

# THESES OF THE DOCTORAL (PhD) DISSERTATION

## CUSTOMER EVALUATIONS OF RESTAURANT SERVICE FAILURE AND RECOVERY ON ONLINE REVIEW SITES

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## **1. INTRODUCTION OF THE TOPICS AND OBJECTIVE**

Service failure is one line of research that has turned into a major concern for researchers (PREKO-KWAMI, 2015), with a particular interest on the occurrences of recovery following a complaint (CHO et al., 2017). Although there has been extensive research into the service failure-service recovery interaction along with customers' subsequent attitudinal and behavioral changes, there are still a lot of things to learn. While research on failure-recovery in the offline context operates in a matured-paradigm and thus becomes the subject of systematic inquiry, the discipline in the context of digital transformation is still on its early phase.

Over the past decade, there has been a steady increase in the adoption of social network globally. Social networking sites have facilitated the creation of information and enabled the accessibility of information in a more varied format, such as user-generated content which is equally important to impact firm value. The flourishing of user-generated reviews and recommendations platforms have only called forth more investigations toward customer behaviors in the online setting during the past ten years (KAPOOR et al., 2018). In particular, studies under online failure-recovery theme have only begun to surface as early as in 2011, making it an emerging topic with equivocal insights and less-developed areas. As such, firms are yet (or still on the early-stage) to deploy the knowledge of and insights into online failure-recovery for strategic purposes.

Building on the above background, the following is a fourfold-key factor that provokes this study. First, customer relationship management involves maintaining continued customer relations that concerns the expand of firms' customer bases through both customer retention and creation strategies. That being said, establish a balance between retaining existing customers and acquiring new ones are equally vital. However, in an online setting, there is an

involvement of other customers who observe focal customers' service encounters (WU et al., 2015). These other customers can be defined as the observing customers who may witness the unfavorable complaints by focal customers, which can potentially affect their future buying behavior (PAN et al., 2018; WEITZL-HUTZINGER, 2017). The majority of the existing literature on service failure and complaint behavior has focused on the focal customers (Complainants) alone. Less attention has been directed to the important role of other customers (Observants) who also virtually present in the social media landscape (HOGREVE et al., 2019). The services marketing literature provided zero-existence of scientific evidence investigated the effects of firm-initiated recovery efforts on the observants until 2017. More specifically, to date, there exists no research identifies such causal relationship and compares its effects on both Complainants and Observants.

According to the findings of the annually Customer Rage Study, even though only 14% of dissatisfied customers use social media to push information from first-hand experiences, as high as 48% of Observants visit social media to gauge information from their peers (CUSTOMER RAGE SURVEY, 2020). In other words, for every one complaint case posted publicly online, it can potentially influence purchase decisions of three other new customers. Moreover, it is also important to note that while good reviews/ratings are important for 54% of Observants in the pre-purchase evaluation, 65% of Observants report that effective recovery efforts are more desirable to increase customer confidence toward firms (PREMORDIA-GÁL, 2021). As such, negative reviews followed by recovery efforts have a much powerful impact than positive reviews. That is because, reducing potential losses is more favorable than increasing potential gains for majority of customers (CHANG-CHENG, 2021), specifically those who are risk averse. This then necessitates a rigor examination to better understand the

effectiveness of different recovery strategies on both Complainants and Observants.

Second, drawing on the idea that each service failure is not identical to one another and it differs dependent upon customer evaluations (FOUROUDI et al., 2020), the type of service failure should be accounted for when determining the most suitable recovery strategy. However, despite its acknowledgment for the appropriateness of the use in many studies, little is known about the effect of service failure type on the failure-recovery evaluation, specifically in the online setting. Scholars have identified diverse service failure typologies, among which is the outcome-process classification that provides more compelling evidence (HUANG et al., 2020). One stream of research in service marketing literature posits that a service failure can occur along these outcome-process failure types (SMITH et al., 1999). The outcome dimension of a service encounter concerns what customers tangibly receive from the core service delivery, for instance no reserved table found at a fine dining restaurant due to a poor reservation system. The other dimension of a service encounter (i.e., process dimension) mainly looks after the way service is delivered (e.g., a waiter treats the customer in a rude manner during service encounter). Hence, understanding the perception of failures varying on types is critical.

Third, the manner in which the firm responds to a complaint affects customer subsequent attitudes and behavior (HUTZINGER-WEITZL, 2021). A common approach to classify varying types of responses in both offline and online settings is through monetary-psychological recovery strategies (BITNER et al., 1990). Monetary recovery deals with financial and other forms of tangible compensation, whereas psychological recovery provides the offended party with an apology or an explanation. These types of recovery strategies constitute an accommodative response due to its implication of responsibility ownership. Prior research reveals that accommodative responses mitigate

negative reactions and positively affect customer loyalty and brand/firm-customer relationship on Complainants (CHANG et al., 2015) and to some degree, on the observants (HUTZINGER-WEITZL, 2021; WEITZL-HUTZINGER, 2017). However, accommodative responses can also trigger some attitudes and behaviors unfavorable to the firm, for instance, when a promise to not repeat the offense or to provide financial compensation is not fulfilled.

Alternatively, there exists one strategy that is considered as a defensive response, but can potentially be accepted by customers to some extent—despite previous empirical research has produced mixed findings—such as counter-arguing a complaint or denying responsibility for an offense with an appropriate statement. Results of some earlier studies show that denial of responsibility is a more effective approach to resolve an integrity-based violation (e.g., FERRIN et al., 2007; HUTZINGER-WEITZL, 2021; KIM et al., 2004). On the other hand, COOMBS (1999) argues that this approach can only be accepted by customers in a situation where the origination of the problem is difficult to identify. VAN NOORT-WILLEMSEN (2012) further adds that the counter-arguing response serves Complainants with the low-level benefits, given the message it conveys is inclusive of neither financial or emotional/social benefits and tend to neglect the core problem. The findings of LEWICKI et al. (2016) study stress the importance of responsibility acknowledgement by the violator, triggering questions about the pervasiveness of this approach, thus, further investigation is necessary as to under which conditions counter-arguing approach can be effective.

Finally, the relationship between failure-recovery interactions and customers' subsequent attitudes and behavior are hardly determined by its components in isolation, leaves a lot to be desired in explicating the relationship as a whole (HU, 2019; SHIN et al, 2020). To gain a more nuanced understanding of the interactions between the model variables, some contextual factors which

presumed to be particularly influential are crucial to anticipate. Extant research suggests that subsequent attitudes and behavior toward failure and recovery vary substantially given a function of individual characteristics. Depending on their individual differences such as personality traits and values, customers are likely to react in various ways and as a result, can strongly affect their “information processing during brand attitude formation” (KIM et al., 2015). Accordingly, to explain the association between the model variables in failure-recovery evaluations, this study adopts some relevant frameworks, namely self-construal (MARKUS-KITAYAMA, 1991) and tolerance to failure to be treated as key moderating variables.

In addition, within this narrative, the ways in which individuals evaluate failure-recovery interactions engender a number of emotion-contained responses (DEL RIO-LANZA et al., 2009) and these responses can either strengthen or mitigate customers’ subsequent perceptions of relationship quality concerning failure and recovery. On that account, the inclusion of emotion as a mediating variable serves to clarify the underlying mechanism driving the observed relationship, yet past research has mostly overlooked the pivotal role of emotion (SCHOEFER-DIAMANTOPOULOS, 2009). In other words, emotion is the key element that if neglected may explain less of the variance in the outcome variables, therefore it is vital to be included in the conceptual model as a mediating variable between the predictor and outcome variables.

## **The main objectives**

1. Examine the relative interaction effects of failure disconfirmation and perceived loss of both physical and psychological failure types; and perceived recovery justice and corporate credibility of three different recovery strategies on customers' subsequent attitudes and behavior.
2. Assess the moderating effect of desired service quality on failure disconfirmation and perceived loss in influencing customers' subsequent attitudes and behavior.
3. Assess the moderating effects of individual characteristics (self-construal, tolerance to failure) in forming customers' subsequent attitudes and behavior.
4. Test the mediating effects of negative emotions between failure disconfirmation, perceived loss, perceived justice, corporate credibility and customers' subsequent attitudes and behavior.
5. Identify the most effective recovery strategy (Comping, Apologizing, Counter-arguing) to recover from different service failure types (Physical, Psychological)
6. Understand how Complainants and Observants evaluate the service failure-recovery interactions.
7. Observe customers' subsequent attitudinal and behavioral changes at post-service failure level versus post-recovery level (value gain versus value loss).

## 2. MATERIAL AND METHODS

### 2.1. Hypotheses

To achieve the intended outcomes of this study, the following hypotheses were formulated:

- H1a-b.* Desired service quality will have a (negative) direct effect on ( $a_i$ ) failure disconfirmation and ( $b_i$ ) perceived loss after failure. Desired service quality also moderates the relative interaction effects between failure and the outcome variables, i.e., high desired service quality will have a greater (negative) effect on service satisfaction, trust/confidence, patronage intentions when ( $a_{ii}$ ) failure disconfirmation and ( $b_{ii}$ ) perceived loss are high than low.
- H1c.* Desired service quality will have a (negative) direct effect on ( $c_i$ ) service satisfaction after failure; ( $c_{ii}$ ) desired service quality also moderates the relationship between service satisfaction post-failure, post-recovery and patronage intentions, such that the effect on patronage intentions is stronger with increasing value of service satisfaction after failure.
- H2a.* Failure disconfirmation will have a (positive) direct effect on emotion.
- H2b.* Failure disconfirmation will have a (negative) indirect effects on service satisfaction, trust/confidence and patronage intentions.
- H2c.* Perceived loss will have a (negative) direct effect on emotion.
- H2d.* Perceived loss will have (positive) indirect effects on service satisfaction, trust/confidence and patronage intentions.
- H3a.* Service satisfaction post-failure will have a (positive) direct effect on service satisfaction post-recovery.

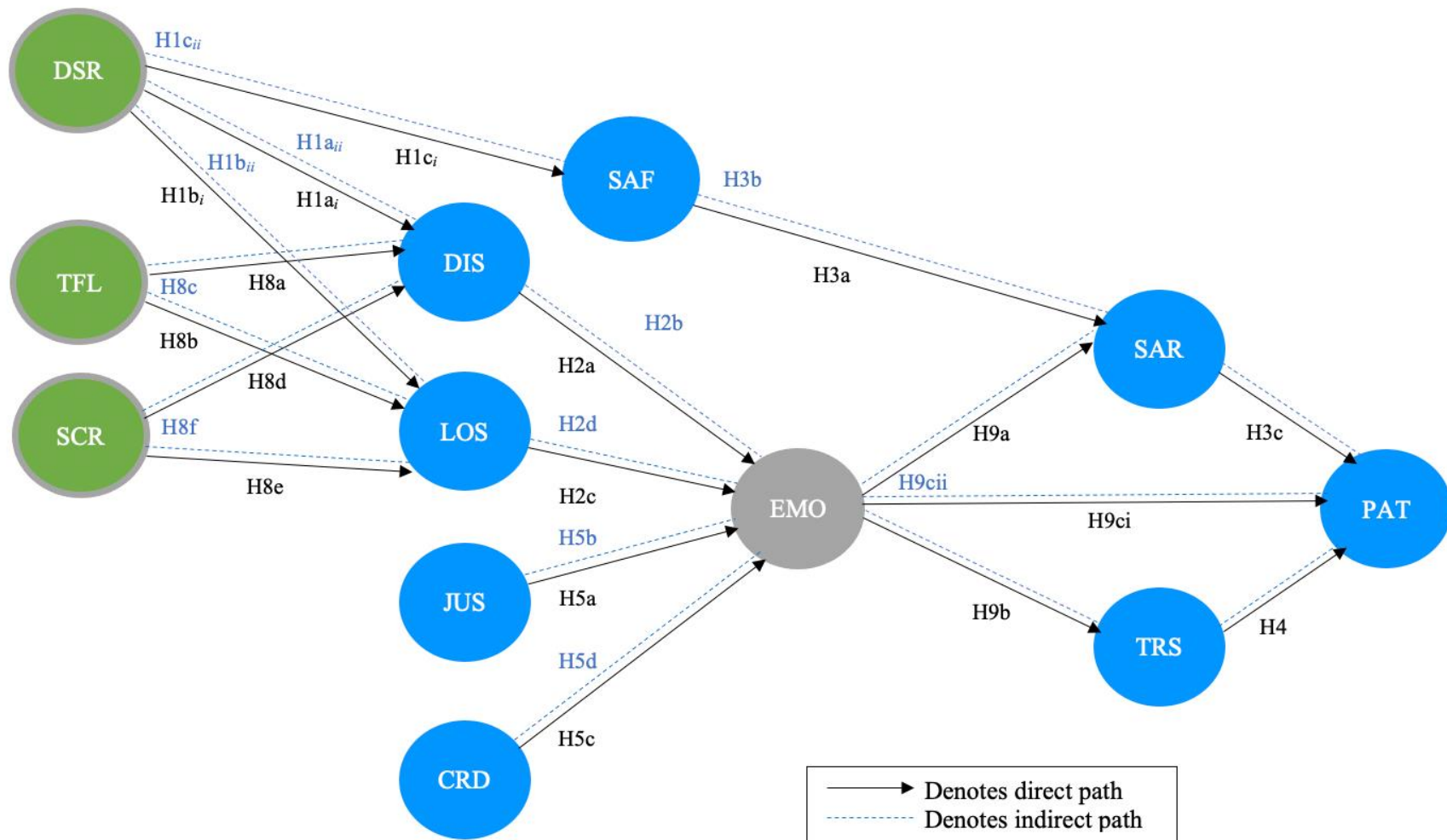
- H3b.* Service satisfaction post-failure will have a (positive) indirect effect on patronage intentions.
- H3c.* Service satisfaction post-recovery will have a (positive) direct effect on patronage intentions.
- H4.* Trust/confidence will have a (positive) direct effect on patronage intentions.
- H5a.* In the presence of a recovery effort (Comping, Apologizing or Counter-arguing), perceived justice will have a (negative) direct effect on emotion, such that when perceived justice is high, emotion is low than high.
- H5b.* In the presence of a recovery effort (Comping, Apologizing or Counter-arguing), perceived justice will have (positive) indirect effects on service satisfaction, trust/confidence and patronage intentions.
- H5c.* In the presence of a recovery effort (Comping, Apologizing or Counter-arguing), corporate credibility will have a (negative) direct effect on emotion, such that when perceived justice is high, emotion is low than high.
- H5d.* In the presence of a recovery effort (Comping, Apologizing or Counter-arguing), corporate credibility will have (positive) indirect effects on service satisfaction, trust/confidence and patronage intentions.
- H6a.* When a physical failure occurs, Comping will better enhance service satisfaction, trust/confidence and patronage intentions post recovery vs. post-failure.
- H6b.* When a psychological failure occurs, Apologizing will better enhance service satisfaction, trust/confidence and patronage intentions post recovery vs. post-failure.

