

My Problem, Your Solution: A Study of Customer Causal Attributions in Product or Service Failure

Abstract: The present study investigates whether consumers react differently when a failure of service or problems related to product quality occur relative to the source of agent-failure (e.g., the company's failure or the consumer's own failure). Using an experiment to manipulate the attributional cause of failure, we measured five constructs (perception of justice, negative emotions, trust, switching intention, and post-purchase intention). We conducted a multigroup analysis to investigate whether the source of agent-failure changed the proposed modeling. The results showed that the impact of which party is at fault for the failure differs among constructs from the proposed model. We end the paper by discussing the results and presenting limitations and recommendations for future research.

Keywords: Attribution Theory, Causal Attribution, Service Failure

Introduction

For this research, a failure consists of an event, an error, or a condition that enable a product, a service or the firm to perform as previously defined (Šolc, 2012). Service failure equates to a problem that a customer has with a service (Spreng et al., 1995), while product quality failure relates to a product not performing according to manufacturer specifications (Zeithaml, 1988) or not meeting customer requirements (Šolc, 2012). Failure of any type is a critical issue for companies (Song et al., 2016; Laufer and Gillespie, 2004; McCollough et al., 2000) because it affects consumer perception of the product/service quality and can create opportunities for consumer complaints (Colgate and Norris, 2001).

A thorough investigation of the literature reveals that researchers have been investigating this topic to help companies handle failure effectively. Most of the research on the topic relates to complaints (e.g. Chebat et al., 2005), satisfaction (e.g., Van Vaerenbergh et al., 2012), satisfaction recovery (e.g., Durvasula et al., 2000), likelihood of negative word of mouth (e.g., Gelbrich and Roschk, 2010), and double deviation scenarios (e.g., Joireman et al., 2013). Service or product failure has also been explored in terms of attributional theory (Tam et al., 2016; Varela-Neira et al., 2010; Hui and Toffoli, 2002; Bitner, 1990).

The attributional theory is the theoretical framework used to investigate how people interpret and react to an event or specific behavior. This theory has three causal dimensions: 1) stability, which focuses on event causes over time or in a specific period of time, 2) controllability, which focuses on whether a behavior can be controlled with specific skills or whether events can occur by chance, such as bad luck, and 3) locus of control, which focuses on internal and external control of events (Weiner, 1972). Widespread consensus suggests that these results of actions depend on factors within the person and factors in the environment. User interchanged this dimension is also called locus of causality (e.g. Weiner, 2000).

Among these dimensions, studies that include locus of causality attributions are less common in the literature (Song et al., 2016; Jones et al., 2014; Van Vaerenbergh et al., 2014; Bitner et al., 1990). Van Vaerenbergh et al. (2014) performed a meta-analysis of attributional theory on service failure and explained that “because of the small number of studies available, we could not include locus of causality in our analysis” (2014, p. 383). Two main reasons probably account for the paucity of locus of causality research: first, most causes of service failure originate, by definition, with the service provider, and, second, most studies are primarily interested in analyzing customers’ reactions to service failure caused by the service provider (Bitner et al., 1990).

Due to the scant attention paid to the study of locus of causality in situations involving failure, the need to deepen understanding of this dimension is clear (Varela-Neira et al., 2010; Laufer et al., 2005). As with the other two dimensions, locus of causality serves as a basis for a positive or negative consumer experience. Investigating whether consumers react differently according to the source of agent-failure (e.g., the company, another consumer, or the consumer him- or herself) when a failure occurs is relevant to companies to enable them to create specific strategies to minimize negative consumer reactions. Nonetheless, some current research has investigated the locus of causality in failure in specific situations, as summarized in Table 1.

Table 1. Summary of research that focuses on the locus of causality in-service failure.

Authors	Objective of the research	Scenario	Locus of Causality Method	
			(External) Company’s Cause	(Internal) Consumer’s Cause
Laufer and Gillespie (2004)	Examine whether there are differences between men and women in consumer attributions of blame towards a company in a product-harm crisis.	Product-harm crisis scenario (orange juice)		√ As dependent variable
Yen, Gwinner, and Su (2004)	Focus on the impact of customer participation (co-production of service) and service expectation.	Information sharing situation (class discussion)		√ Consumer as a co-producer in the service provider
Laufer, Gillespie, McBride, and Gonzalez (2005)	Examine the role severity plays in consumer attributions of blame in a product-harm crisis in Mexico.	Product-harm crisis scenario (orange juice)		√ As dependent variable
Weber and Sparks (2010)	Focus on the effect of service with a particular focus on locus of service failure and strength of social identification.	Airline Partner Alliance	√	√
Varela-Neira, Várquez-Casielles, Iglesias (2015)	Investigate whether the perception of lack of preferential treatment has a positive impact on dissatisfaction following a service failure.	Financial Services	√	√
Jones, Taylor, and Reynolds (2014)	Investigate the practice of frontline service employees attempting to influence customer responses to satisfaction surveys. Uses the locus of control/causality as moderator.	Cell phone purchase experience	√ Focus on locus of control	√ Focus on locus of control

