisions: The decision maker's perspective. *Journal of Marketing*, 56(2), 18-32.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York, NY: McGraw Hill.

Folkes, V. S. (1984). Consumer reactions to product failure: An attributional approach. *Journal of Consumer Research*, 10(4), 398-409.

Folkes, V. S., Koletsky, S., & Graham, J. L. (1987). A field study of causal inferences and consumer reaction: The view from the airport. *Journal of Consumer Research*, 13(4), 534-539.

Folkes, V. S. (1988). Recent attribution research in consumer behavior: A review and new directions. *The Journal of Consumer Research*, 14(4), 548-564.

Folkes, V. A., & Patrick, V. M. (2003). The positivity effect in perceptions of services: Seen one, seen them all? *Journal of Consumer Research*, 30(1), 125-137.

Forbes, L. P. (2008). When something goes wrong and no one is around: Non-Internet self-service technology failure and recovery. *The Journal of Services Marketing*, 22(4), 316-327.

Grewal, D., Roggeveen, A. L., & Tsiros, M. (2008). The effect of compensation on repurchase intentions in service recovery, *Journal of Retailing*, 84(4), 424-434.

Gronroos, C. (1988). New competition in the service economy: The five rules of service. *International Journal of Operations & Production Management*, 8(3), 9-20.

Gronroos, C. (1992). *Service Management and Marketing: Managing of Trust in Service Competition*. Lexington, MA: Lexington Books.

Groom, V., Chen, J., Johnson, T., Kara, F. A., & Nass, C. (2010). Critic, compatriot, or chump?: Responses to robot blame attribution, department of communication, Stanford University, Stanford, CA

Hair, J. F. Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, New Jersey: Pearson

Prentice Hall, Inc.

Hamilton, V. L. (1980). Intuitive psychologist or intuitive lawyer? Alternative models of the attribution process. *Journal of Personality and Social Psychology*, 39(5), 767-772.

Harris, K. E., Mohr, L. A., & Bernhardt, K. L. (2006). Online service failure, consumer attributions and expectations. *The Journal of Services Marketing*, 20(7), 453-458.

Harris, K. E., Grewal, D., Mohr, L. A., & Bernhardt, K. L. (2006). Consumer responses to service recovery strategies: The moderating role of online versus offline environment. *Journal of Business Research*, 59(4), 425-431.

Hart, C. W. L., Heskett, J. L., & Sasser, W. E. (1991). Surviving a customer's rage. *Successful Meetings*, 40(5), 68-75.

Heider, F. (1944). Perception and phenomenal causality. *Psychological Review*, 51, 358-374.

Heider, F. (1958). *The psychology of interpersonal relationships*. New York: John Wiley and Sons, Inc.

Hess, R. L., Ganesan, S., & Klein, N. M. (2003). Service failure and recovery: The impact of relationship factors on customer satisfaction. *Academy of Marketing Science*, 31(2), 127-145.

Hess, R. L., Ganesan, S., & Klein, N. M. (2007). Interactional service failures in a pseudorelationship: The role of organizational attributions. *Journal of Retailing*, 83(1), 79-95.

Hess, R. L. (2008). The impact of firm reputation and failure severity on customers' responses to service failures. *The Journal of Services Marketing*, 22(5), 385-398.

Hoffman, K. D., Kelley, S. W., & Rotalsky, H. M. (1995). Tracking service failures and employee recovery efforts. *The Journal of Services Marketing*, 9(2), 49-62.

Hoffman, K. D., & Bateson, J. E. J. (1997). *Essentials of service marketing*. Fort Worth, TX: The Dryden Press.

Holman, L., Sheldon, J., & Buzek, G. (2004). North American retail self-check out systems market study. *Enterprise*, 8(3).

Igbaria, M., & Parasuraman, S. (1989). A path analytic study of individual characteristics, computer anxiety, and attitudes toward microcomputers. *Journal of Management*, 15(3), 373-399.

Iglesias, V. (2009). The attribution of service failures: Effects on consumer satisfaction. *The Service Industries Journal*, 29(2), 127-141.

Keaveney, S. M. (1995). Customer switching behavior in service industries: An exploratory study. *Journal of Marketing*, 59(2), 71-83.