- H6c.* Depending on the customer type, Counter-arguing will vary in enhancing customers' attitude and behavioral intentions post recovery vs. post-failure, such that for Complainants, Counter-arguing will better increase service satisfaction, trust/confidence and patronage intentions than Observants.
- H7a.* For Complainants, different failure types will vary in enhancing value loss. In the same vein, different recovery efforts will vary in enhancing value gain to influence cumulative effects of emotion, service satisfaction, trust/confidence and patronage intentions.
- H7b.* Observants are less sensitive to recovery types; therefore, the effect of each recovery effort will not differ to one another on cumulative effects of emotion, service satisfaction, trust/confidence and patronage intentions.
- H8a.* Following service failure, individual tolerance to failure will have a significant direct effect on failure disconfirmation.
- H8b.* Following service failure, individual tolerance to failure will have a significant direct effect on perceived loss.
- H8c.* Individual tolerance to failure moderates the relationship between failure disconfirmation and perceived loss as well as service satisfaction, trust/confidence and patronage intentions.
- H8d.* Following recovery, individual self-construal (independent or interdependent) will have a significant direct effect on failure disconfirmation.
- H8e.* Following recovery, individual self-construal (independent or interdependent) will have a significant direct effect on perceived loss.

- H8f.* Self-construal (independent or interdependent) moderates the relationship between failure disconfirmation and perceived loss as well as service satisfaction, trust/confidence and patronage intentions.
- H9.* Negative emotions of contempt, anger, disgust will have significant (negative) effects on (a) service satisfaction, (b) trust/confidence and (c) patronage intentions when failure disconfirmation and perceived loss are high than low, but perceived justice and corporate credibility are low than high.
- H10.* The cumulative value is strongest when failure type interacts with the matching recovery effort, such that when perceived justice and corporate credibility are high and failure disconfirmation and perceived loss are low, cumulative value of emotion post-recovery decreases and cumulative values of service satisfaction, trust/confidence and patronage intention increase.

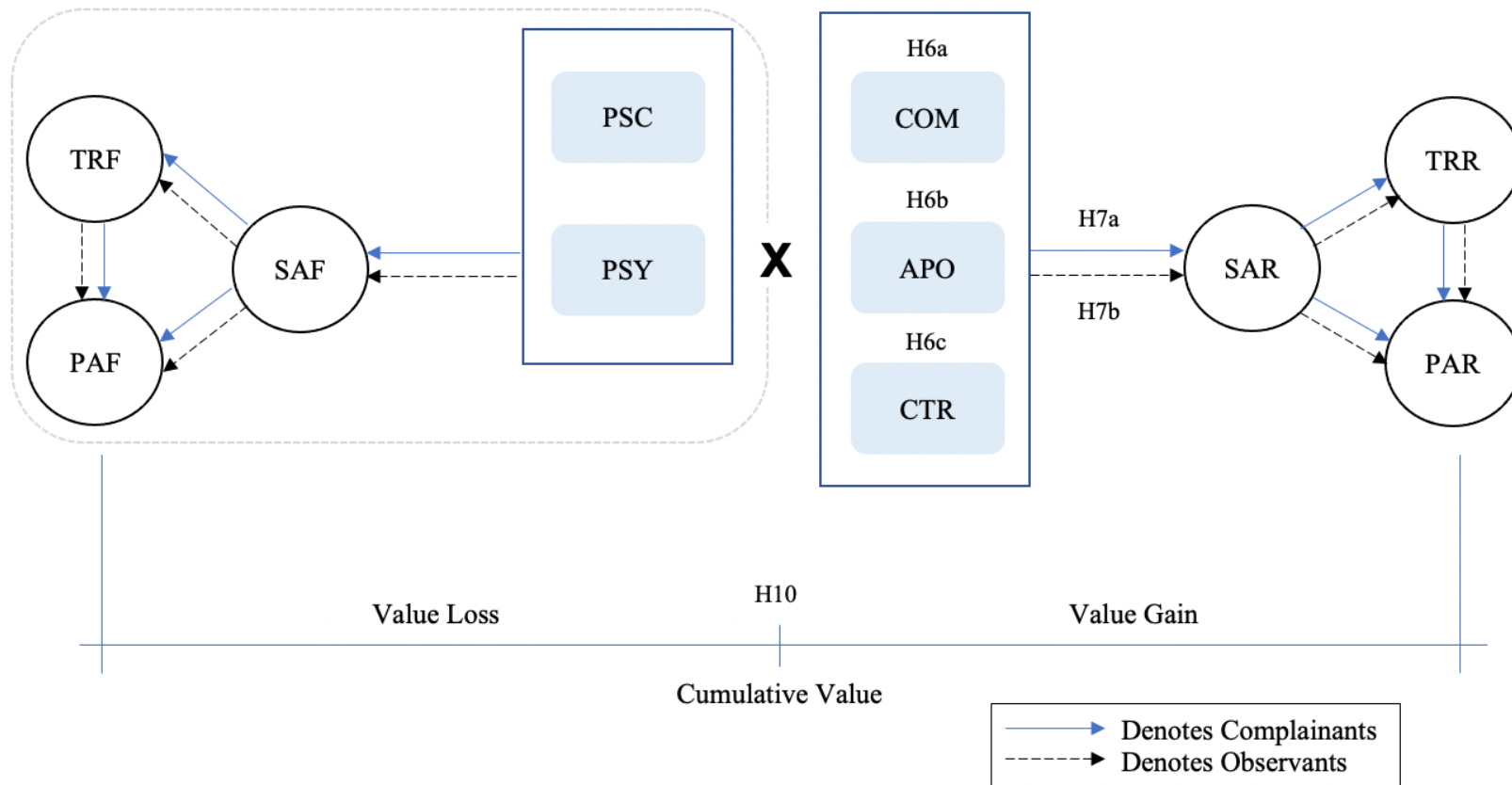
## **2.2. Proposed Models**

Figure 1 and 2 illustrate the focus of the study. Figure 2 focuses on the Structural Equation Model to test hypothesis 1-5 and 8-9 that establishes both direct and indirect paths between exogenous and endogenous variables, while Figure 3 focuses on the Multivariate Regression Model to answer hypothesis 6-7 and 10 where the cumulative values between post-recovery and post-failure outcomes are examined to determine the level of effectiveness between different types of failures, recoveries, and customers.



DSR=Desired Service Quality; TFL=Tolerance to Failure; SCR=Self-construal; DIS=Failure Disconfirmation; LOS=Perceived Loss; JUS=Perceived Justice; CRD=Corporate Credibility; EMO=Emotion; SAF=Service Satisfaction-Failure; SAR=Service Satisfaction-Recovery; TRS=Trust/Confidence; PAT=Patronage Intentions

**Figure 1: A structural equation model of service failure-recovery**



PSC=Physical Loss; PSY=Psychological Loss; COM=Comping; APO=Apologizing; CTR=Counter-arguing; SAR=Service Satisfaction-Recovery; TRR=Trust/Confidence-Recovery; PAR=Patronage Intentions-Recovery; SAF=Service Satisfaction-Failure; TRF=Trust/Confidence-Failure; PAF=Patronage Intentions-Failure

**Figure 2: A multivariate regression model of service failure-recovery**

### **2.3. Research Methodology**

To test the research model and the hypothesized relationships, this research employs an experimental design using a self-administered online questionnaire. Study participants were randomly assigned to one of the treatment groups and exposed to different conditions in the form of failure-recovery scenarios before completing a series of questions that corresponds to each construct in the questionnaire. The experimental method with the application of written scenarios has been extensively used to generate innovative research on management and to develop rigorous yet usable theories (RAMIREZ et al., 2015) as performing laboratory or field experiments have some limitations associated with controlling for extraneous effects that may not reflect the real world (SMITH et al., 1999). The main advantage of using roleplaying scenarios includes reducing data collection difficulties, such as the expense and duration due to low incidence rates and ethical considerations among other things. In services marketing—specifically service failure-recovery studies, there are three methods that are commonly used, namely a self-report memory-based approach, the Critical Incident Technique (CIT) and an experimental procedure (MICHEL, 2001). However, the self-report memory-based approach and the CIT may increase response biases from memory lapses and consistency factors. Considering the nature of service, the degree of the problem and the external factors can be easily controlled and manipulated to establish causality among variables, the scenario-based experimental approach provides a suitable methodology in service failure recovery studies (BITNER, 1990; BLODGETT et al., 1997; CHELMINSKI-COULTER, 2011; MATILLA, 1999).

### **2.4. Experimental Design**

The study features a 2 (service failure types: Physical vs. Psychological) x 2 (customer types: Complainants vs. Observants) x 3 (recovery

efforts: Comping vs. Apologizing vs. Counter-arguing) with an interaction between a three-level between-subjects factorial design (Table 2-3). In a “between-subject” designed study, each study participant is exposed to only one treatment, as opposed to a “within-subject” designed study where each study participant is exposed to multiple treatments (CHARNESS et al., 2011).

## **2.5. Experimental Procedure**

Study participants were invited to take part in the experimental study and randomly assigned to one of the twelve treatment groups. In each treatment group, a structured questionnaire consisting of three main sections: pre-core service encounter (manipulated), core service encounter (manipulated) and post-core service encounter (manipulated) were presented. After evaluating each scenario, study participants completed a set of questions related to the perceived disconfirmation and loss, the perceived justice and quality, the subsequent attitudes and behavior, tolerance to failure and self-construal constructs. In addition, study participants also completed items related to the perceived realism of the scenario and demographics.

## **2.6. Experimental Manipulation**

A total of twelve survey questionnaire versions (the combination of 12 scenarios) that describes pre-core service encounter, core service encounter and post-core service encounter in dining experience during which a service failure and recovery occur were developed. All versions of survey questionnaire were identical except for the three factors or manipulated variables: service failure type, customer type, recovery effort. Each version started with an identical description about a full-service restaurant and its offering and was followed by one of the two hypothetical service failures and one of the three hypothetical recovery efforts. To avoid the outcome bias, failure magnitude was controlled as *severe* in the treatment conditions (ROSCHK-GELBRICH, 2014). Using clearly articulated scenarios, the physical failure condition suggested that the restaurant causes food poisoning, while the psychological failure

condition suggested that one frontline staff behaves in a dismissive way and confrontational manner.

Complainants condition takes a first-person perspective in which study participants were asked to imagine being a focal customer visiting a full-service restaurant and experiencing a service failure described in the scenario, whereas Observants condition takes a third-person perspective in which study participants were asked to imagine being a potential customer visiting TripAdvisor page of a full-service restaurant and observing a negative review about a recent service failure. Furthermore, in the comping effort condition, the focal customer receives a monetary compensation (i.e., a complimentary table in order to reperformance for a failed service). In the apologizing effort condition, the focal customer is offered an apology and empathy, and in the counter-arguing effort condition the focal customer is responded with a disavowal of responsibility with explanation in an appropriate manner.