Iglesias, Varela-Neira and, Várquez-Casielles (2010)	Analyze the effects of attributions on the efficacy of service recovery strategies in preventing customer defection following a service failure.	Retail banking industry	✓ Focus on intentional attributions	✓ Focus on intentional attributions
Song, Sheinin, and Yoon (2016)	Focus on how locus of causality and outcome severity of product failure interact with consumer brand evaluation.	Tire blowout	✓	✓

“Some product failures generate only mild inconvenience, but others have more substantial consequences” (Song et al., 2016, p. 1212). Perhaps the most severe consequence of failure is when it is not possible to solve the problem. Since a solution to a problem can recover and sometimes boost consumer satisfaction (i.e., paradox recovery satisfaction; (e.g. Joireman et al., 2013), the outcome of a situation is a relevant moderator that needs to be approached. Therefore, we also test the locus of causality when the problem is or is not solved, as moderated by the consumer’s perceived outcome of the product failure.

We estimated relationships among constructs and comparisons of two failure situations using the structural equations model (SEM) based on Likert-type scale items from a sample of 224 respondents. The measurement model was a non-linear confirmatory factor analysis, also referred to in the literature as Samejima’s graded response model (Takane and de Leeuw, 1987). We estimated the structural model itself using maximum pseudo-likelihood, a robust method for misspecification of the distributional assumptions (Gourieroux et al., 1984).

Negative evaluations by customers based on service failures and attempts at service recovery usually result in significant losses of new and old customers, increasing researchers’ interest in developing new, effective service recovery strategies to restore customer satisfaction (Mittal and Kamakura, 2001). Therefore, in this paper, we investigate and argue that causal attribution theory has a different impact on post-purchase intention and its antecedents. Our research contributes to the field of marketing by 1) testing a complete model of service failure with the causal attribution theory and 2) understanding how a consumer’s failure versus a company’s failure influences a consumer’s post-purchase intention. Further, the research contributes to the field of management by identifying the differences when comparing the groups created by the attributional cause. The latter allows for the development of customer retention strategies and procedural flowcharts that could provide proactive and timely solutions to problems, depending on who is at fault.

The paper is structured as follows: we first present an overview of causal attributional theory followed by a presentation of the model to be tested. Subsequently, we propose our hypothesis related to causal attributional theory and recovery from the service failure. Next, we describe in detail the methodology used in this study. Finally, we report on our analysis, share the results, and discuss the implications of our findings.

Causal Attributional Theory

Attributions play their role in post-initial outcome decision making, because its influence is exercised after observing the performance of a product/service purchased and prior to the next choice; thus, if the product purchased does not reach the level of our aspirations, we tend to question its performance looking for possible causes (Weiner, 2000). Specifically, causal attributions refer to people's perceptions about what or whom is responsible for certain events, and they serve as important determinants of customers' respective affective and behavioral responses (Wagner et al., 2009).

The causes that people infer can be categorized by three underlying dimensions: stability, controllability, and locus of causality (Weiner, 2000). Stability refers to the degree to which people believe the cause of an event is temporary or constant over time; controllability entail beliefs that an event could have been prevented, therefore, their outcome could have been different; and locus refer to the belief that an event was caused by themselves or by others (firm).

From the main studies of service failure that explore attributional theory, we observe that one of the pioneers was Bitner (1990) that explores the controllability on customer evaluation and on the perception of service quality. According to this author, when customer perceive that the firm has control over the cause and the cause is not a rare event, they become more dissatisfied than when the firm does not have control of the cause, and the event is unique. Bitner with his colleague's Booms and Tetreatault (1990) identified sources of dis/satisfaction, generalizable across industries, more specifically hotels, airlines, and restaurants. They also explain that the causes of service failures originate with the service provider, making the locus the causal attribution unambiguous. Hui and Toffoli (2002) using interviews investigated the relationship between perceived (un)control and consumer attributions following a service encounter. One of the main findings is that "when the consumer perceives control in the service encounter, he/she is more inclined to think that the incident will recur with the service organization" (Hui and Toffoli, 2002, p. 1839). However, "if there is outcome dissatisfaction, the cause might be self-ascribed ("I am just no good with computers") (Weiner, 2000, p. 384) the cause of a bad quality or low expectation service can be perceived to the self, as an internal cause.

Varela-Neira, Varquez-Casielles and Iglesias (2010) investigate if the perception of lack of preferential treatment has a positive impact on dissatisfaction following a service failure. And, Van Vaerenbergh et al (2014) did a meta-analysis of attributional theory on failure service however they could not include the locus of causality in their analysis. They comment "because of the small number of studies available, we could not include locus of causality in our analysis (Van Vaerenbergh et al., 2014)". Therefore, the dimensions of stability and controllability have been extensively studied; however, studies including locus of causality attributions are less common.

The locus of causality can play an important role in customers' emotional responses (Funches, 2011) because their reactions are likely to influence subsequent product/service decisions (Weiner, 2000). Considering a success or a failure situation, the locus is the basis to understand people's internal attributions interlaced with emotions (Weiber, 2014). For instance, when the consumer buys a product with after using seem to have a bad quality or the chosen service has a

bad performance, consumer could experience guilt, for having chosen a poor firm, he/she could also feel embarrassment or humiliation for not being able to distinguish good from bad firms (Weiner, 2000).