Kelley, S. W., & Davis, M. A. (1994). Antecedents to customer expectations for service recovery. *Academy of Marketing Science*, 22(1), 52-62.

Kelley, S. W., Hoffman, K. D., & Davis, M. A. (1993). A typology of retail failures and recoveries. *Journal of Retailing*, 69(4), 429-453.

Koroneos, G. (2008). 6 steps to better self-service. *Hospitality Technology* [online]. Posted on October 9th. Retrieved from http://htmagazine.com/ME2/dirmod.asp?sid=&nm=&type=MultiPublishing&mod=PublishingTitles&mid=3E19674330734FF1BBDA3D67B50C82F1&tier=4&id=84FFF9B680574E1095BAFDEBAD9E9E11

Kotler, P. (1994). *Marketing management: Analysis, planning, implementation, and control* (8th ed.). Englewood Cliffs, NJ: Prentice Hall.

Krishnan, S., & Valle, V. A. (1979). Dissatisfaction attributions and consumer complaint behavior. *Advance in Consumer Research*, Vol. 6, ed. William L. Wilke, Ann Arbor, MI: Association for Consumer Research, 445-449.

Levesque, T. J., & McDougall, G. H. G. (2000). Service problems and recovery strategies: An experiment. *Revue Canadienne des Sciences de l'Administration*, 17(1), 20-37.

Limbu, D. K., Tan, Y. K., & Por, L. TC. (2010). FusionBot: A barista robot - fusionbot serving coffees to visitors during technology exhibition event. *ACM/IEEE International Conference on Human-Robot Interactio,* Proceeding of the 5th ACM/IEEE international conference on Human-robot interaction.

Malhotra, N. K. (1993). *Marketing Research: An Applied Orientation*. International Editions, Englewood Cliffs: Prentice Hall.

Mattila, A. S., & Cranage, D. (2005). The impact of choice on fairness in the context of recovery. *Journal of Services Marketing*, 19(5), 271-280.

Mattila, A. S., & Mount, D. J. (2003). The role of call centers in mollifying disgruntled guests. *Cornell Hotel and Restaurant Administration Quarterly*, 44(4), 75-80.

Maxham, J. G. III., & Netemeyer, R. G. (2002). A longitudinal study of complaining customers' evaluations of multiple service failures and recovery efforts. *Journal of Marketing,* 66(4), 57-73.

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, 64(3), 50-65.

Meuter, M. L., Bitner, M. J., Ostrom, A. L., & Brown, S. W. (2003). Choosing among alternative service delivery modes: An investigation of customer trial of self-service technologies. *Journal of Marketing*, 69(2), 61-83.

Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of Business Research*, 56(11), 899-906.

Mohr, L.A., & Bitner, M. J. (1995). The role of employee effort in satisfaction with service transactions. *Journal of Business Research*, 32(3), 239-253.

Mullaney, T. J., Green, H., Arndt, M., Hof, R. D., & Himelstein, L. (2003). The e-biz surprise. *Business Week*, 5(12), 44-52.

Nation's Restaurant News. (2010). Self-service technology. FindArticles.com [online]. Posted in January 24th, Retrieved from http://findarticles.com/p/articles/mi_m3190/is_47_43/ai_n45580143/

Nunnally, J. O. (1978). *Psychometric Theory*. New York: The McGraw-Hill Companies, Inc.

Oh, D. (2006). Complaining intentions and their relationships to complaining behavior of academic library users in South Korea. *Library Management*, 27(3), 168-190.

Oh, H., & Parks, S. (1997). Customer satisfaction and service quality: A critical review of the literature and research implications for the hospitality industry. *Hospitality Research Journal*, 20(3), 35-64.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460–469.

Oliver, R. L. (1997). *Satisfaction: A Behavioral Perspective on the Consumer*. New York:

The McGraw-Hill Companies, Inc.

Oyedele, A., & Simpson, P. M. (2007). An empirical investigation of consumer control factors on intention to use selected self-service technologies. *International Journal of Service Industry Management*, 18(3), 287-306.

Parasuraman. A., Zeithaml, V. A., & Berry. L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of marketing*, 49(Fall), 41-50.