## **2.7. Population and Sample**

The study involved quota-based convenience samples of the full-service restaurant customers. There was no specific inclusion or exclusion criterion in defining an eligible study participant to enroll in the experimental study. With regard to the sample size, in social science research, sample size and power are two key elements of study design. Sample size influences two statistical premises: the precision of study estimates and the power of the study to draw conclusions. The power of a study refers to “the statistical power of a significance test as the long-term probability of rejecting the null hypothesis, given the effect size in the population, the chosen significance level, and the number of participants tested” COHEN (1992). To achieve research objectives and test the hypotheses, this study performed two analyses: Partial Least Square-Structural Equation Modelling/PLS-SEM and Multivariate Analysis of Variance/MANOVA (see also under Data Analysis for further discussion). For the

purpose of running a well-powered study (i.e., 80%) in the two analyses, following rule of thumbs must be met:

- Each cell in a factorial design should have a minimum sample size of 20 for medium effect sizes (COHEN, 1988). As there are twelve cells with three level between-subject factors will be evaluated in this study, at least a sample size of 240 is required
- The critical sample size for PLS-SEM is  $N=200$  (HAIR et al., 1998)

During the data collection process, there were several limitations in setting-up the quota for each cell. Data collection was carried out online, and there were no available features to automatically limit the number of responses per cell in the survey tool used to build the questionnaire. As a result, quota control had to be performed manually. To ensure an even distribution of participants across all cells, different survey link was randomly disseminated every day. This process aimed to prevent any individual cell from having a significantly high or low number of participants, therefore maintaining a balanced representation across all cells, with the exception of cell group number 7 which has a slightly high number of participants (Table 1).

**Table 1: Sample size**

<b>Cell Design (Between Subject)</b>		
<b>Cell Group #</b>	<b>X</b>	<b>N=</b>
1	X <sub>137</sub> (Physical – Counter Arguing – Complainants)	40
2	X <sub>237</sub> (Psychological – Counter Arguing – Complainants)	37
3	X <sub>247</sub> (Psychological – Counter Arguing – Observants)	41
4	X <sub>245</sub> (Psychological – Comping – Observants)	40
5	X <sub>246</sub> (Psychological – Apologizing – Observants)	35
6	X <sub>135</sub> (Physical – Comping – Complainants)	40
7	X <sub>136</sub> (Physical – Apologizing – Complainants)	53
8	X <sub>147</sub> (Physical – Counter Arguing – Observants)	35
9	X <sub>145</sub> (Physical – Comping – Observants)	35
10	X <sub>146</sub> (Physical – Apologizing – Observants)	40
11	X <sub>235</sub> (Psychological – Comping – Complainants)	41
12	X <sub>236</sub> (Psychological – Apologizing – Complainants)	41
<b>TOTAL N = 478</b>		

*Notes: X denotes the level of each factor in the treatment group*

## **2.8. Data Collection Method**

Data collection was conducted from October 2022 to March 2023. The target population of this study is full-service restaurant customers who are also digital platform users. Given that the main objective of this study is to examine the failure-recovery interaction and its behavioral outcomes in an online setting, it is of importance that study participants are also social media usage. Online questionnaires were created and edited in an online survey builder ‘Sogolytics’ and disseminated through online public communities on social media sites such as Facebook groups for students, workers, expatriates, among other groups. Social media is attractive as a research recruitment tool because the interconnected nature of social media enables researchers to reach wider segments of the population (GELINAS et al., 2017) and speed up data collection progress (WERTHEIMER, 2013). There are, however, some risks. One of the biggest risks is that social media allows individuals’ sensitive information to be

exposed that these individuals have a right to keep private. To protect the privacy of potential study participants, no identification numbers or other personal information were required on the questionnaire. Anonymity and confidentiality of study participants were also guaranteed. In addition, data collection was carrying out using quota sampling method, and the sampling frame was set based on gender, age, occupation and location. Study participants were selected based on availability and willingness to take part.

## **2.9. Manipulations and Scenarios**

The experimental manipulations of exogenous variables and the written scenarios utilized in the present study will be explained in the following lists. There are nine different scenarios: (1) Pre-core service encounter scenario; (2) Core Service Encounter – Physical Failure – Complainants; (3) Core Service Encounter – Physical Failure – Observants; (4) Core Service Encounter – Psychological Failure – Complainants; (5) Core Service Encounter – Psychological Failure – Observants; (6) Post-core Service Encounter – Comping Recovery Effort; (7) Post-core Service Encounter – Apologizing Recovery Effort; (8) Post-core Service Encounter – Counter-arguing Recovery Effort – Physical Failure; (9) Post-core Service Encounter – Counter-arguing Recovery Effort – Psychological Failure, as follows:

## 1) Pre-core Service Encounter

An identical scenario was used for all experimental manipulations in the pre-core service encounter, as shown below:

Instruction: “In the following scenario, a dining experience at a restaurant will be described. As you read through the scenario, please imagine the situation described in the text:

*“It is Friday evening and you want to go out for dinner at a restaurant with your best friends. As you browse through TripAdvisor to look for some information, you and your friends come across a traditional Italian restaurant with 4.6-star rating according to 2,627 reviews and \$\$\$-price range between HUF 1,900 – HUF 7,000. None of you has visited this restaurant before, but based on the photos and the reviews, you think this restaurant could be an option and your friends all agree with you.”*

## 2) Core Service Encounter - Physical Failure - Complainants

*“You and a group of friends decided to go to this restaurant. Soon after arriving at the Italian restaurant, a waiter directs you to a table and gives you the menu. As you look around the room, some live music is playing in the background and you think “this restaurant has good atmosphere”. A couple of minutes later, a waiter comes to take the order and you order a spaghetti Bolognese for yourself and a large cheese pizza for sharing. After a short period, your meal is served. The waiter has a good attitude. You start eating the spaghetti and as you are just over halfway through the meal, you notice a lingering weird taste in your mouth. You become suspicious that it seems the restaurant does not use fresh ingredients. You stop eating the spaghetti immediately and try the pizza instead. You stay for another one hour at the restaurant to enjoy the night with your friends.*

*When you arrive home, you start feeling an upset stomach. After a few hours, you feel that your condition is becoming worse. You take a rest for the whole day, and when you feel better, you ask your friends if they also have the same symptoms. You think that the service was bad and you would not recommend this place. Then you leave a complaint on TripAdvisor as you feel that other customers need to be informed about your experience.”*

### 3) Core Service Encounter - Physical Failure - Observants

*“You continue reading customer reviews for this Italian restaurant on TripAdvisor. As you scroll down the page, you observe a complaint from a customer.”*

Josh Swain

★★★★★

Soon after arriving at this restaurant, a waiter directed me to a table and gave me the menu. As I looked around the room, some live music was playing in the background and I thought “this restaurant has good atmosphere”. A couple of minutes later, a waiter came to take the order and I ordered a spaghetti Bolognese for myself and a large cheese pizza for sharing. After a short period, our meal was served. The waiter had a good attitude. I started eating the spaghetti and as I was just over halfway through the meal, I noticed a lingering weird taste in my mouth. I became suspicious that it seemed the restaurant did not use fresh ingredients. I stopped eating the spaghetti immediately and tried the pizza instead. I stayed for another one hour at the restaurant to enjoy the night with my friends.

When I arrived home, I started feeling an upset stomach. After a few hours, I felt that my condition was becoming worse that I had to take a rest for the whole day. Bad service! I would not recommend this place!

### 4) Core Service Encounter - Psychological Failure - Complainants

*“You and a group of friends decided to go to this restaurant. Soon after arriving at the Italian restaurant, a waiter directs you to a table and gives you the menu. As you look around the room, some live music is playing in the background and you think “this restaurant has good atmosphere”. A couple of minutes later, a waiter comes to take the order and you order a spaghetti Bolognese for yourself and a large cheese pizza for sharing. After finishing the meal, you stay for another one hour at the restaurant to enjoy the night with your friends. When you realize it is already late at night, you ask for the check and a waiter take away your empty dishes. After a while, the waiter approaches your table and while the booklet with the check is put down on the table, you see there is a 12% extra amount added in your bill. When you ask to the waiter what the extra amount is for, the waiter laughs and starts talking with another staff in front of you, then he says angrily “you know what, don’t give me an attitude, just pay and leave! We believe that the customer is always right, but not in your case!”*

*You think that the service was bad and you would not recommend this place. When you arrive home, you leave a complaint on TripAdvisor as you feel that other customers need to be informed about your experience.”*

## 5) Core Service Encounter - Psychological Failure - Observants

*“You continue reading customer reviews for this Italian restaurant on TripAdvisor. As you scroll down the page, you observe a complaint from a customer.”*

Josh Swain

★★★★★

Soon after arriving at this restaurant, a waiter directed me to a table and gave me the menu. As I looked around the room, some live music was playing in the background and I thought “this restaurant has good atmosphere”. A couple of minutes later, a waiter came to take the order and I ordered a spaghetti Bolognese for myself and a large cheese pizza for sharing. That was a delicious meal. After finishing the meal, I stayed for another one hour at the restaurant to enjoy the night with my friends. When I realized it was already late at night, we asked for the check and the waiter took away our empty dishes. After a while, the waiter approached our table and while the booklet with the check was put down on the table, I saw there was a 12% extra amount added in my bill. When I asked to the waiter what the extra amount was for, the waiter laughed and started talking with another staff in front of us then he said angrily “you know what, don’t give me an attitude, just pay and leave! We believe that customer is always right, but not in your case!”.

I wasn’t rude, off-putting, or otherwise unpleasant so I don’t understand the staff attitude. Bad service! I would not recommend this place!

## 6) Post-core Service Encounter – Comping Recovery Effort

- Instruction - Complainants: *“Within 24 hours after you posted your complaints on TripAdvisor, you received a public response from the restaurant.”*
- Instruction – Observants: *“At the bottom of Josh Swain's complaints you just previously read, you notice there is a public response from the restaurant.”*

Management response

Dear Josh Swain,

Due to the problem in our service 2 days ago, we can offer you a complimentary table service at any time that suitable for you and one companion. Please contact me at +36 70 222 1991.

Sincerely,  
Francesca Totti  
Manager

## 7) Post-core Service Encounter – Apologizing Recovery Effort

- Instruction - Complainants: *“Within 24 hours after you posted your complaints on TripAdvisor, you received a public response from the restaurant.”*
- Instruction – Observants: *“At the bottom of Josh Swain's complaints you just previously read, you notice there is a public response from the restaurant.”*

### Management response

Dear Josh Swain,

I am sorry to learn that you encountered a problem during our service 2 days ago. I understand how frustrating this must have been for you. We value our customers, and this problem should not have happened. I appreciate you making us aware of your negative experience and I apologize for the inconvenience this has caused.

Sincerely,  
Francesca Totti  
Manager

## 8) Post-core Service Encounter – Counter-arguing Recovery Effort – Physical

- Instruction - Complainants: *“Within 24 hours after you posted your complaints on TripAdvisor, you received a public response from the restaurant.”*
- Instruction – Observants: *“At the bottom of Josh Swain's complaints you just previously read, you notice there is a public response from the restaurant.”*

### Management response

Dear Josh Swain,

I went to the restaurant today to specifically check the ingredients used 2 days ago in our kitchen as well as to investigate whether the dish was prepared completely incorrectly or in a way that was unsafe. I also took some random samples for the appetizer, main course and dessert, and all dishes were perfect. We consistently maintain our kitchen clean and keep kitchen package food in prime condition, we use different boxes for meats, seafood, condiments, herbs and dairy products, hot and cold items are kept in separate bags. Our seasonal fruits and vegetables come from a local supplier and we get fresh delivery every morning. For breads we use an artisan bakery who deliver fresh sourdough bread every day except for Sunday, but sourdough bread keeps fresh for at least 3-4 days. We make our own homemade pasta dough and sauces are made fresh every order.

I can confirm that all dishes on Friday evening were prepared as per food safety standard procedure and I can certainly vouch for the freshness of our food.

Sincerely,  
Francesca Totti  
Manager

- 9) Post-core Service Encounter – Counter-arguing Recovery Effort – Psychological
- Instruction - Complainants: “*Within 24 hours after you posted your complaints on TripAdvisor, you received a public response from the restaurant.*”
  - Instruction – Observants: “*At the bottom of Josh Swain's complaints you just previously read, you notice there is a public response from the restaurant.*”

Management response

Dear Josh Swain,

I have been visiting the restaurant in the past two days to specifically investigate whether the service wasn't delivered as per our service standards. I have identified the waiter who was working on Friday evening and who was serving your table. The waiter serving your table has been working at our restaurant for five years and he has been well-trained to provide the best service possible. I also observed his performance during both of his day and night shifts in these past two days and asked for guest feedback randomly. No service mishaps were seen or reported during that period. We have been in business for almost 20 years, but never had such situation. We also have our recruitment standards as well as employee performance monitoring standards which we always consistently follow. We can assure you of our best service at all times.

Sincerely,  
 Francesca Totti  
 Manager

## 2.10. Measurement of Variables

The following Table 2 lists the descriptions of each measurement of construct for the present study.