To enhance knowledge regarding service failure and emotional consequences, we present a model which we argue that depending on the locus of causality (firm or client at fault), perceived justice, and emotional and behavioral responses could have different reactions. According to Chebat and Slusarczyk (2005), customers' previous experiences affect the level of perceived justice and can trigger different emotional experiences. Starting with the proposition that causal responsibility can play a significant role in the relationships of the model's constructs we present in the next chapter our model.

Proposed Model

Failure is a critical issue for companies (McCullough et al., 2000) because it is cheaper to keep customers satisfied than to reach out to and acquire new customers (Mittal and Kamakura, 2001). Failures may be inevitable, but dissatisfied customers are not, so companies have strategies for customer retention. When consumers believe they have been wronged, they perceive injustice. This is related to perceiving a violation of the distributive, procedural, or interactional processes. When injustice feelings happen, consumers feel negative emotions (Funches, 2011) and tend to create negative consequences for the firm (McColl-Kennedy et al., 2011). Also, the trust between customer and firm is violated. Therefore, perceived justice is expected to influence customers' trust (Wirtz and Lwin, 2009).

Trust is associated with quality consistency, competence, honesty, integrity, responsibility, and benevolence. Trust is the expectation of one party that the other party will behave in a predictable manner in a specific situation. Trust generates cooperation between partners, reducing conflicts and increasing commitment to the relationship and helping to maintain it over time (Konuk, 2013; Wirtz and Lwin, 2009; DeWitt et al., 2008). DeWitt et al. (2008) demonstrated that customers' perceived justice influences their trust in service providers, and that trust is affected by perceptions of the trustee's ability, integrity, and benevolence. Zhou (2013) explored the three dimensions on the context of the acquisition of cell phones. In this context, the ability is related to the recognition by the customer that the company can fulfill its tasks properly; integrity refers to the company's commitment to honor its promises; and, benevolence means that the provider also benefits from the relationship with the customer. Then, exceeding or disappointing client expectations can strengthen or weaken the reliability of service providers (Ruyter and Wetzels, 2000).

When a customer recognizes injustice in a situation, negative emotions could be induced. One negative emotion that has been related to the perception of justice (or injustice) by many researchers is anger (Isabella et al., 2015; Strizhakova et al., 2012; Xia et al., 2004). For customers, anger is a strong specific emotion that triggers aggressive behavior such as saying something nasty or desiring to hurt someone (the brand or company) or stop purchasing products from the firm (McColl-Kennedy et al., 2011; Bougie et al., 2003). However, an injustice situation can also produce a

mixture of negative emotions such as unhappiness, distress, anxiety, frustration or hate that can create a negative effect on consumer relationship with the firm (Funches, 2011). A customer's perception of causality may trigger or enhance this negative experience (Bougie et al., 2003). For instance, it is estimated that 20% of call center interactions involve anger and verbal abuse by customers (Grandey et al., 2004), and other negative emotions can also be involved, such as regret (Tsiros et al., 2004). In summary, how consumer feels about a product or service impacts critical constructs, complaints to third parties, and post-repurchase intention (Gelbrich and Roschk, 2010; DeWitt and Brady, 2003).

Related to that, it seems clear that negative experiences will decrease switching cost (Pick and Eisend, 2013). When there is low trust, consumers tend to rationalize changing companies (Xia and Kukar-Kinney, 2013; Antón et al., 2007; Bougie et al., 2003). Related to that trust can be viewed as a switching barrier for customers. When customers believe in their firms, their switching cost is high, and their relationship investment also increases: "Switching is the likelihood of switching, the intent to switch, and the actual switching behavior of a buyer to another seller" (Pick & Eisend, 2013, p. 187). Thus, switching is an intention of change based on the commitment established and developed by customers with a service provider, which for some reason provides a superior value benefit (Lang, 2001). When there is a failed service encounter, there is a direct impact on the cost perception to switch providers, and the negative experiences decrease the switching cost perception (Pick and Eisend, 2013).

Since switching cost refers to the perception of the barrier to a consumer to move to another firm, it is logical to assume that there is a positive relationship between switching cost perception and post-purchase intention. Therefore, the cost of change is a motivator for keeping customers in a relationship (Jones et al., 2007).

According to Konuk (2013), brand trust can be viewed as a switching cost for customers. The relationships between customers and brands or firms are consequences of trust. Between two parties, it is necessary to maintain a relationship to earn a level of trust and to minimize, if not eliminate, any perceived uncertainty and risks associated with customers' purchase behavior (Elliott and Yannopoulou, 2007). Trust is an antecedent of intention to purchase (Konuk, 2013). Therefore, trust has a direct and positive impact on intention to purchase after a service recovery, but when customers believe in their firms, their switching cost will increase, and their relationship investment increases. For the above, it is understood that there is a positive relationship between trust and switching.

Therefore, based on the literature and in the five variables (perception of justice, negative emotions, trust, switching cost and post-purchase intention) often used in service failure and with widely accepted relationships, previously presented in our theoretical background we propose the model presented in Figure 1. We will use confirm the model proposed by the literature and the test the causal attribution effect on it. In the next chapter, we give the arguments why we believe the causal attribution can impact on the model.