Parasuraman. A. (1996). Understanding and leveraging the role of customer service in external, interactive and internal marketing. Paper presented at the 1996 Frontiers in Services Conference, Nashville, TN.

Parasuraman. A. (2000). Technology readiness index [TRI]: A multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, 2(4), 307-321.

Richins, M. L. (1983). Negative word-of-mouth by dissatisfied consumers: A pilot study. *Journal of Marketing*, 47(1), 68-79.

Richins, M. L. (1987). A multivariate analysis of responses to dissatisfaction. *Academy of Marketing Science*, 15(3), 24-32.

Robbennolt, J. K. (2000). Outcome severity and judgments of "responsibility": A meta-analytic Review. *Journal of Applied Social Psychology*, 30(12), 2575-2609.

Sharma, K. (2009). The future of self-service in the airline industry. *Kiosk Marketplace* [online]. Retrieved from http://kioskmarketplace.com/article_na_23422.php

Shaver, K. (1985). *The attribution of blame*. New York: Springer-Verlag.

Shostack, G. L. (1985). Planning the service encounter. In *the service encounter*, Czepiel, J. A., Solomon, M. R., & Suprenant, C. F., eds. New York: Lexington Books, 243-254.

Smith, A. K., & Bolton, R. N. (1998). An experimental investigation of service failure and recovery: Paradox or peril? *Journal of Service Research*, 1(1), 65-81.

Smith, A. K., Bolton, R. N., & Wagner, J. (1999). A model of customer satisfaction with service encounters involving failure and recovery. *Journal of Marketing Research*, 36(3), 356-373.

Solomon, M. R., Surprenant, C., Czepiel, J. A., & Gutman, E. G. (1985). A role theory perspective on dyadic interactions: The service encounter. *Journal of Marketing*, 49(4), 99-111.

Sundar, S. S. (2004). Loyalty to computer terminals: Is it anthropomorphism or consistency? *Behaviour & Information Technology*, 23(2), 107-118.

Swanson, S. R., & Kelley, S. W. (2001). Attributions and outcomes of the service recovery process. *Journal of Marketing Theory and Practice*, 9(4), 50-65.

Tax, S. S., & Brown, S. W. (1998). Recovering and Learning from Service Failure. *Sloan Management Review*, 40(1), 75-89.

Tax, S. S., Brown, S. W., & Chandrashekaran, M. (1998). Customer evaluations of service complaint experiences: Implications for relationship marketing. *Journal of Marketing*, 62(2), 60-77.

Valle, V. A., & Walendorf, M. (1977). Consumer attribution of the cause of their product satisfaction and dissatisfaction, in *Consumer Satisfaction, Dissatisfaction, and*

Complaining behavior, ed. Ralph L. Day, Bloomington, IN: Indiana University, 26-30.

Weiner, B., & Kukla, A. (1970). An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology*, 15, 1-20.

Weiner, B. (1985). *Human motivation*, New York: Springer-Verlag.

Weiner, B. (1986). *An attribution theory of motivation and emotion*. New York: Springer-Verlag.

Weiner, B. (2000). Attributional thoughts about consumer behavior. *Journal of Consumer Research,* 27(3), 382-388.

Winsted, K. F. (1997). The service experience in two cultures: A behavioral perspective. *Journal of Retailing*, 73(3), 337-361.

Wirtz, J., & Mattila, A. S. (2004). Consumer responses to compensation, speed of recovery and apology after a service failure. *International Journal of Service Industry Management*, 15(2), 150.

Yen, H. R., Gwinner, K. P., & Su, W. (2004). The impact of customer participation and service expectation on locus attributions following service failure. *International Journal of Service Industry Management*, 15(1), 7-26.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evident. *Journal of Marketing*, 52(July), 2-22.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1993). The nature and determinants of customer expectations of service. *Academy of Marketing Science*, 21(1), 1-12.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31-47.

Zhu, Z. (2002). Fix it or leave it: Antecedents and consequences of perceived control in technology-based self-service failure encounters. *Dissertation Abstracts International*, (UMI No. 3058137).