**Table 2: Descriptions of measurement of constructs for the study**

Model Constructs	Measure/Scale	Source
<b>Desired service quality:</b> (1) Score your expectations of what the service quality would be like: I expected that the quality of service in this restaurant would be...	7-point semantic differential scale, anchored by <i>terrible</i> , <i>average</i> , <i>excellent</i>	SPRENG-OLSHAVSKY (1993, p. 172)
<b>Tolerance to failure:</b> (1) I can't stand people/thing who fall short of my standards ( <b>R</b> ) (2)* I am willing to tolerate an error (3)* I am more likely to overlook a mistake	7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i>	ABNEY et al. (2017, p. 287) with a slight modification

<p><b>Self-construal:</b> <i>Interdependent</i></p> <p>(1) I often have the feeling that my relationships with others are more important than my own accomplishment</p> <p>(2)* I will sacrifice my self-interest for the benefit of the group I am in</p> <p>(3) My happiness depends on the happiness of those around me</p> <p><i>Independent</i></p> <p>(1) I prefer to be direct and forthright when dealing with people I've just met</p> <p>(2)* I'd rather say "No" directly, than risk being misunderstood</p> <p>(3)* My personal identity independent of others, is very important to me</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>SHARIFI-SPASSOVA (2020, p. 1112)</p>
<p><b>Failure disconfirmation:</b></p> <p>(1) Thinking about what you hoped or wanted to find in this restaurant, assess the difference between what you wanted and what you received. Your experience in the restaurant was ...</p> <p>(2) In relation to your experience, make an average assessment of what restaurants in the same category offer and assess your experience. Your experience in the restaurant was ... than the average for the restaurants</p>	<p>7-point Likert scale, anchored at middle and endpoints (<i>much worse than expected - as expected/good - much better than expected</i>)</p>	<p>VELÁZQUEZ ET AL. (2010, p. 327)</p>
<p><b>Perceived loss:</b> Please indicate your overall experience based on the situation described above:</p> <p>(1) The service had an acceptable standard of quality</p> <p>(2)* My experience in this restaurant was not enjoyable (<b>R</b>)</p> <p>(3)* The restaurant did not offer value for money (<b>R</b>)</p> <p>(4) Dining-out at this restaurant makes a good impression on other people</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>SWEENEY-SOUTAR (2001)</p>

<p>(5) The experience enhanced my feelings of well-being</p>		
<p><b>Emotion:</b>  After having experience described above, please indicate how you feel about what just happened:  (1) I have harsh thoughts about the person/thing who was at fault  (2) I feel angry toward the restaurant who wronged me  (3) The wrongful action has made me feel disgusted</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>Emotions of contempt, anger, disgust were adapted from STEPHENS-GWINNER, 1998)</p>
<p><b>Recovery justice:</b>  (1) In resolving the problem, the restaurant gave me what I needed  (2) The outcome I received was not right (<b>R</b>)  (3) The management did not give me the courtesy I was due (<b>R</b>)  (4) The management put the proper effort into resolving the problem  (5) The management had the required knowledge to handle the problem</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>SMITH et al. (1999, p. 363)</p>
<p><b>Corporate credibility:</b>  (1) Given the restaurant's response, I see no reason to doubt its competence  (2) Judging from the restaurant's response, I can rely on the restaurant to favor in the customer's best interest  (3) Judging from the restaurant's response, I believe the restaurant has a good value system</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>XIE-PENG (2009, p. 581)</p>
<p><b>Service satisfaction:</b>  After everything that has happened, all in all, how do you feel about the service you receive from the restaurant?  (1) very dissatisfied – very satisfied  (2) very unhappy – very happy</p>	<p>7-point semantic differential scale</p>	<p>WEITZL et al. (2018, p. 325)</p>
<p><b>Trust/confidence:</b></p>	<p>7-point Likert scale, anchored from</p>	<p>SCHOEFER-DIAMANTOPOULOS (2009, p. 305); WEUN</p>

<p>(1) I would find it necessary to be cautious in dealing with this restaurant (<b>R</b>)</p> <p>(2) I have confidence that this restaurant can be relied upon to meet my needs</p>	<p><i>strongly disagree</i> to <i>strongly agree</i></p>	<p>et al. (2004) with a slight modification</p>
<p><b>Patronage intentions:</b> I would consider this restaurant as an option when I want to dine-out in the future</p>	<p>7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i></p>	<p>BLODGETT et al. (1997)</p>
<p><b>Manipulation check:</b> <i>Perceived realism of the scenario</i></p> <p>(1) I think the situation described in the scenario is...</p> <p>(2) I think that a similar problem would occur to someone in real life</p>	<p>7-point Likert scale, anchored from <i>very unrealistic/unlikely</i> to <i>very realistic/likely</i></p>	<p>GOODWIN-ROSS, (1992); SUNDARAM, et al. (1997)</p>
<p><b>Confounding Check:</b> <i>Failure severity (HESS et al., 2003)</i> For me, the incident was... a mild problem – a severe problem <i>Failure type:</i> Please indicate whether the failure in the scenario describes... (1) food poisoning (1 not at all, 7 a lot) (2) frontline staff behaves in a dismissive way and confrontational manner (1 not at all, 7 a lot) <i>Customer type (SHARIFI-SPASSOVA, 2020):</i> While reading the scenario, your thoughts were about: (1) you yourself (1 not at all, 7 a lot) (2) other person (1 not at all, 7 a lot) <i>Recovery effort:</i> Please indicate whether recovery effort comes in the form of... (1) a complimentary table (1 not at all, 7 a lot) (2) an apology (1 not at all, 7 a lot) (3) a counter-argument with an explanation (1 not at all, 7 a lot)</p>	<p>7-point semantic differential – Likert scales</p>	<p>(ROSCHK-GELBRICH, 2014)</p>
<p><b>Age:</b> (study participants must be 18 years old or above) How old are you?</p>	<p>Age group:</p>	<p>NA</p>

	18-24 (40%); 25-39 (45%); 40-54 (10%); ≥55 (5%)	
<b>Gender:</b> Are you?	Male – 50%; Female – 50%	
<b>Occupation:</b> Which of the following best describes your current working status?	Working full time/part-time (includes entrepreneurs) – 60%; Not working (includes students and housewives) – 40%	
<b>Financial well-being:</b> How do you evaluate your financial situation?	Much worse - A little worse – Average - A little better - Much better than average	
<b>Eating-out frequency:</b> How often do you normally eat-out at a restaurant?	Less than once a month; 1-2 times a month; 3-4 times a month; more than 4 times a month	
<b>OCRs usage:</b> (1) I often search restaurant reviews on the internet (2) Other customers' advices are important for my buying decision	7-point Likert scale, anchored from <i>strongly disagree</i> to <i>strongly agree</i>	HUTZINGER-WEITZL (2021, p. 12)

Note: **R** : reverse coded

*For Observants, relevant questions will be written in the third-person point of view*

*\* Indicator is deleted as alpha value below the .70 threshold*

## 2.11. Pretest and Pilot Test

One pretest and one pilot test were carried out to identify the stimuli and to develop scenarios for the experimental study. Pretest was conducted to identify service failure types and magnitude. In designing service failure stimuli, one of the main objectives was to create two strong scenario manipulations of *severe* failure types that were clearly different in indicating whether the failure in the scenario described an

outcome vs. process failure while avoiding the irrelevant cases, the very minute errors, or the extreme catastrophic incidents that can be considered as outliers. Following the identification of the service failure stimuli, scenarios were developed based on the actual complaint cases posted publicly online on Google reviews. Complaint cases were methodologically selected from 150 full-service restaurants across Hungary, stratified by price range (\$ to \$\$\$\$) and star rating (1.0 to 5.0). To ensure a more robust data, only ten complaint cases were selected per restaurant, which made a total of 1,500 cases.

Each case of the 1,500 selected complaints was then classified based upon which type of failure (i.e., outcome or process) it belonged to. The magnitude of failure was measured in the basis of its significance in influencing negative emotions, negative word-of-mouth (WOM) as well as repurchase intentions. Results revealed that physical failures related to food poisoning (102 cases or 6%) and psychological failures related to frontline staff rudeness (391 cases or 23%) which led to disappointment, frustration/anger and disgust; also, behavioral outcomes such as discouraged fellow customers to try and pledged to never re-patronize were found to occur most frequently. Following this, a physical failure-scenario represents *severe* outcome failure and a psychological failure-scenario represents *severe* process failure were designed for the experimental manipulations. Another pretest objective was to design three different scenarios that represent each recovery strategy: compensating (Comping), offering an apology (Apologizing), denying of responsibility (Counter-arguing).

Pilot test were undertaken to rule out confounding effects which ensure that failure magnitude was approximately similar across two different failure types; to verify manipulations of the three factors; and to assess the reliability and validity of the measurement of the variables. After the pilot test, refinement of the manipulations and questions (e.g., wording, typos, deleting unnecessary indicators) were made accordingly. Each scenario must provide the necessary differences in indicating service failure types, recovery strategies and customer types to determine successful

manipulations. Further, each scenario that combines one of service failure types: (1) Physical, (2) Psychological; one of customer types: (3) Complainants, (4) Observants; and one of recovery strategies: (5) Comping, (6) Apologizing, (7) Counter-arguing was tested on five participants at the minimum; therefore, the pilot study required a total of 60 participants to evaluate all twelve versions of the questionnaire.

## **2.12. Validity-Reliability of Measurements**

Internal consistency of the measurements was estimated by performing Cronbach's coefficient alpha. A rule of thumb if values are above the suggested cut-off .07 indicate internal consistency (HAIR et al., 1995; NUNNALLY, 1978). Confirmatory Factor Analysis (CFA) were used to assess if the observed data fit a theoretical grounded model that specifies the hypothesized causal relationships between latent and observed variables. According to ATKINSON et al. (2011), "the use of CFA to investigate the construct validity of hypothesis-based testing instruments adds a level of statistical precision and can assist in the development of abbreviated forms of an instrument or confirmation of its possible sub-domains" (p. 2). Further, several fit indices were selected to test which CFA model best represented the dataset: (1) root-mean-squared error of approximation (RMSEA), which is a measure of the average of the residual variance and covariance. Good models have RMSEA values that are at or lower than .08; (2) comparative fit index (CFI), an index that falls between 0 and 1, with values greater than .90 considered to be indicators of good fitting models; (3) chi-square test, a lower chi-square value indicates a better fit, given an equal number of degrees of freedom; (4) goodness of fit index (GFI), a measure of fit between the hypothesized model and the observed covariance matrix; (5) adjusted goodness of fit index (AGFI) corrects the GFI, which is affected by the number of indicators of each latent variable. The GFI and AGFI range between 0 and 1, with a value of greater than .90 indicate acceptable model fit; (6) standardized root-mean-square residual (SRMR), the square root of the discrepancy between the sample covariance matrix and

the model covariance matrix, ranges from 0 to 1 with a value of .08 or lower indicate an acceptable model.

### **2.13. Data Analysis**

To test the hypotheses, there are two statistical analyses were performed. Study 1 (PLS-SEM) focuses on the effect of service failure type and magnitude as well as its interaction effects with recovery strategies and other underlying factors that may also explain the interactions on attitudinal and behavioral outcomes. PLS-SEM allows researchers to analyze a simultaneous causal model with interaction effects between theoretical constructs that cannot be observed directly and provide less contradictory results in comparison to traditional regression analysis (RAMLI et al., 2018), while Study 2 (MANOVA) focuses on examining how varying recovery efforts and customer types differ in influencing attitudinal and behavioral outcomes from one another as well as to observe how customers' attitudes and behavior change at post-failure level versus at post-recovery level. MANOVA is widely used in social science research to compare the means of multiple treatment groups with the assumption that either predictor variables or outcome variables are highly correlated (HAIR et al., 1998).

### 3. MAIN FINDINGS OF THE DISSERTATION

#### 3.1. Pilot Test

A pilot test was conducted using a student sample at University of Debrecen across different stages (bachelor, master and doctorate) and different faculties to test the developed scenarios as well as to rule out confounding effects, respectively. A total of 60 respondents were recruited for the pilot test.

#### 3.2. Demographic Characteristics of the Participants

A convenience sample of 478 regular and permanent basis-residents in Hungary, which consists of both Hungarian nationals (50.8%,  $n = 243$ ) and foreigners (49.2%,  $n = 235$ ) across all cities, participated in this study (see Table 3). A slightly higher percentage of the sample was female (54.5%,  $n = 261$ ) and the majority of participants (92.3%,  $n = 441$ ) were cumulatively lied within the age of 18 to 39, a range of age considered representative of people who commonly use online customer review sites and drive full-service restaurant growth, specifically post-pandemic levels (Local Consumer Review Survey, 2022). About 66.3% ( $n = 317$ ) of the participants were unemployed (i.e., students, housewives) as compared to 33.7% ( $n = 161$ ) who were employed. Nearly half of the participants evaluated their financial situation as ‘average’ (49.2%,  $n = 235$ ) in comparison to the majority of people they knew, whereas 32.5% ( $n = 155$ ) were ‘below average’ and 28.3% ( $n = 135$ ) were ‘above average’.