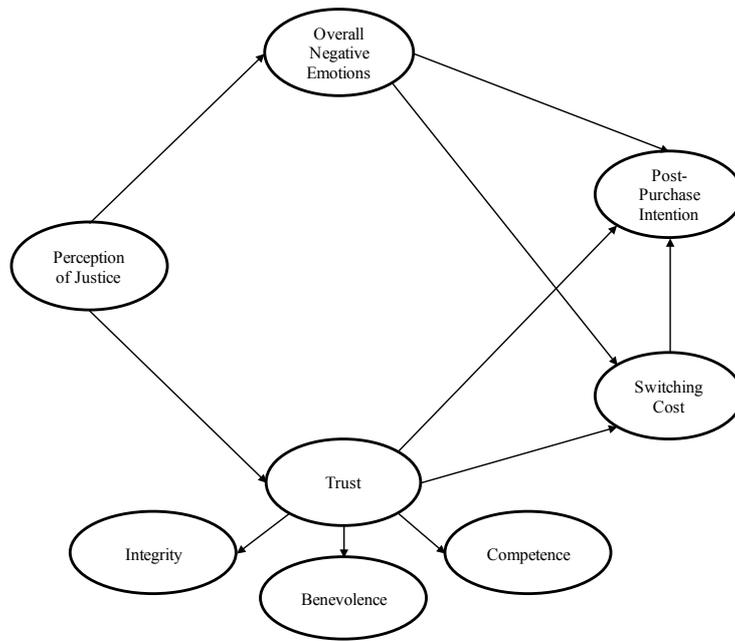


Figure 1 – Post Intention Model the Proposed Model

Moderators of the Model

Company Solution (solved / not-solved)

When a failure situation occurred some consumers complain about the company. When this happens companies have the opportunity to rectify the problem and recover consumer perception about the company (Colgate and Norris, 2001). The service recovery includes all actions taken by the company in other to try to resolve the problem a customer has (Gronroos, 1990). Companies are always spending time and money to recover consumer satisfaction (Mittal and Kamakura, 2001), different solutions and techniques are used to recovery consumers. When firms find a solution to the consumer the probability to recover positive consumer responses to the company increases. However, when the firms do not solve the failure, consumer dissatisfaction may be intensified (Colgate and Norris, 2001). In this second case, consumers may perceive the recovery effort poor causing the consumer even more dissatisfaction, decreasing trust on the company or the lacks of barriers to exit (Sheth and Parvatiyar, 1995). Consequently, we understand that the problem's resolution is a moderator of the recovery satisfaction that could effect on all the consequences behaviors. In other words, we understand that customers will have different behaviors depending on the service failure's resolution. When companies are able to provide appropriate recovery (treatments and solutions), they may boost long-term satisfaction, develop positive consumer emotions, and possibly increase consumer's trust in the company.

Therefore, our first hypothesis is related to the influence of an outcome to a customer complain. We believe that if the consumers have their problems solved, the variables trust, emotions, switching cost and post-purchase intention will be affected. Based on this assumption the present paper investigates the attributional cause based on two situations when consumer solved the problem, and when it could not solve it.

Causal Attribution (consumer-versus-firm failure influences)

Attributions play their role in post-initial outcome decision making, because its influence is exercised after observing the performance of a product/service purchased and prior to the next choice; thus, if the product purchased does not reach the level of our aspirations, we tend to question its performance looking for possible causes (Weiner, 2000). Specifically, causal attributions refer to people's perceptions about what or whom is responsible for certain events, and they serve as important determinants of customers' respective affective and behavioral responses (Wagner et al., 2009).

In general, consumers are less pleased when "they perceive that the brand manufactures controls the cause of the failure, as opposed to when they believe the manufacturer lacks control" (Song et al., 2016, p. 2112). Similarly, in this situation, they evaluate a brand more negatively than when the firm has control to the failure (Choi and Mattila, 2008; Bitner, 1990). In other words, consumer shows stronger equity-related reactions for brand-caused than for consumer-caused failure. When a failure happens and the problem was caused by the consumer, they may blameless the brand, and they may more willing to discuss the situation in a positive light. This happens because the consumers must understand that the brand manufacturer or the service provider had less control over the caused problem. Choi and Mattila (2008, p. 25) comment about it "when customers feel partly responsible for the failure or are ambiguous about its cause, the negative effects of poor performance are somewhat mitigated". According to Song et al (2016), this situation changes if the problem is severe, in this case, consumers identify themselves more closely with a victim of the situation than as a consumer-caused failure. Because they can perceive themselves as a victim they get motivated to complain and blame the company for having a bad product or service.

However, the severity of a problem can affect the consumer perception of a problem, we understand that consumers are able to perceive that they are also responsible for the failure situation even if in part. Based on that, we hypothesize that consumer will be more resilience when they attribute a failure service to themselves compared to when the failure comes from the company's. Moreover, we believe emotional responses may vary according to whom the customer attributes blame for an incident, and a customer's perception of causality may trigger or enhance this negative experience (Bougie et al., 2003). Consequently, the causal attribution seems to change the outcome behavior proposed in the model such as perception of justice, trust, emotions, switching cost and intention to repurchase.