APPENDIX A

Service Failure Types and Failure Severity Scenario Manipulation (Pretest and Main Test)

PRETEST SCENARIO

Failure by *non-Internet SST* with *severe failure* condition,

You go to a restaurant for a dinner with your family to celebrate *sister's birthday*[1]. You suggest you sister that she orders the steak because you have heard from friends that it is excellent. You order a steak **on a touch screen**[2] at the table for you and your sister. After 15 minutes, your order is delivered by a server. You notice that the steak came with onions and your sister is upset. She tells the server that she does not like onions. The server checks the order slip and says **a request to "exclude onions" is not on the order slip**[3].

Failure by *non-Internet SST* with *mild failure* condition,

You go to a restaurant for dinner. You place your order for a steak, with baked potato, vegetable, and salad **on a touch screen** at the table. After 15 minutes, your order is delivered by a server. You notice to your dismay that the steak is garnished with sautéed onions on top. You really do not like onions. You tell the server that you do not like onions. The server checks the order slip and says **a request to "exclude onions" is not on the order slip.**

Failure by *employee* with *severe failure* condition,

You go to a restaurant for a dinner with your family to celebrate *sister's birthday*. You suggest you sister that she orders the steak because you have heard from friends that it is excellent. You order a steak **with a server** for you and your sister. After 15 minutes, your order is delivered by the server. You notice that the steak came with onions and your sister is upset. She tells the server that you do not like onions. The server checks the order slip and says **a request to "exclude onions**" is not on the order slip.

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[1] *Italic* for Failure Severity Manipulation

[2] & [3] **Bold** for Failure Types Manipulation

Failure by *employee* with *mild failure* condition,

You go to a restaurant for dinner. You place your order for a steak, with baked potato, vegetable, and salad **with a server**. After 15 minutes, your order is delivered by a server. You notice to your dismay that the steak is garnished with sautéed onions on top. You really do not like onions. You tell the server that you do not like onions. The server checks the order slip and says a request **to "exclude onions" is not on the order slip.**

Failure by *procedure* with *severe failure* condition,

You go to a restaurant for a dinner with your family to celebrate *sister's birthday*. You suggest you sister that she orders the steak because you have heard from friends that it is excellent. You order a steak **on a touch screen** at the table for you and your sister. After 15 minutes, your order is delivered by a server. You notice that the steak came with onions and your sister is upset. She tells the server that she does not like onions. The server says **the policy is that all steaks on the menu are automatically served with onions**.

Failure by *procedure* with *mild failure* condition,

You go to a restaurant for dinner. You place your order for a steak, with baked potato, vegetable, and salad **on a touch screen** at the table. After 15 minutes, your order is delivered by a server. You notice to your dismay that the steak is garnished with sautéed onions on top. You really do not like onions. You tell the server that you do not like onions. The server says **the policy is that all steaks on the menu are automatically served with onions**.

MAIN TEST SCENARIO

In this study, you are asked about assigning responsibility and blame for a service failure. Please, read the scenario about the service failure of a restaurant presented on this page and answer the questions that follow.

Failure by *non-Internet SST* with *severe failure* condition,

You go to a restaurant for a very special dinner with your spouse to celebrate ***a very important anniversary***. You suggest to your spouse that she/he order the steak because you have heard from friends that it is excellent. You order a steak for you and your spouse **on a touch screen.** After 15 minutes, your order is delivered by a server. You notice that the steak is garnished with sautéed onions on top and your spouse is very upset and the evening is ruined. Your spouse tells the server that she/he is ***deathly allergic to onions***. The server checks the touch screen and confirms it with their tech person, and says **there has been a malfunction** because the touch screen is supposed to mention that all steaks on the menu are served with onions, and it is also supposed to ask the customer if they don't want them.

Failure by *non-Internet SST* with *mild failure* condition,

You go to a restaurant for dinner. You order the steak because you have heard from friends that it is excellent. You place your order **on a touch screen.** After 15 minutes, your order is delivered by a server. You notice that the steak is garnished with sautéed onions on top and you are upset. You tell the server that you do not like onions. The server checks the touch screen and confirms it with their tech person, and says **there has been a malfunction** because the touch screen is supposed to mention that all steaks on the menu are served with onions, and it is also supposed to ask the customer if they don't want them.