In terms of dining-out frequency, 70% of the participants ( $n = 335$ ) indicated that they typically dined in a full-service restaurant once to four times a month. Based on sources of online restaurant reviews and experience with using them, 88.9% ( $n = 425$ ) reported that they were experienced in utilizing restaurant review sites as their source of online reviews. On the 7-point LIKERT scale, they revealed that they regularly searched restaurant reviews on these websites before going to a restaurant ( $M_{OCRusage} = 4.64$ , T3B = 60.8%); and they affirmed that other customers’ advices were important for their buying decision ( $M_{buyingadvice} = 5.08$ , T3B = 71.7%).

**Table 3: Demographic Profile of the Participants**

<b>Variable, Category</b>	<b>N</b>	<b>%</b>	<b>Variable, Category</b>	<b>N</b>	<b>%</b>
<i>Reside in Hungary</i>	478	100%	<i>Employment status</i>		
<i>Residence status</i>			Employed	317	66.3%
Hungarian nationals	243	50.8%	Unemployed	161	33.7%
Foreigners	235	49.2%	Total	478	100%
Total	478	100%	<i>Financial well-being</i>		
<i>Gender</i>			Below average	155	32.5%
Female	261	54.5%	Average	235	49.2%
Male	217	45.5%	Above average	135	28.3%
Total	478	100%	Total	478	100%
<i>Age group</i>			<i>Eating-out frequency</i>		
18-24	190	39.7%	< once a month	143	30.0%
25-39	251	52.5%	1-2 times a month	191	40.0%
40-54	29	6.1%	3-4 times a month	94	19.6%
Older than 55	8	1.7%	> 4 times a month	50	10.4%
Total	478	100%	Total	478	100%
			<i>OCR usage (T3B)</i>		
			Search online	291	60.8%
			reviews	343	71.7%
			Seek advice from others		

*Note: T3B = Top 3 Boxes “Strongly Agree-Agree-Somewhat Agree”*

### 3.3. Construct Reliability and Validity

Internal consistency was assessed with Cronbach’s alpha ( $\alpha$ ) using PLS algorithm. To indicate a strong internal reliability among the indicator in the measurement model, composite reliability of indicators should exceed or equal to the cut off value of .70 (HAIR et al., 1995). As shown in Table 4, composite reliability values are over the suggested value, indicating a great portion of variances is explained by the construct (FORNELL-LARCKER, 1981; HAIR et al., 1998). However, the

alpha value for self-construal interdependent was found to be below .70 ( $\alpha = .658$ ), which indicated “a poor but acceptable Cronbach’s alpha” (ATHANASIOU-MAVRIKAKI, 2013). Furthermore, Table 4 also shows that the AVE values for all constructs are greater than the threshold of .50, providing evidence of adequate convergent validity (ANDERSON-GERBING, 1988).

**Table 4: Construct Reliability and Validity**

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Failure disconfirmation	.713	.721	.874	.776
Perceived loss	.782	.789	.795	.564
Perceived justice	.785	.790	.852	.536
Corporate credibility	.785	.790	.852	.536
Desired service quality	1.000	1.000	1.000	1.000
Tolerance to failure	1.000	1.000	1.000	1.000
Self-construal interdependent	.658*	.747	.806	.583
Self-construal independent	1.000	1.000	1.000	1.000
Emotion	.815	.847	.864	.519
Satisfaction-failure	.849	.853	.930	.869
Satisfaction-recovery	.898	.901	.951	.907
Trust / Confidence	.705	.759	.789	.559
Patronage intention	.743	.756	.886	.795

Note: \* denotes  $\alpha < .70$

### 3.4. Significance Analysis for the Direct Effects

To test the hypothesized relationship for significance, bootstrapping procedure was performed using a two-tailed  $t$ -distribution and 5,000 subsamples with bias corrected 95% confidence intervals. Bootstrap estimates the spread, shape as well as bias of the sampling distribution of the population from which the sample under study is drawn from. As a 95% confidence interval is assumed, a minimum critical value of 1.65 is ideal for a significance level of 10%. The result of the significance analysis is presented in Table 5.

**Table 5: Significance Analysis of the Direct Effects**

H	Path	Std Beta	Std Error	[t-value]	Inference	95% Confidence Interval – Lower Limits	95% Confidence Interval – Upper Limits
H1a <sub>i</sub>	DSR → DIS	-.090	.049	1.818*	Supported	-.184	.004
H1b <sub>i</sub>	DSR → LOS	.002	.056	.034	Not supported	-.108	.110
H1c <sub>i</sub>	DSR → SAF	-.057	.043	1.315	Not supported	-.144	.025
H3a	SAF → SAR	.489	.049	10.053***	Supported	.388	.580
H3c	SAR → PAT	.141	.046	3.046***	Supported	.051	.232
H4	TRS → PAT	.582	.048	12.019***	Supported	.486	.674
H2a	DIS → EMO	-.063	.049	1.185	Not supported	-.160	.032
H2c	LOS → EMO	-.126	-.131	2.545**	Supported	-.226	-.033
H5a	JUS → EMO	-.289	.060	4.852***	Supported	-.410	-.171
H5c	CRD → EMO	-.138	.066	2.230**	Supported	-.266	-.008
H8a	TFL → DIS	.098	.049	1.989*	Supported	-.002	.191
H8b	TFL → LOS	.013	.046	.238	Not supported	-.076	.105
H8d	SCR-N → DIS	-.065	.050	1.295	Not supported	-.166	.034
	SCR-R → DIS	.130	.050	2.528**	Supported	.026	.225
H8e	SCR-N → LOS	-.130	.051	2.558**	Supported	-.231	-.028
	SCR-R → LOS	.136	.053	2.490**	Supported	.026	.235
H9a	EMO → SAR	-.270	.047	5.756***	Supported	-.360	-.177
H9b	EMO → TRS	-.177	.044	3.965***	Supported	-.264	-.091
H9c <sub>i</sub>	EMO → PAT	-.060	.044	1.361	Not supported	-.147	.027

*Note: DSR=Desired Service Quality; TFL=Tolerance to Failure; SCN=Self-construal; DIS=Failure Disconfirmation; LOS=Perceived Loss; JUS=Perceived Justice; CRD=Corporate Credibility; EMO=Emotion; SAF=Service Satisfaction-Failure; SAR=Service Satisfaction-Recovery; TRS=Trust/Confidence; PAT=Patronage Intention*  
*\* denotes significance level at 10%; \*\* denotes significance level at 5%; \*\*\* denotes significance level at 1%*

Service satisfaction after failure had a significant positive effect on service satisfaction after recovery ( $\beta = .489, t = 10.053$ ), and service satisfaction after recovery significantly affect patronage intention ( $\beta = .141, t = 3.046$ ). Patronage intention was also positively affected by trust/confidence ( $\beta = .582, t = 12.019$ ). Hypotheses H3 and H4 were all significant, demonstrating strong relationships between the latent variables. Thus, H3a, H3c and H4 were fully supported.

Whereas H1, H5, H8 and H9 were only supported partially, since path H1b<sub>i</sub>, H1c<sub>i</sub>, H5a, H8b, H8d<sub>i</sub> and H9c<sub>i</sub> did not establish substantial evidence of a direct effect. Desired service quality had a significant direct effect on failure disconfirmation ( $\beta = -.090, t = 1.818$ ), however the effect was negative, which implicates that when

desired service quality is high, in the presence of service failure, failure disconfirmation is low, thus H1a<sub>i</sub> was accepted. Further analysis showed that there was no evidence that failure disconfirmation had an influence on emotion ( $\beta = -.063, t = 1.185$ ), therefore declining that H2a was true. Perceived loss, on the other hand, had a significant negative direct effect on negative emotion after a service failure ( $\beta = -.126, t = 2.545$ ), providing evidence to support H2c. Negative emotion was also significantly affected by perceived justice ( $\beta = -.289, t = 4.852$ ) and corporate credibility ( $\beta = -.138, t = 2.230$ ), thus supporting H5a and H5c. However, the relationships were negative, suggesting that when perceived justice and corporate credibility are low after a service failure and recovery, negative emotion is high.

Furthermore, negative emotion had negative significant direct effects on service satisfaction ( $\beta = -.270, t = 5.756$ ) and trust/confidence ( $\beta = -.177, t = 3.965$ ) after a service recovery, yet it did not have a direct effect on patronage intention, establishing suffice evidence in supporting H9a and H9b. Tolerance to failure had only a significant positive effect on failure disconfirmation after a service failure ( $\beta = .098, t = 1.989$ ), however it did not establish a significant effect on perceived loss, therefore H8a was accepted and H8b was rejected. Self-construal (both independent and interdependent) had significant direct effects on failure disconfirmation ( $\beta = .130, t = 2.528$ ) and perceived loss ( $\beta = -.130, t = 2.558; \beta = .136, t = 2.490$ , respectively), except for independent self-construal and failure disconfirmation which failed to establish a significant relationship, demonstrating evidence to partially support H8d and fully support H8e.

### **3.5. Indirect Effects: Mediating and Moderating Effects**

Further analyses on the indirect effects were conducted to examine mediating and moderating effects, which provided a deeper understanding of the underlying causal processes that also drove the failure-recovery interaction in influencing customers' emotional experience, satisfaction with the service, trust and confidence toward the restaurant and their likeliness to patronage or re-patronage. The insights were particularly useful in circumstances where direct paths did not adequately capture the full extent of the causal relationship.

Indirect effect is the sequence of the path in which at least one intervening construct is involved. According to BARON-KENNY (1986); JAMES-BRETT (1984), a mediating effect is assessed when a third construct interferes between two other related constructs. The path from the four independent variables: failure disconfirmation, perceived loss, perceived justice and corporate credibility to the three dependent variables: service satisfaction, trust/confidence and patronage intention were observed for a clear interpretation of the mediating role of emotion and service satisfaction post-failure as well as the moderating role of desired service quality, tolerance to failure and self-construal in influencing the three outcome variables. Table 6 lists indirect effects between the independent and dependent variables.

**Table 6: Significance Analysis of the Indirect Effects**

H	Path	Std Beta	Std Error	[t-value]	Inference	95% Confidence Interval – Lower Limits	95% Confidence Interval – Upper Limits
H2b	DIS → EMO → SAR	.030	.023	1.152	Not supported	-.014	.077
	DIS → EMO → TRS	.011	.009	1.074	Not supported	-.005	.032
	DIS → EMO → PAT	.015	.012	1.099	Not supported	-.007	.040
H2d	LOS → EMO → SAR	.053	.024	2.182**	Supported	.006	.100
	LOS → EMO → TRS	.021	.011	1.732*	Supported	.002	.046
	LOS → EMO → PAT	.026	.014	1.851*	Supported	.002	.056
H5b	JUS → EMO → SAR	.136	.032	4.283***	Supported	.076	.200
	JUS → EMO → TRS	.051	.017	3.072***	Supported	.023	.087
	JUS → EMO → PAT	.140	.035	3.982***	Supported	.073	.208
H5d	CRD → EMO → SAR	.065	.032	2.114**	Supported	.003	.130
	CRD → EMO → TRS	.024	.013	1.965*	Supported	.001	.052
	CRD → EMO → PAT	.298	.040	7.452***	Supported	.220	.376
H1a <sub>ii</sub>	DSR → DIS → EMO → SAR → PAT	.000	.000	.685	Not supported	-.001	.000
	DSR → DIS → EMO → TRS → PAT	-.001	.001	.752	Not supported	-.002	.000
H1b <sub>ii</sub>	DSR → LOS → EMO → SAR → PAT	.000	.000	.050	Not supported	-.001	.001
	DSR → LOS → EMO → TRS → PAT	.000	.001	.050	Not supported	-.002	.002
H1c <sub>ii</sub>	DSR → SAF → SAR → PAT	.000	.007	.170	Not supported	-.015	.013
H3b	SAR → SAF → PAT	.070	.025	2.829***	Supported	.023	.122
H8c <sub>i</sub>	TFL → DIS → EMO → SAR	-.055	.023	2.578***	Supported	-.101	-.009
	TFL → DIS → EMO → TRS	-.021	.011	2.147**	Supported	-.044	-.002
	TFL → DIS → EMO → PAT	-.027	.013	2.272**	Supported	-.055	-.004
H8c <sub>ii</sub>	TFL → LOS → EMO → SAR	.007	.035	.481	Not supported	-.054	.071
	TFL → LOS → EMO → TRS	.003	.014	.465	Not supported	-.021	.030
	TFL → LOS → EMO → PAT	.003	.017	.474	Not supported	-.028	.036
H8f	SCR-N → DIS → EMO → SAR	-.004	.025	.442	Not supported	-.057	.042
	SCR-N → DIS → EMO → TRS	-.002	.010	.419	Not supported	-.024	.016
	SCR-N → DIS → EMO → PAT	-.002	.012	.432	Not supported	-.030	.021
	SCR-R → DIS → EMO → SAR	.023	.035	.951	Not supported	-.054	.079
	SCR-R → DIS → EMO → TRS	.009	.014	.896	Not supported	-.022	.033
	SCR-R → DIS → EMO → PAT	.012	.018	.909	Not supported	-.027	.043
	SCR-N → LOS → EMO → SAR	.029	.030	1.050	Not supported	-.039	.080
	SCR-N → LOS → EMO → TRS	.011	.012	1.005	Not supported	-.015	.033
	SCR-N → LOS → EMO → PAT	.014	.015	1.016	Not supported	-.019	.042
	SCR-R → LOS → EMO → SAR	.021	.032	.386	Not supported	-.058	.070
	SCR-R → LOS → EMO → TRS	.008	.013	.365	Not supported	-.022	.031
	SCR-R → LOS → EMO → PAT	.010	.016	.375	Not supported	-.029	.038
H9c <sub>ii</sub>	EMO → SAR → PAT	-.169	.031	5.371***	Supported	-.232	-.108
	EMO → TRS → PAT	-.198	.030	6.716***	Supported	-.257	-.142