Company Solution and Causal Attributional Impacting the Consumer Responses

Because the recovery effort from a company may impact on consumer's perception and causal attribution also seems to influence consumer's perspective of a brand or company, it is not difficult to recognize that these effects can interact themselves. When the failure was caused by the company, consumers will expect a result from the company and they blame them to solve it. If the firm does not solve the problem consumers will react negatively to the problem. They also may react negatively even when they solve it, since they may perceive the resolution as their obligation.

Nonetheless, if the failure was caused by consumers, and they realized it, even partially, and the company does not recover the problem, consumers will understand that the problem was not the firm obligations. However, when companies recover problems considered not their fault, customers seem to like to see the reaction as a customer gratitude (Morales, 2005) or delight satisfaction (Soscia, 2007). In this case, we understand that consumers will react differently. Their problem will have a higher intention to purchase the product in the future, the switching cost must increase in the perception of trust.

Method

Because firms are selling more packaged products – products with service – it is relevant to investigate this context. Since communication companies commonly sell products such as cellphones and provide access to and this sector has a high incidence of complaints around the world, we considered it to investigate the causal attribution impact on a model.

We tested the relationship proposed on the model and the moderators by surveying college students in a metropolitan city. All the participants had cell phones and had service accounts with telecommunication companies. While student samples can sometimes preclude the examination of important consumer characteristics, in this case, they are particularly relevant and well suited to our study since college students are heavier users of cell phones (Ishii, 2006), being very familiar with the product and cell phone service provider (Jones et al., 2014). Two hundred sixty-five students that had cellphones and service accounts with telecommunication companies participated in our study. Participants were given instructions for accomplishing the electronic survey in the computer lab for course credit. It was highlighted that there are no right or wrong answers and that they are encouraged to respond truthfully to the survey questions.

The survey was presented using the participants' native language and in a Qualtrics software. Four common scenarios were presented to the participants. One group was asked to imagine that they were guilty for the communication signal disappear (stop working) – the client's fault – while the second group imagined that their phone signal was lost because of company's issue – the firm's fault. After that, participants were asked to imagine calling the service provider for a solution to the problem. Half of the participants had the problem solved and the other half did not. Observe that, at the end, all the participants imagined that their cellphones lost their signal and could not call anymore. The causality was different. The solution was also different, half of them had their problems solved (independently of the causality). Before the final survey was administered, a pre-test was done with 20 students to check the manipulation created and the perception of the scenario. Some changes were made in the written survey for a better understanding of the participants.

In assessing the constructs, we employed existing measures in translating and in adapting the wording as necessary to suit the context and the participant's culture. After reading the full scenario, participants responded on a negative emotions scale (four items) from Schoefer and Diamantopoulos (2008), a trust scale (12 items) with three

dimensions – benevolence, integrity, and capacity – from Gefen and Straub (2004), a switching scale (three items) from Lang (2001), and a post-purchase intention scale (three items) from Kuo, Wu, and Deng (2009). All the scales were adapted to the context and anchored by 1 = “I strongly disagree” and 7 = “I strongly agree.”

Related to our analysis, first, we evaluated the measurement model, then the model’s empirical relations were tested by contrasting a SEM that posits our assumptions (client-firm and solved-unresolved together) against a simpler version (solved and unresolved). Since the SEMs are estimated using Maximum Pseudo-Likelihood, a method that yields parameter estimates that are robust to the potential non-normality of the latent constructs (Gourieroux et al., 1984), the statistical contrast is not a classical Chi-square difference test but a scaled Satorra-Bentler version (Satorra and Bentler, 2000). The empirical analysis was implemented in MPLUS (Muthén and Muthén, 2012).

Manipulation Check

First, we checked if participants have read the story carefully and if they have understood that they had to imagine the situation. We checked if their perception was accurate: that when perceived that the fault was theirs, was it indeed theirs; and when it was the company’s fault, was it really the company’s. To do this manipulation check, at the end of the questionnaire, we added two questions. Whose fault was it? and Had the company solved the problem? From the 265 participants, 20 participants did not complete the questionnaire. From the 245 completed surveys, 20 participants who answer that it was their fault for dropping the phone said that it was the firm’s error, and one person who should answer that the company had not solved the problem responded that the company solved the problem. This attribution is consistent with the literature – in severe situations people attribute the problem to a company even if the problem was caused by them – however, it was not the objective of the paper to investigate them, also the small number of people in this condition does not allow us to run a robust analysis. So, we opted not to use these 21 participants’ data which was not aligned to our expected manipulation. Therefore, our following analysis was done with 224 completed questionnaires.

Evaluation of the Measurement Model

To assess the constructs’ relevant items an analysis through Classical Test Theory (CTT) was applied (Table 2). This table also shows the correlation of a particular item with the total score and Cronbach’s alpha. Note that three additional constructs (Integrity, Benevolence, and Competence) appear in the table given that they are manifestations of ‘Trust’.