Failure by *employee* with *severe failure* condition,

You go to a restaurant for a very special dinner with your spouse to celebrate a ***very important anniversary***. You suggest to your spouse that she/he order the steak because you have heard from friends that it is excellent. You order a steak for you and your spouse **with a server.** After 15 minutes, your order is delivered by the server. You notice that the steak is garnished with sautéed onions on top and your spouse is very upset and the evening is ruined. Your spouse tells the server that she/he is ***deathly allergic to onions***. **The server** admits that she/he is supposed to, but forgot to mention that all steaks on the menu are served with onions, and she is supposed to ask the customer if they don't want them.

Failure by *employee* with *mild failure* condition,

You go to a restaurant for dinner. You order the steak because you have heard from friends that it is excellent. You place your order **with a server.** After 15 minutes, your order is delivered by the server. You notice that the steak is garnished with sautéed onions on top and you are upset. You tell the server that you just do not like onions. **The server** admits that she is supposed to, but forgot to mention that all steaks on the menu are served with onions, and she is supposed to ask the customer if they don't want them.

Failure by *procedure* with *severe failure* condition,

You go to a restaurant for a very special dinner with your spouse to celebrate ***a very important anniversary***. You suggest to your spouse that she/he order the steak because you have heard from friends that it is excellent. You order a steak for you and your spouse on a touch screen**.** After 15 minutes, your order is delivered by a server. You notice that the steak is garnished with sautéed onions on top and your spouse is very upset and the evening is ruined. Your spouse tells the server that she/he is ***deathly allergic to onions***. Meekly, the server tells you that **the restaurant** has decided that steaks are best served with sautéed onions and **has developed a policy that all steaks are automatically served with onions**.

Failure by *procedure* with *mild failure* condition,

You go to a restaurant for dinner. You order the steak because you have heard from friends that it is excellent. You place your order on a touch screen**.** After 15 minutes, your order is delivered by a server. You notice that the steak is garnished with sautéed onions on top and you are upset. You tell the server that you do not like onions. Meekly, the server tells you that **the restaurant** has decided that steaks are best served with sautéed onions and **has developed a policy that all steaks are automatically served with onions.**

APPENDIX B:

Measurement Scales

Variables	Items
Failure Types (1 item)	(1= strongly disagree, 7= strongly agree) 1. I believe a **touch screen/machine** was primarily involved with the problem. 2. I believe the **server** was primarily involved with the problem. 3. I believe a specific **restaurant procedure/policy** was primarily involved with the problem.
Failure Severity (4 items)	"In my opinion, the problem I encountered at the restaurant was a _____." 1. Insignificant service failure (1)/Significant service failure (7) 2. Minor problem (1)/Major problem (7) 3. Small inconvenience (1)/Big inconvenience (7) 4. Minor aggravation (1)/Major aggravation (7)
Realism (3 items)	(1= strongly disagree, 7= strongly agree) 1. I believe the scenario was realistic 2. I had no difficulty imagining myself in this scenario. 3. I am confident in my ability to assess this kind of service failure.
Overall Causal Attribution (2 items)	(1= not at all, 7= completely) 1. To what extent do you blame the restaurant for this problem? 2. To what extent do you hold the restaurant responsible for the problem?
Locus Attribution (4 items)	1. I perceive a **touch screen/machine** caused the problem. 2. I perceive the **server** caused the problem. 3. I perceive a **restaurant procedure/policy** caused the problem. 4. I perceive **I** caused the problem.
Stability Attribution (3 items)	"The cause of the problem described is likely to be _____." 1. Temporary (1)/Permanent (7) 2. Occurring infrequently (1)/Occurring frequently (7) 3. Changing over time (1)/Unchanging over time (7)
Controllability Attribution (2 items)	(1= strongly disagree, 7= strongly agree) 1. The cause of the problem was controllable**.** 2. The cause of the problem could have easily been prevented.