Note: DSR=Desired Service Quality; TFL=Tolerance to Failure; SCN=Self-construal; DIS=Failure Disconfirmation; LOS=Perceived Loss; JUS=Perceived Justice; CRD=Corporate Credibility; EMO=Emotion; SAF=Service Satisfaction-Failure; SAR=Service Satisfaction-Recovery; TRS=Trust/Confidence; PAT=Patronage Intention

\* denotes significance level at 10%; \*\* denotes significance level at 5%; \*\*\* denotes significance level at 1%

Mediating effects of emotion were all significant on service satisfaction, trust/confidence and patronage intention for perceived loss ( $\beta = .053, t = 2.182$ ;  $\beta = .021, t = 1.732$ ;  $\beta = .026, t = 1.851$ , respectively), perceived justice ( $\beta = .136, t = 4.283$ ;  $\beta = .051, t = 3.072$ ;  $\beta = .140, t = 3.982$ ) and corporate credibility ( $\beta = .065, t = 2.114$ ;  $\beta = .024, t =$

1.965;  $\beta = .298$ ,  $t = 7.452$ ), thus H2d, H5b and H5d were confirmed. However, emotion did not demonstrate any significant mediating effects on the three outcome variables for failure disconfirmation, therefore H2b was rejected. Although significant direct effects were not found between emotion and patronage intention, the significant indirect effects highlighted the role of service satisfaction ( $\beta = -.169$ ,  $t = 5.371$ ) and trust/confidence ( $\beta = -.198$ ,  $t = 6.716$ ) towards restaurant services in influencing customers' purchase decision after a service failure and service recovery, validating H9c<sub>ii</sub> conclusively.

Moderating effects of tolerance to failure had significant indirect effects on the relationship between failure disconfirmation and service satisfaction ( $\beta = -.055$ ,  $t = 2.578$ ), trust/confidence ( $\beta = -.021$ ,  $t = 2.147$ ) as well as patronage intention ( $\beta = -.027$ ,  $t = 2.272$ ), implying that tolerance to failure changed the strength or direction between those variables, but it did not explain why the relationship between those variables occurred. Whereas, tolerance to failure did not change the strength or direction of perceived loss in affecting the three outcome variables, confirming H8c only partially. Furthermore, desired service quality and self-construal (interdependent and independent) were also not found to have any significant moderating effects on the relationship between the independent and outcome variables, thus rejecting H1a<sub>ii</sub>, H1b<sub>ii</sub>, H1c<sub>ii</sub> and H8f. Satisfaction during the failure phase, on the other hand, appeared to indirectly influence patronage intentions by way of the satisfaction derived from the recovery phase, confirming to accept H3b.

### **3.6. Evaluation of Value Loss vs. Value Gain**

To identify which recovery effort is most effective to redeem from a particular type of service failure as well as the person who perceived the failure, evaluation of customer value loss after a service failure vs. customer value gain after a service recovery were carried out. As reported by HOFFMAN-KELLEY (2000), that not one of service recoveries are identically effective in resolving different types of service failures. According to these authors, the service recovery evaluation can be depended upon a range of different situational factors, such as the service failure types (BITNER et al., 1990; GOODWIN-ROSS, 1992) and the perception of the recovery effort by the customer (BOSHOFF-LEONG, 1998; MATTILA, 1999).

The effectiveness of different types of recovery efforts (Comping vs. Apologizing vs. Counter arguing) on outcome failure (Physical) vs. process failure

(Psychological) and Complainants vs. Observants were analyzed using a paired-samples *t*-test. The paired-samples *t*-test is performed when the effects of a matched-pairs design between two treatment conditions are compared to determine if significant differences between the two groups occur. For performing a paired-samples *t*-test, only 35 participants per cell were included to meet the assumption of normality.

Hypotheses H6, H7 and H10 propose that the effect is strongest when the recovery type (Comping, Apologizing, Counter-arguing) and failure type (Physical, Psychological) match in kind which suggests that the recovery effort and failure type interact well on the “recovery effect of compensation” (ROSCHK-GELBRICH, 2014). The recovery effect of compensation is defined as “the difference between post-recovery customer reactions and post-failure customer reactions”. It can also be seen as a cumulative effect value indicating the increase in customer responses (emotion, satisfaction, trust, patronage intention) affected by the recovery effort, after taking into consideration the decrease in customer responses affected by the failure. Table 7, 8 and 9 present research findings of hypotheses H6, H7, H10 testing.

According to DONNENWERTH-FOA (1974), customers feel more satisfied when an effort or a resource they give out matches the effort or resource they gain in return. The evaluation of value loss vs. value gain shows that regardless the failure type, apologizing recovery effort (*Physical*:  $MD_{saf/r} = -.826, p = .000$ ;  $MD_{trsf/r} = -.491, p = .016$ ;  $MD_{patf/r} = -.736, p = .004$ ; *Psychological*:  $MD_{saf/r} = -1.250, p = .000$ ;  $MD_{trsf/r} = -.790, p = .000$ ;  $MD_{patf/r} = -.705, p = .002$ ) is most desirable for the customer (both Complainants and Observants), followed by comping recovery (*Physical*:  $MD_{saf/r} = -.613, p = .003$ ;  $MD_{trsf/r} = -.384, p = .025$ ;  $MD_{patf/r} = -.395, p = .058$ ; *Psychological*:  $MD_{saf/r} = -.534, p = .000$ ;  $MD_{trsf/r} = -.220, p = .098$ ;  $MD_{patf/r} = -.492, p = .022$ ), hence supported H6b, but rejected H6a. Counter-arguing, however, is acceptable as a way to recuperate only in the presence of physical failure ( $MD_{saf/r} = -.477, p = .000$ ;  $MD_{trsf/r} = -.374, p = .002$ ;  $MD_{patf/r} = -.450, p = .001$ ). It is less desirable for the customer when a process (Psychological) failure occurs.

Furthermore, after a physical failure, the three recovery efforts: Comping; Apologizing; and Counter-arguing exhibited strong significant cumulative values of perceived justice ( $M_{comping} = 4.13, p_{dis} = .000, p_{los} = .004$ ;  $M_{apologizing} = 4.17, p_{dis} = .000, p_{los} = .004=3$ ;  $M_{counter-arguing} = 4.07, p_{dis} = .000, p_{los} = .023$ ) as well as corporate credibility

( $M_{comping} = 4.25$ ,  $p_{dis} = .000$ ,  $p_{los} = .003$ ;  $M_{apologizing} = 4.33$ ,  $p_{dis} = .000$ ,  $p_{los} = .001$ ;  $M_{counter-arguing} = 3.96$ ,  $p_{dis} = .000$ ,  $p_{los} = .062$ ) relative to the value of failure disconfirmation and perceived loss, which caused a change in negative emotions ( $MD_{comping} = .736$ ,  $p = .000$ ;  $MD_{apologizing} = .736$ ,  $p = .000$ ;  $MD_{counter-arguing} = 5.35$ ,  $p = .014$ ), service satisfaction ( $MD_{comping} = -.613$ ,  $p = .003$ ;  $MD_{apologizing} = -.826$ ,  $p = .000$ ;  $MD_{counter-arguing} = -.477$ ,  $p = .000$ ), trust/confidence ( $MD_{comping} = -.384$ ,  $p = .025$ ;  $MD_{apologizing} = -.491$ ,  $p = .016$ ;  $MD_{counter-arguing} = -.374$ ,  $p = .002$ ) and patronage intentions ( $MD_{comping} = -.395$ ,  $p = .058$ ;  $MD_{apologizing} = -.736$ ,  $p = .004$ ;  $MD_{counter-arguing} = -.450$ ,  $p = .001$ ). While after a psychological failure, the value of perceived justice ( $M_{comping} = 3.90$ ,  $p_{dis} = .000$ ,  $p_{los} = .000$ ;  $M_{apologizing} = 4.20$ ,  $p_{dis} = .000$ ,  $p_{los} = .000$ ) and corporate credibility ( $M_{comping} = 3.58$ ,  $p_{dis} = .016$ ,  $p_{los} = .002$ ;  $M_{apologizing} = 4.31$ ,  $p_{dis} = .000$ ,  $p_{los} = .000$ ) were found to be significantly different from the value of failure disconfirmation and perceived loss only when interacted with apologizing and comping recovery efforts, but no significant cumulative value established when interacted with counter-arguing recovery, consequently, no increase or decrease in customers' attitude and behavioral intentions. The results, thus, supported H10.

In addition, psychological/process-related failure ( $M_{DIS} = 2.82$ ;  $M_{LOS} = 3.48$ ) was observed to have more influence on failure disconfirmation and perceived loss than physical/outcome-related failure ( $M_{DIS} = 3.10$ ;  $M_{LOS} = 3.76$ ).

**Table 7: Value Loss vs. Value Gain**

Failure Type	Post-failure		Post-recovery				
	IV	M	IV	M ( $p_{DIS}$ ; $p_{LOS}$ )			
				Comping	Apologizing	Counter-arguing	
Physical	DIS	3.10	JUS	4.13 (.000***; .004**)	4.17 (.000***; .003**)	4.07 (.000***; .023**)	
	LOS	3.76	CRD	4.25 (.000***; .003*)	4.33 (.000***; .001**)	3.96 (.000***; .062**)	
	Post-recovery vs. Post-failure (M (p))						
	EMOR - EMOF				.736 (.000***)	.736 (.000***)	.535 (.014**)
	SAR - SAF				-.613 (.003**)	-.826 (.000***)	-.477 (.000***)
	TRSR - TRSF				-.384 (.025**)	-.491 (.016**)	-.374 (.002**)
	PATR - PATF				-.492 (.058*)	-.736 (.004**)	-.450 (.001**)
	Psychological	IV	M	IV	Comping	Apologizing	Counter-arguing
DIS		2.82	JUS	3.90 (.000***; .000***)	4.20 (.000***; .000***)	3.31 (.660; .814)	
LOS		3.48	CRD	3.58 (.016**; .002**)	4.31 (.000***; .000***)	3.52 (.188; .545)	
Post-recovery vs. Post-failure (M (p))							
EMOR - EMOF				.294 (.021**)	1.076 (.000***)	.153 (.215)	
SAR - SAF				-.534 (.000***)	-1.250 (.000***)	-.008 (.953)	
TRSR - TRSF				-.220 (.098*)	-.790 (.000***)	-.153 (.286)	
PATR - PATF				-.395 (.022**)	-.705 (.002**)	-.141 (.303)	

Note: DIS=Failure Disconfirmation; LOS=Perceived Loss; JUS=Perceived Justice; CRD=Corporate Credibility; EMOF/R=Emotion-failure/recovery; SAF/R=Service Satisfaction-failure/recovery; TRSF/R=Trust/Confidence-failure/recovery; PATF/R=Patronage Intention-failure/recovery  
 \*significance level at 10%; \*\*significance level at 5%; \*\*\*significance level at 1%

IV=Independent Variable; M=Mean Score

For Complainants, as the person who experience a service failure and receive a recovery effort first-hand, the effect of recovery effort was largest when physical failure interacted with apologizing recovery effort ( $MD_{emof/r} = .925, p = .000$ ;  $MD_{saf/r} = -.613, p = .016$ ;  $MD_{trsf/r} = -.935, p = .001$ ;  $MD_{patf/r} = -1.387, p = .000$ ), indicating that when an outcome (Physical) failure occurs, a recovery effort in the form of apologizing significantly decreases negative emotions post-failure, increases service satisfaction and trust/confidence towards restaurants, and therefore increases customers' intentions to re-patronage. In addition, there was also a strong significant difference found in the interaction between physical failure and counter-arguing recovery effort ( $MD_{emof/r} = .779, p = .000$ ;  $MD_{saf/r} = -.473, p = .000$ ;  $MD_{trsf/r} = -.408, p = .002$ ;  $MD_{patf/r} = -.554, p = .000$ ). The interaction between physical failure and comping recovery effort was not significantly different: post-failure vs. post-recovery, except for service satisfaction ( $MD_{saf/r} = -.950, p = .001$ ). It suggests that when a physical failure occurs in which customer and food safety are concerned, comping recovery only increases service satisfaction post-recovery, but it does not decrease negative

emotions and does not increase trust/confidence towards restaurants, thus no increase in the intention to re-patronage.