The item-total correlation column shows each item weight with respect to its corresponding construct. We find that all the items have high correlations (above 0.50). The internal consistency of the many constructs is verified by Cronbach’s alpha that lies above 0.7. This analysis shows that all items are useful in defining their respective constructs. Convergent validity is assessed by verifying loading’s statistical significance at the many constructs and items (Table 2, last column) where such loadings are estimated from a confirmatory factor analysis (CFA) to be outlined in the Estimation

section (see below). Convergent validity is also assessed by checking that AVE (Average Variance Extracted) for each construct is above 0.5, this under (Fornell and Larcker, 1981) approach (Table 3). As can be seen in Table 2, all constructs have AVEs above 0.75 which implies that a construct explains on average 75% of its items total variance (Hair et al. 2011). Discriminant validity (under CTT) is assessed in verifying that two constructs squared correlation (crossed construct explanatory power) lies below each construct's AVE (Fornell and Larcker, 1981).

Table 2 - Properties of Service Failure Items

Construct (Alpha)	Item	CTT Statistics			Convergent Validity
		Mean(SD)	Item-total correlation	Alpha if item deleted	Loading
Negative Emotion (0.83)	The solution that the company gave to me made me angry	4.20 (2.24)	0.7	0.767	2.82***
	I got upset with the solution that the company gave to me	4.26 (2.24)	0.71	0.76	3.94***
	I had a negative feeling with the treatment that the company offered me	4.47 (2.25)	0.71	0.761	3.35***
	I got unhappy with the solution that the company gave me.	4.21 (2.36)	0.52	0.847	1.56***
Post Intention of Repurchase (0.87)	My intention is to continue using this service company.	4.29 (1.78)	0.8	0.804	4.73***
	I would recommend this company's service to my friends and relatives	3.49 (1.77)	0.71	0.841	2.52***
	I could acquire more services from this company if their services interest me	4.58 (1.81)	0.63	0.872	1.93***
	The probability to continue using the services from this company is high	4.28 (1.77)	0.76	0.823	3.45***
Switching cost (0.73)	I use the services from this company because it is the best choice for me (*reverse)	3.42 (1.72)	0.56	0.641	1.79***
	The service quality this company offers is higher than the service quality of other service providers (*reverse)	4.17(1.76)	0.6	0.589	2.68***
	I have grown to like this service provider more than other service providers in this category (*reverse)	4.23 (1.77)	0.51	0.71	1.55***
Justice (0.87)	The employee seemed to be very interested in my problem	3.71(1.77)	0.63	0.88	1.67***
	The company reacted positively when I complained	3.73 (1.71)	0.73	0.84	2.64***
	The solution offered by the company was just.	3.56 (1.85)	0.81	0.81	5.51***
	Overall, the company's complaint-handling procedure was fair	3.65 (1.89)	0.76	0.82	3.98***
Integrity ^A (0.8)	Promises made by the telecommunication company are likely to be reliable	3.81 (1.68)	0.68	0.739	2.67***
	I do not doubt the honesty of this company	3.71 (1.65)	0.59	0.781	1.79***
	I expect that this company will keep promises they make	3.54 (1.75)	0.71	0.723	3.21***
	I expect that the advice given by this company is their best judgment	3.41 (1.82)	0.55	0.801	1.69***

Benevolence ^A (0.82)	I expect I can count on this company to consider how its actions affect me	3.77 (1.72)	0.63	0.783	2.18***
	I expect that this company's intentions are benevolent	3.95 (1.66)	0.73	0.74	3.22***
	I expect that this company puts customers' interests before their own	3.07 (1.71)	0.53	0.828	1.62***
	I expect that this company is well-meaning	3.85 (1.60)	0.7	0.752	2.63***
Competence ^A (0.81)	This company is competent	3.63(1.70)	0.72	0.753	3.51***
	This company understands the market it works in	3.93 (1.68)	0.6	0.805	1.67***
	This company knows about signal telecommunication	3.75 (1.74)	0.64	0.787	1.90***
	This company knows how to provide excellent service	3.22 (1.68)	0.65	0.782	2.59***

Note: ^AThis construct is a manifestation of Trust dimensions
In *** denote 1% of significance levels respectively.

Table 3 – Discriminant Analysis and AVE.

	Switching Cost	Intention of Repurchase	Perception of Justice	Negative Emotion	Satisfaction	Trust
Switching Cost	0.807					
Intention of Repurchase	-0.793	0.851				
Perception of Justice	-0.571	0.639	0.852			
Negative Emotion	0.260	-0.433	-0.607	0.816		
Satisfaction	-0.490	0.598	0.624	-0.528	0.949	
Trust	-0.729	0.825	0.759	-0.494	0.638	0.758

Note: AVEs in the main diagonal. Constructs' correlations in the lower triangular.

Analysis

Given the final sample size of our study (224 cases), we implement the SEM estimation in two steps (Anderson and Gerbing, 1988). The first acts as a dimension reduction step by estimating the eight constructs involved in our structural model. The second implements the estimation of the structural relationships (illustrated in the theoretical background - Figure 1) given the first step estimates.