Overall Dissatisfaction (6 items)	(1= strongly disagree, 7= strongly agree) "Overall, what is your level of satisfaction or dissatisfaction with this service experience? I feel _____." 1. displeased with the restaurant. 2. discontented with the restaurant. 3. unhappy with the restaurant. 4. dissatisfied with the restaurant. 5. that the restaurant did a poor job. 6. that I made a wise choice in having a meal at this restaurant.
Expected Recovery (6 items)	(1= strongly disagree, 7= strongly agree) "Given the problem that you encountered with the order, how do you expect the restaurant to respond?" 1. I expect a replacement and an apology would be sufficient. 2. I expect a replacement and my meal to be free (refund). 3. I expect a replacement, an apology and the meal to be free.
Complaining Intent (3 items)	(1= strongly disagree, 7= strongly agree) "Considering what you read about the restaurant, how likely is it that you would _____" 1. discuss the problem with the manager. 2. ask the restaurant to take care of the problem. 3. complain to the restaurant about the problem.
Return Intent (2 items)	(1= strongly disagree, 7= strongly agree) "I will _____." 1. return to this restaurant in the future. 2. choose this restaurant again when I want this type of cuisine.
Negative WOM (4 items)	(1= strongly disagree, 7= strongly agree) "Considering what you read about the restaurant, how likely is it that you would _____" 1. warn others not to use the restaurant. 2. say negative things about the restaurant to other people. 3. not recommend the restaurant to others who seek my advice. 4. discourage friends and relatives to do business with the restaurant.

Previous Experience (4 items)	(1= strongly disagree, 7= strongly agree). "How would you characterize your history with this type of problem?" 1. I have experienced a problem like this before. 2. This type of problem is a common. 3. I have had a service failure like this many times in the past. 4. I have never had a service failure like this in the past.
Technology Anxiety (8 items)	(1= strongly disagree, 7= strongly agree) 1. Services that use new technology are much more convenient to use. 2. I feel confident that machines will complete the tasks according to my instructions. 3. I enjoy the challenge of figuring out new technology 4. I have fewer problems with technology than my friends. 5. It is embarrassing when I have trouble with a new technology while people are watching. 6. Technology always seems to fail at the worst possible time. 7. I feel apprehensive about using technology. 8. I hesitate to use technology for fear of making mistakes I cannot correct.

APPENDIX C:

Questionnaire

for *Non-Internet SST*/*Severe* Failure Manipulation

Recruiting Script

Hello! My name is Bo-Youn Lee.

I am a graduate student of the HRIM at Penn State University.

You are invited to participate in a new research study that is available to staff at Penn State University who are 18 years of age or older. By participating in this study as a research volunteer, we offer you a small gift. You are also agreeing to participate in a research study that will ask you to evaluate some causal attribution following service failure. Your participation should take about 15 minutes of your time.

If you have any questions about the study, please contact Bo at bul120@psu.edu or David Cranage at dac2@psu.edu. Thank you!

NAME OF PI: Bo-Youn "Bo" Lee

ADDRESS: 201 Mateer Building

School of Hospitality Management

Pennsylvania State University

University Park, PA 16802

EMAIL: bul@psu.edu/ dac2@psu.edu

Thank you for agreeing to participate in this study. In this study, you are asked about assigning responsibility and blame for a service failure. Please, read the scenario about the service failure of a restaurant presented on this page and answer the questions that follow.

Please read the following scenario:

You go to a restaurant for a very special dinner with your spouse to celebrate ***a very important anniversary***. You suggest to your spouse that she/he order the steak because you have heard from friends that it is excellent. You order a steak for you and your spouse **on a touch screen.** After 15 minutes, your order is delivered by a server. You notice that the steak is garnished with sautéed onions on top and your spouse is very upset and the evening is ruined. Your spouse tells the server that she/he is ***deathly allergic to onions***. The server checks the touch screen and confirms it with their tech person, and says **there has been a malfunction** because the touch screen is supposed to mention that all steaks on

Please answer the following questions based on the scenario you read (please circle):

A.

1. I believe a **touch screen/machine** was primarily involved with the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

2. I believe **the server** was primarily involved with the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

3. I believe a specific **restaurant procedure/policy** was primarily involved with the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

4. I believe the scenario was **realistic**

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

5. I had no difficulty imagining myself in this scenario.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

6. I am confident in my ability to assess this kind of service failure.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

B.

1. In my opinion, the problem I encountered at the restaurant was a

Insignificant Service Failure	1	2	3	4	5	6	7	**Significant Service Failure**
Minor Problem	1	2	3	4	5	6	7	**Major Problem**
Small Inconvenience	1	2	3	4	5	6	7	**Big Inconvenience**
Minor Aggravation	1	2	3	4	5	6	7	**Major Aggravation**

C.