**Table 8: Failure Type x Recovery Effort - Complainants**

<b>Failure x Recovery</b>	<b>Loss/Gain</b>	<b>Mean difference</b>	<b>Std Deviation</b>	<b><i>t</i></b>	<b>df</b>	<b><i>p</i>-value</b>
<b>Physical x Comping</b>	EMOF/R	-.017	1.172	-.064	99	.950
	SAF/R	-.950	1.146	-3.707	99	.001**
	TRSF/R	-.375	.972	-1.726	99	.101
	PATF/R	-.400	1.314	-2.042	99	.105
<b>Physical x Apologizing</b>	EMOF/R	.925	1.125	4.579	99	.000***
	SAF/R	-.613	1.340	-2.547	99	.016*
	TRSF/R	-.935	1.407	-3.702	99	.000***
	PATF/R	-1.387	1.647	-4.690	99	.000***
<b>Physical x Counter-arguing</b>	EMOF/R	.779	1.298	5.755	99	.000***
	SAF/R	-.473	1.004	-4.518	99	.000***
	TRSF/R	-.408	1.218	-3.210	99	.002**
	PATF/R	-.554	1.440	-3.692	99	.000***
<b>Psychological x Comping</b>	EMOF/R	-.175	.697	-1.097	99	.287
	SAF/R	.579	1.294	1.950	99	.067*
	TRSF/R	.184	1.003	.801	99	.434
	PATF/R	-.421	2.009	-.914	99	.373
<b>Psychological x Apologizing</b>	EMOF/R	1.444	1.554	5.340	99	.000***
	SAF/R	-1.409	1.176	-6.885	99	.000***
	TRSF/R	-.939	1.657	-3.256	99	.003**
	PATF/R	-1.424	2.166	-3.778	99	.001**
<b>Psychological x Counter-arguing</b>	EMOF/R	.294	.953	2.368	99	.021*
	SAF/R	-.534	.937	-4.376	99	.000***
	TRSF/R	-.220	1.005	-1.683	99	.108
	PATF/R	-.492	1.601	-2.358	99	.202

Note: EMOF/R=Emotion-failure/ recovery; SAF/R=Service Satisfaction-failure/recovery; TRSF/R=Trust/Confidence-failure/recovery; PATF/R=Patronage Intention-failure/recovery

\* denotes significance level at 10%; \*\* denotes significance level at 5%; \*\*\* denotes significance level at 1%

In the interaction between a process (Psychological) failure and different recovery types, a recovery effort in the form of apologizing had the largest significant difference on the decrease of negative emotions ( $MD_{emof/r} = 1.444, p = .000$ ), hence, on the increase of service satisfaction ( $MD_{saf/r} = -1.409, p = .000$ ), trust/confidence ( $MD_{trsf/r} = -.939,$

$p = .003$ ) as well as re-patronage intention ( $MD_{patf/r} = -1.424, p = .001$ ) in the post-recovery. Whereas, comping recovery had only significant difference in decreasing service satisfaction ( $MD_{saf/r} = .579, p = .067$ ), but no significant difference found in negative emotion, trust/confidence or re-patronage intention between post-failure vs. post-recovery, which indicates when a psychological failure occurs where employee service behaviors are involved, comping recovery effort does not help dissatisfied customers reinstate their satisfaction and loyalty towards a particular restaurant. Counter-arguing recovery effort, on the other hand, had only significant differences in negative emotion ( $MD_{emof/r} = .294, p = .021$ ) and service satisfaction ( $MD_{saf/r} = -.534, p = .000$ ), but the difference was not strong enough to increase trust/confidence and re-patronage intention, providing evidence to partially support H6c. The results further demonstrate that different recovery efforts for different failure types vary in enhancing Complainants' attitude and behavioral intentions, thus, hypothesis H7a was accepted.

**Table 9: Failure Type x Recovery Effort – Observants**

<b>Failure x Recovery</b>	<b>Loss/Gain</b>	<b>Mean difference</b>	<b>Std Deviation</b>	<b>t</b>	<b>df</b>	<b>p-value</b>
<b>Physical x Comping</b>	EMOF/R	1.014	1.372	3.545	49	.002**
	SAF/R	-.717	.939	-3.663	49	.001**
	TRSF/R	-.391	1.187	-1.581	49	.128
	PATF/R	-.217	1.347	-.774	49	.447
<b>Physical x Apologizing</b>	EMOF/R	.570	1.207	1.825	49	.082*
	SAF/R	-.614	1.632	-1.763	49	.092*
	TRSF/R	.136	1.246	.513	49	.613
	PATF/R	.182	1.532	.557	49	.584
<b>Physical x Counter-arguing</b>	EMOF/R	.526	1.073	2.137	49	.047**
	SAF/R	-.500	.898	-2.428	49	.026**
	TRSF/R	-.211	1.217	-.754	49	.461
	PATF/R	.053	1.224	.188	49	.853
<b>Psychological x Comping</b>	EMOF/R	.493	1.187	2.078	49	.049**
	SAF/R	-.720	1.308	-2.753	49	.011**
	TRSF/R	-.400	1.199	-1.794	49	.081*
	PATF/R	-.450	1.260	-2.259	49	.030**
<b>Psychological x Apologizing</b>	EMOF/R	1.156	1.364	4.641	49	.000***
	SAF/R	-1.517	1.178	-7.052	49	.000***
	TRSF/R	-.950	1.605	-3.243	49	.003**
	PATF/R	-.500	2.097	-1.306	49	.002**
<b>Psychological x Counter-arguing</b>	EMOF/R	.308	1.000	1.951	49	.058*
	SAF/R	-.288	.884	-2.058	49	.046*
	TRSF/R	-.313	1.102	-1.668	49	.108
	PATF/R	.000	1.384	.000	49	1.000

Note: EMOF/R=Emotion-failure/recovery; SAF/R=Service Satisfaction-failure/recovery; TRSF/R=Trust/Confidence-failure/recovery; PATF/R=Patronage Intention-failure/recovery

\* denotes significance level at 10%; \*\* denotes significance level at 5%; \*\*\* denotes significance level at 1%

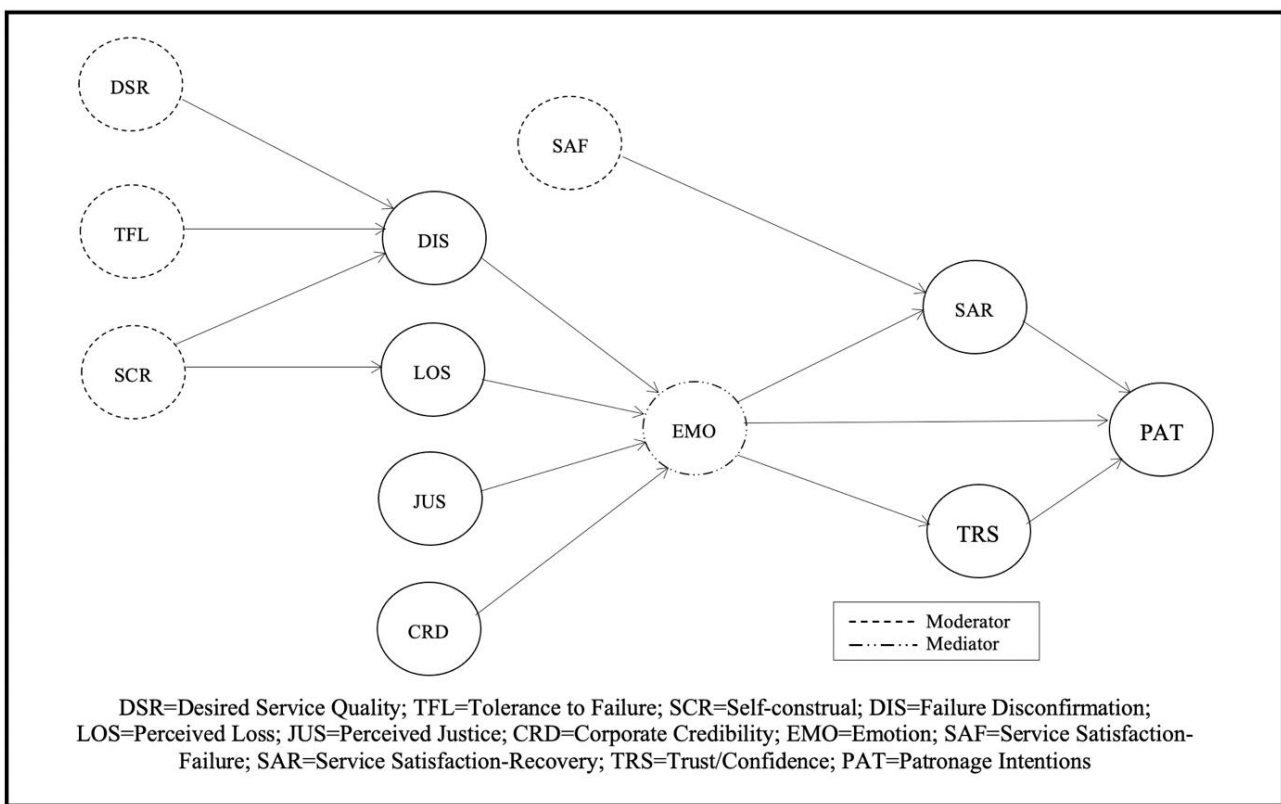
For Observants, who only observe the interaction between the service failure and recovery effort and do not receive the experience first-hand in a service encounter, in the presence of physical failure, different recovery efforts did not differ significantly to one another on cumulative effects of trust/confidence and patronage intention after observing a service failure vs. a recovery effort. Comping, Apologizing and Counter-arguing had only significant differences on the decrease in negative emotion ( $MD_{emof/r} = 1.014, p = .002$ ;  $MD_{emof/r} = .570, p = .082$ ;  $MD_{emof/r} = .526, p = .047$ , respectively) and on the increase in service satisfaction ( $MD_{saf/r} = -.717, p = .001$ ;  $MD_{saf/r} = -.614, p =$

.092;  $MD_{saf/r} = -.500, p = .026$ , respectively). Further, the results show that comping recovery was strongest both in decreasing customer negative emotions and increasing customer service satisfaction, followed by apologizing recovery and at last, counter-arguing recovery.

Whereas, in the presence of psychological failure, the interaction between service failure and different recovery efforts varies in affecting customer responses, therefore, hypothesis H7b was partially supported. Apologizing recovery had the strongest significant difference in lowering negative emotion ( $MD_{emof/r} = 1.156, p = .000$ ) and enhancing the three outcome variables: service satisfaction ( $MD_{saf/r} = -1.517, p = .000$ ), trust/confidence ( $MD_{trsf/r} = -.950, p = .003$ ) and patronage intention ( $MD_{patf/r} = -.500, p = .002$ ). Similarly, comping recovery had also a strong significant difference in negative emotion, service satisfaction, trust/confidence and patronage intention ( $MD_{emof/r} = .493, p = .049$ ;  $MD_{saf/r} = -.720, p = .011$ ;  $MD_{trsf/r} = -.400, p = .081$ ;  $MD_{patf/r} = -.450, p = .030$ ). On the contrary, counter-arguing recovery effort is less appealing for the observant customers to compensate for a loss after a psychological failure.

#### 4. NEW AND NOVEL RESULTS OF THE DISSERTATION

First, while there are many studies on the service failure-recovery interaction in the restaurant industry, there is an insufficient number of studies have been exploring the customer lifecycle, which describes the various stages a customer goes through before, during and after a purchase or transaction, as well as customer individual characteristics and emotional responses. An enhanced comprehensive framework of service failure-recovery dyadic interaction that broadens the scope of failure-recovery context to include the entire customer journey in the restaurant industry has been provided to address the gap (see Figure 3).