Instead of estimating our eight constructs assuming the (7 categories) Likert scale items to be continuous, we chose a non-linear CFA approach due to its realistic assumptions regarding the qualitative nature of our items. This approach is also referred in the psychometric literature as Samejima's graded response model (Kamata & Bauer, 2008; Takane & de Leeuw, 1987). In this step the SEM is estimated by Maximum Pseudo-Likelihood, a method that yields parameter estimates that are robust to the potential non-normality of the latent constructs (Gourieroux et al., 1984).

Table 4 represents the core relationships between the latent variables of interest under the two-groups specification, depending on whether the problem was solved or not.

The parameters for each group (not-solved and solved) are identified from around a half of the sample (108 and 116 respectively) which does not raise concerns regarding statistical inference based on asymptotic normality. The two-group (solved and not-solved) model fits our data well since the RMSEA (Root of the Mean Square Error Approximation)

is 0.014 (lower than 0.05), the CFI and TLI are both higher than 0.99, and the Chi-squared statistic's p-value is 0.43. Only one relationship is non-significant; however, it is preserved for cross-group comparison purposes.

Table 4 – Two-group SEM: Problem solved and not-solved

		Solved	Not-Solved	Difference
SC→	PP	-0.43 ***	-0.38 ***	-0.05
TU→	PP	0.44 ***	0.51 ***	-0.07
NE→	PP	-0.07	-0.04	-0.03
NE→	SC	-0.20 **	-0.19 ***	-0.02
TU→	SC	-0.80 ***	-0.83 ***	0.03
PJ→	TU	0.63 ***	0.80 ***	-0.18 **
PJ→	NE	-0.48 ***	-0.47 ***	-0.01

Note: SC = Switching Cost, PP = Post Purchase Intention, TU = Trust, NE = Negative Emotion, PJ = Perception of Justice. In *, ** and *** denote 10%, 5% and 1% significance levels respectively. Column (3) presents solved-unresolved differential parameters

The validity of a two-group model with respect to a one-group alternative is assessed by means of a multi-group differences test. We employ the corresponding Satorra-Bentler scaled Chi-squared test, which rejects the one-group hypothesis (p-value of 0.002). This is also verified by the relation between Perception of Justice and Trust that differs between groups with 95% of confidence (-0.18).

The investigation whether mediation between Perception of Justice and Post-Purchase intention through Negative Emotions and Trust occurred was tested by a Bootstrap procedure (Cheung, 2007). As a result, the mediation's statistical significance was not rejected at 5% and 1% at the solved and not-solved groups respectively. In other words, as proposed in the model, there was a mediation between Perception of Justice and Post-Purchase intention through Negative Emotions and Trust at the two groups (problem solved and not-solved).

Next, we studied the heterogeneous client-firm effects within each of the previous two groups, which led to a four-group specification. In other words, we divided the data into four groups: (1)when the cause of the failure was the customer, but the problem was solved; (2)when the cause of the failure was the customer, but the problem was not solved; (3)when the failure of the product was because of the company, but the problem was solved; and (4)when the failure of product was because of the company, but the problem was not solved; as shown in Table 5. Multi-group differences test contrasting two-group (Table 4) specifications and the four-group (in Table 5) was performed. The Satorra-Bentler scaled Chi-squared statistic rejects the two-group model at 1% significance level. The four-group model has an improved fit, as its RMSEA is closer to zero, the CFI and TLI are equal to 1, and the Chi-squared test of model fit exhibits a p-value of 0.54. Nevertheless, given that each group's sample size is around 50 observations, we obtain parameters' significance by implementing a non-parametric Bootstrap that yields bias-corrected confidence intervals (Efron and Tibshirani, 1986).

Consider columns (3) and (6) in Table 5. They are interpreted as firm's fault parameters relative to client's. As can be seen, firm-client fault heterogeneity is larger when the problem is solved than when it is not. The relation between negative emotions (NE) and post-purchase intentions (PP) illustrates how the client penalizes or rewards the firm

depending on whose fault it is and whether the problem was solved or not. We find that clients reward firm's fault relative to client's (0.27**) had the problem been solved. Similarly, we find that clients penalize firm's fault (relative to client's) by reducing their PP (-0.22*), had the problem not been solved.

Table 5 – Firm – Client Fault parameters differentials within Problem Solved and Not-Solved groups

		Problem Solved			Problem Not-Solved		
		Firm's fault	Client's fault	Difference	Firm's fault	Client's fault	Difference
		(1)	(2)	(3)	(4)	(5)	(6)
SC→	PP	-0.37 ***	-0.74 ****	0.36	-0.32 *	-0.50 ***	0.18
TU→	PP	0.51 ***	0.09	0.42 **	0.53 ***	0.45 ***	0.08
NE→	PP	-0.00	-0.27 **	0.27 ***	-0.12	0.11	-0.22 **
NE→	SC	-0.08	-0.32 ***	0.24	-0.21 **	-0.17	-0.04
TU→	SC	-0.69 ***	-0.98 ***	0.29	-0.84 ***	-0.79 ***	-0.04
PJ→	TU	0.43 ***	0.77 ***	-0.34 ***	0.84 ***	0.72 ***	0.13 ***
PJ→	NE	-0.31 **	-0.56 ***	0.24	-0.48 ***	-0.41 ***	-0.07

Note: SC = Switching Cost, PP = Post Purchase Intention, TU = Trust, NE = Negative Emotion, PJ = Perception of Justice. In *, ** and *** denote 10%, 5% and 1% significance levels respectively. These are obtained from Bootstrap bias-corrected confidence intervals. Columns (3) and (6) present firm-client differential parameters

In summary, the model with four groups has a better fit than the 2 groups model (Satorra-Bentler test). This tells that the interaction between fault and the other construct is heterogeneous according to whose fault it is.