1. Considering what you read,

	1=Not at all						**7=Completely**
To what extent do you blame the restaurant for this problem?	1	2	3	4	5	6	7
To what extent do you hold the restaurant responsible for the problem	1	2	3	4	5	6	7

2. I perceive a **touch screen/machine** caused the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

3. I perceive the **server** caused the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

4. I perceive a **restaurant procedure/policy** caused the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

5. I perceive **I** caused the problem.

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

6. The cause of the problem described is likely to be

Temporary	1	2	3	4	5	6	7	**Permanent**
Occurring infrequently	1	2	3	4	5	6	7	**Occurring frequently**
Changing over time	1	2	3	4	5	6	7	**Unchanging over time**

7. The cause of the problem was controllable**.**

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

8. The cause of the problem could have easily been **prevented.**

Strongly disagree	1	2	3	4	5	6	7	**Strongly agree**

D.

1. **Overall,** what is your level of satisfaction or dissatisfaction with this service experience?

I feel …

1=strongly disagree							**7=strongly agree**
displeased with the restaurant.	1	2	3	4	5	6	7
discontented with the restaurant.	1	2	3	4	5	6	7
unhappy with the restaurant.	1	2	3	4	5	6	7
dissatisfied with the restaurant.	1	2	3	4	5	6	7
that the restaurant did a **poor job**.	1	2	3	4	5	6	7

that I made a **wise choice** in having a meal at this restaurant.	1	2	3	4	5	6	7

E.

1. Given the problem that you encountered with the order, how do you expect the restaurant to respond?

1=strongly disagree							**7=strongly agree**
I expect a replacement and an **apology** would be sufficient.	1	2	3	4	5	6	7
I expect a replacement and my meal to be **free** (refund).	1	2	3	4	5	6	7
I expect a replacement, an apology and the meal to be free.	1	2	3	4	5	6	7

F.

1. Considering what you read about the restaurant, how likely is it that you would…

1=strongly disagree							**7=strongly agree**
discuss the problem with the manager.	1	2	3	4	5	6	7
ask the restaurant to take care of the problem.	1	2	3	4	5	6	7
complain to the restaurant about the problem.	1	2	3	4	5	6	7

2. I will

1=strongly disagree							**7=strongly agree**
return to this restaurant in the future.	1	2	3	4	5	6	7
choose this restaurant again when I want this type of cuisine.	1	2	3	4	5	6	7

3. Considering what you read about the restaurant, how likely is it that you would…

1=strongly disagree	**7=strongly agree**

warn others not to use the restaurant.	1	2	3	4	5	6	7
say negative things about the restaurant to other people.	1	2	3	4	5	6	7
not recommend the restaurant to others who seek my advice.	1	2	3	4	5	6	7
discourage friends and relatives to do business with the restaurant.	1	2	3	4	5	6	7

G.

1. How would you characterize your history with this type of problem?

1=strongly disagree							**7=strongly agree**
I have experienced a problem like this before.	1	2	3	4	5	6	7
This type of problem is a common.	1	2	3	4	5	6	7
I have had a service failure like this many times in the past.	1	2	3	4	5	6	7
I have never had a service failure like this in the past	1	2	3	4	5	6	7

2.

1=strongly disagree							**7=strongly agree**
Services that use new technology are much more convenient to use.	1	2	3	4	5	6	7
I feel confident that machines will complete the tasks according to my instructions.	1	2	3	4	5	6	7
I enjoy the challenge of figuring out new technology.	1	2	3	4	5	6	7
I have fewer problems with technology than my friends.	1	2	3	4	5	6	7
It is embarrassing when I have trouble with a new technology while people are watching.	1	2	3	4	5	6	7
Technology always seems to fail at the worst possible time.	1	2	3	4	5	6	7

I feel apprehensive about using technology.	1	2	3	4	5	6	7
I hesitate to use technology for fear of making mistakes I cannot correct.	1	2	3	4	5	6	7

Your age: _____

Your gender: Male _____ Female_____

Thanks again and have a great day!

VITA

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