Our results show that comparing if the attribution cause can influence the model when a problem is not solved, only one relationship (path coefficient) was statistically significant across the two groups. Only the perception of justice impacting on trust was significantly different. In other words, the data showed that when a problem occurs there is a perception of justice that affects trust. This effect of perception of justice affects more the trust when the problem is not solved. When the problem is solved, the perception of justice has less effectiveness, although in both cases this relationship is significant.

The results of the comparison of the attribution cause (customer or firm) in the two situations problem solved and not solved shows that three paths were significantly different with $p < 0.05$; the trust and post-intention of repurchase and the negative emotion and the intention of repurchase and the perception of Justice and Trust. Observe that when the fault is from the client, the relationship between trust and intention of repurchase does not exist, because it has been mediated by Switching. While when the fault is from the firm (but is solved), the switching is lower compared with the client's fault group; however, the Trust and Post-Intention of purchase is positively related and is higher. About the Negative Emotion and Post-Intention of Purchase, in both situations, the relationship is negative. The impact of negative emotions on the intention to purchase is higher when it is client's fault than when it is the firm's fault. It means that when the negative emotion is smaller (client's fault), the probability of post-intention purchase becomes higher. Note that Switching is also mediating this path. It seems that when a problem occurred because of a client fault, but the company solves his/her problem, consumers became happy or more neutral (less sad) and have a higher intention to purchase the

product/service again. Related to Perception of Justice and Trust, the data showed that when the problem is solved when the problem was created by the clients, the perception of justice of the failure situation will impact positively on trust, in other words, consumers will perceive the result to the failure as just and this will impact more on the relationship between consumer and firm (trust). This relationship is also positive when the problem was perceived as firms' faults, and the problem is solved however, this impact is much lower than when the attributional cause is related to consumers' fault.

The results of the comparison of the attribution cause (customer or firm) when the company was not able to solve the problem show two paths significantly different with a 95% confidence interval: Negative Emotion affecting the Post-Intention to Purchase and the Perception of Justice influencing Trust. Note that the Negative Emotion had a negative relationship with Intention to Purchase while in a firm's fault, but a positive relationship when the problem was the client. This seems to show that consumers seem to accept that none solution will be given when its client's fault, but it does not accept when the problem comes from the companies. Lastly, when the fault is from the company, the customers expect a solution, so when it is not solved, the perception of justice decrease, weakening the relationship between the customer and the company (trust).

Final Consideration

Service failure is a critical issue for companies (McCollough et al. 2000) because it is cheaper to keep customers satisfied than to reach out to and acquire new customers (Mittal and Kamakura 2001). We identified the lack of the literature in causal attribution studies on situations where the failure occurred because of the customer. To contribute to the understanding of this gap in the literature, this paper studied the repurchase intention model based on service failure where the attribution causes could be from both the client and the company. Because the recovery consumer service could also influence consumer repurchase intention we also investigated in the model. Therefore, in this study, we first proposed a model starting with perception of justice in a failure situation. Then, after testing the model, which used the following constructs perception of justice, negative emotions, trust, switching, cost and post-intention of purchase we ran deeper analysis, comparing four models/scenarios, when the company is able to solve the service failure service, independent of whose fault it is, and when the company is not able to solve it.

Regardless of whose failure (customer's or firm's) results in the issue, customers look for adequate solutions to problems with products or services they have purchased. The impact of which party is at fault for the service failure differs among constructs, as shown in this study. The multi-group comparative analysis provides an understanding of these situations.

As a limitation, our model did not show all the possible relationships (consequences) that attribution cause and distributive justice could influence. We focused on the most important ones, such as emotions and trust. We also added "switching" because it is an important mediator that is not very well explored for evaluating the intention to repurchase.

However, other mediators could be tested. Also, our sample represents some specific cultures and not others, so it should not be generalized. We created a specific situation for the study: a telecommunication service failure. Using other fields could yield different results. In addition, we could not eliminate possible recall bias from other similar situations that the participants could have experienced. Nevertheless, these limitations are minor compared with the benefits of examining the actual effect of the solution and attribution of the failure on consumer intentions. To end, we focus on attribution theory, however, opportunity or cheating behavior constructs can be tested in future studies. Other scenarios such as double deviation and long-term memory could also be included in future studies.

It is important to note that we expected that negative emotion would have a positive relationship with switching intention. In the general model, however, our data showed that this relationship had a negative β . We believe that this result came from the different emotions involved in the different situations (e.g., guilt, regret, sadness, or anger). This proposition could be explored in future studies. Therefore, replication and extension with other methods and variables through other sectors can help to generalize the results.

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