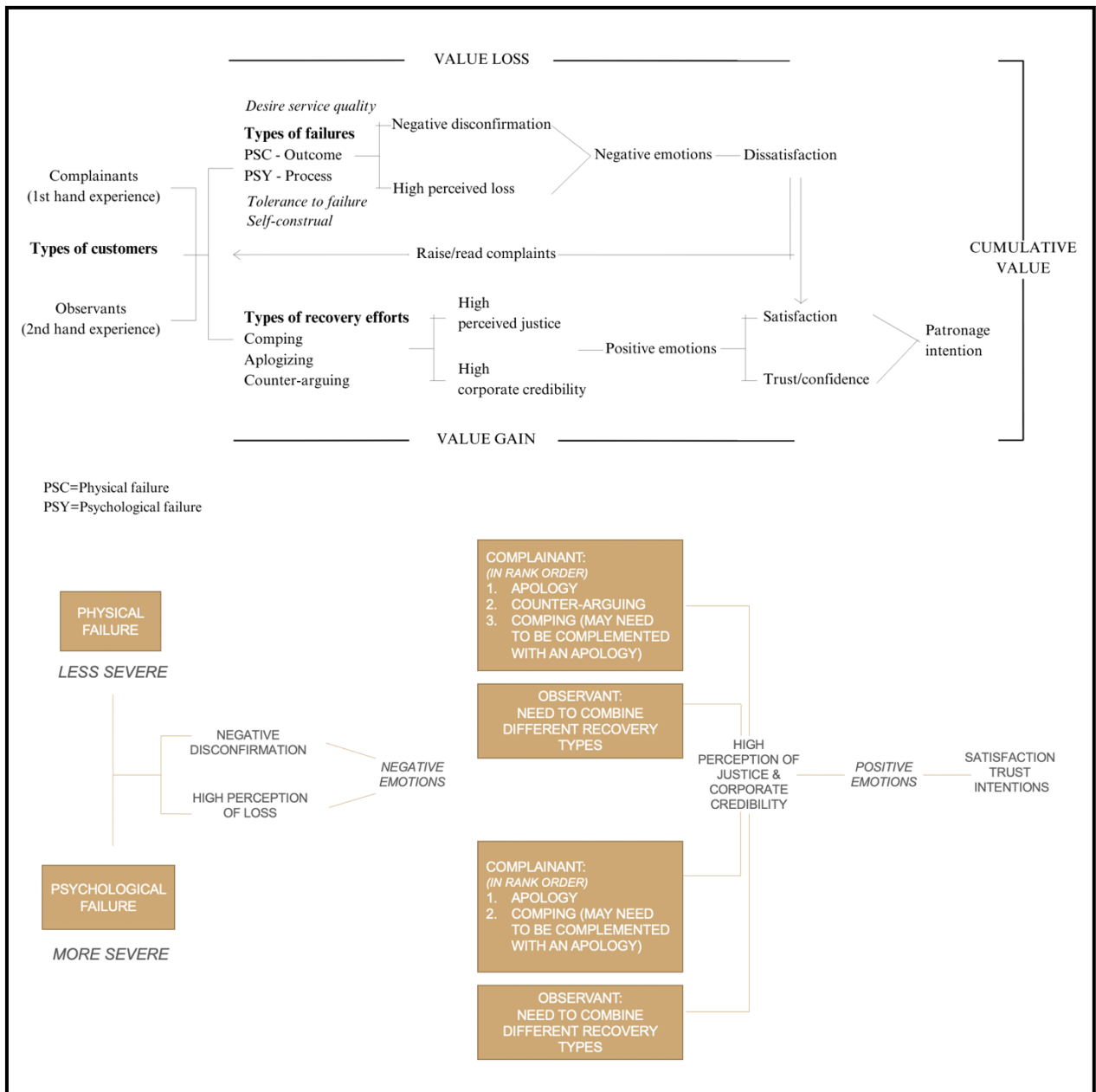
**Figure 3: Framework of service failure-recovery throughout the entire customer journey**

The framework presents the seven broad dimensions that incorporate: (1) customer individual differences: tolerance to failure and self-construal; (2) pre-core service level: desired service quality; (3) core service level: failure disconfirmation and perceived loss; (4) post-core service level: perceived justice and corporate credibility; (5) emotional responses; (6) customer subsequent attitudes: service satisfaction and trust/confidence; (7) customer subsequent behavior: patronage intentions.

The framework identifies the interconnection between these dimensions through both direct and indirect paths and acknowledges three major findings:

- The framework depicts four important drivers of customers' subsequent attitudes and behavior in failure-recovery evaluations: failure disconfirmation, perceived loss, perceived justice and corporate credibility, through emotion-contained responses.
- However, several underlying mechanisms appear to explain the paths between the predictors (failure disconfirmation and perceived loss) and the outcome variables at the failure phase, which seem to be affected by several moderators: customer individual characteristics and initial expectations. These individual factors act as influential factors that regulate or moderate the customer's responses during a failure phase and can help determine how customers will react and behave following a service failure.
- The level of satisfaction with the service after a failure plays a crucial role as a basis in adjusting their satisfaction and intentions when receiving a recovery effort.

Second, considerable research has focused on service failure-recovery interaction and its impacts on customers' subsequent attitudes and behavior, but there are only a few studies focused on the cumulative value of failure and recovery. In every failure-recovery interaction, there will invariably exist two different phases –post-failure and post-recovery, that are conceptualized as value exchanges in which during the failure phase, customers' value loss may lead to a decrease in customers' subsequent attitudes and behavior, while in the recovery phase, customers' value gain may contribute to an increase in their subsequent attitudinal and behavioral outcomes. The outcome gap between these two phases is referred to as cumulative value. The highest cumulative value will be achieved when the exchange resources between the failure type and recovery type complement one another. A cumulative value model has been created to bridge the gap in the existing literature (Figure 4).



**Figure 4: A redesigned cumulative value of the failure and recovery model**

The premise for this model is three-fold. First, every negative review or complaint will be different and service providers will need to assess the situation to respond in the best way. Second, various recovery efforts do not possess the same level of effectiveness in resolving different types of service failures. Third, there are two types of customers who utilize OCR sites, one is to gain information about a brand, product or service and one is to provide that information. In other words, the cumulative value of failure and recovery will be consistently dependent on (1) types of failures, (2) types of recoveries and (3) types of customers in influencing customers' subsequent attitudes and behavior.

### 1. Different types of failures

The study categorizes types of failures into two: physical and psychological losses which were developed based on the outcome- and process-related failures theory. However, no prior study has yet to look into which type of failure has more influence on customer failure disconfirmation and perceived loss. The results show that psychological failure has higher effects on failure disconfirmation and perceived loss than physical failure.

### 2. Different types of recoveries

In contrast to earlier findings in the service failure-recovery literature, the evaluation of value loss vs. value gain shows that regardless of failure types (outcome or process), apologizing recovery effort is noted to be the most effective. Comping can also be effective for both outcome and process failures, but it may need to be complemented with an apology. Counter-arguing, on the other hand, should not be offered to rectify emotional-related problems. A note of caution is due here since the failure magnitude was controlled as “severe” in the study.

### 3. Different types of customers

To retain customers who have raised complaints, service providers should identify the compatible recovery effort with failure type as different recovery efforts may vary significantly in influencing these focal customers’ satisfaction, trust and loyalty. For customer creation (that concerns Observants), service providers may not solely utilize a single recovery effort, but combine several different recovery types to gain potential customers’ trust, hence influencing their buying intentions.

## 5. PRACTICAL APPLICABILITY OF THE RESULTS

The study findings imply that service providers should factor in the underlying aspects such as individual characteristics and initial expectations as well as all components in the entire customer lifecycle from the pre-core, core to post-core service encounter to effectively influence customers' subsequent attitudes and behavior. Further, service providers should evaluate the specific failure situation and consider the potential effectiveness of different recovery options. It suggests that there may be recovery strategies that are more successful in resolving certain types of failures compared to others. By identifying and implementing the most appropriate recovery efforts, service providers can enhance their ability to address specific failures and meet customer expectations. Additionally, understanding the varying impact of different recovery efforts can help service providers allocate their resources effectively. They can focus on implementing strategies that have shown to be more effective in resolving specific types of failures, rather than applying a one-size-fits-all approach. This targeted approach to recovery can lead to better outcomes, such as increased customer satisfaction, loyalty, and retention. Thus, several recommendations can be derived based on the above findings:

1. Improve service quality: it involves ensuring that everything is done correctly from the outset, aiming to provide customers with a seamless experience. By emphasizing getting everything right in the first place, service providers can focus more on preventing problems and addressing potential issues. For example, if service providers are consistently getting complaints about recurring issues, it is essential to assess and review their business performance and core activities and make necessary changes. Service providers can take the opportunity from customer feedback to identify areas for improvement and gauge the overall sentiment towards the business.
2. Clear communication: given that failure disconfirmation is influenced by the gap between customer expectations and the actual service received, service providers should strive to meet or exceed customers' prior expectations consistently to minimize disappointment and dissatisfaction. It is crucial to provide accurate and transparent information regarding products, services, offers, pricing and policies to set proper expectations and avoid misunderstandings. In simple terms, the service provider's promotional activities play a vital role in bridging the image that they want

to portray with the experience that the customers encounter. This highlights the importance of ensuring that the actual service encounter embodies the desired qualities and features described in their marketing efforts.

3. Keep complaints internal, not online: to effectively address customer complaints, it is important to offer multiple ways for customers to talk directly to service providers, rather than letting the issues escalate online where other customers are also present, such as via website, social media, email, customer support and comment/feedback card. According to this study's findings, online complaints can also affect Observants' emotional reactions and their level of satisfaction, unfortunately, recovery efforts may not help service providers to regain customers' trust and future intentions. By keeping complaints internal, service providers can protect the company's reputation and mitigate the potential cost of negative public complaints (i.e., losing the potential customers).
4. Include key CRM questions in a feedback survey: the results imply that, in customer relationship management (CRM), service providers should include questions about disconfirmation, perceived loss, justice and firm credibility, especially after service failures occur. To better understand customer satisfaction, trust and intentions, service providers should gain information about disconfirmation of expectations, perceptions of loss and justice as well as business credibility.
5. Foster customer tolerance: recognize that customer tolerance to failure can vary across individuals. Particularly, interdependent individuals with high tolerance to failure are more likely to empathize with service providers and understand that failures can happen. Encourage a collaborative approach when addressing failures, fostering a sense of teamwork between customers and service providers.
6. Consider self-construal differences: understand that customers' self-construal (independent vs. interdependent) plays a role in their perception of loss following a service failure. Independent individuals may perceive a greater loss compared to their interdependent counterparts. Tailor the recovery strategies and communication approaches to resonate with the respective self-construal tendencies of the target customer segment. The way individuals express their complaints can reveal their self-construal type. For instance, independent individuals tend to use more defensive tones

rather than collaborative ones when voicing their concerns. Service providers may also include self-construal-related questions in the feedback survey.

7. **Prioritize effective recovery:** when trying to recuperate from a service failure, service providers should take both the failure type and magnitude into account. Recognize that customers tend to compare their recovery experience to the initial failure experience. At the same time, to ensure positive service satisfaction during the recovery phase, it is crucial to prioritize effective and efficient recovery efforts. From a practical point of view, service providers may consider creating customer relation documents that integrate potential service failures and their corresponding recovery efforts. For example, consider offering an apology is highly recommended for Complainants, irrespective of the type of failure. To avoid losing the potential customers, it is advisable to supplement an apology with other necessary actions, such as compensation, corrective measures, or preventive actions.
8. **Manage emotions:** understand the mediating role of emotions in shaping customers' attitudes and behaviors. Foster positive emotions during the service encounter and recovery process, as they enhance customer satisfaction and trust/confidence. Conversely, actively mitigate negative emotions to prevent their adverse impact on satisfaction and trust/confidence.
9. **Strengthen trust and confidence:** recognize that trust and confidence in the service provider have a direct effect on customer patronage intention. By ensuring effective recovery, managing emotions, and delivering consistent service quality, service providers can enhance trust and confidence, thereby increasing the likelihood of repeat patronage.

## 6. LIST OF PUBLICATIONS RELATED TO THE DISSERTATION

### Articles, studies

1. PREMORDIA I. – GÁL T. (2023): Food neophilics' choice of an ethnic restaurant: The moderating role of authenticity. PLOS ONE. 18:(5), 21 p.
2. PREMORDIA I. – GÁL T. (2021): Dear Customer, Thank You for Your Review: The Service Failure-recovery Dyadic Interactions in the Restaurant Industry. International Review of Management and Marketing. 11:(3) pp. 49-57, 9 p.
3. PREMORDIA I. – GÁL T. (2021): Negative online customer reviews in restaurant dining experience: what are the determining factors of service failure affecting behavioral intentions? Network Intelligence Studies. 9:(17), pp. 69-83, 15 p.



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## List of publications related to the dissertation

### Articles, studies (3)

1. **Premordia, I., Gál, T.:** Food neophiles' choice of an ethnic restaurant: The moderating role of authenticity.  
*Plos One.* 18 (5), 1-21, 2023. ISSN: 1932-6203.  
DOI: <http://dx.doi.org/10.1371/journal.pone.0281453>  
IF: 3.7 (2022)
2. **Premordia, I., Gál, T.:** Dear customer, thank you for your review: the service failure-recovery dyadic interactions in the restaurant industry.  
*International Review of Management and Marketing.* 11 (3), 49-57, 2021. EISSN: 2146-4405.  
DOI: <http://dx.doi.org/10.32479/irmm.11257>
3. **Premordia, I., Gál, T.:** Experience: What are the determining factors of service failure affecting behavioral intentions?  
*Network Intelligence Studies.* 9 (17), 69-83, 2021. EISSN: 2344-1712.

**Total IF of journals (all publications): 3,7**

**Total IF of journals (publications related to the dissertation): 3,7**

The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of the Journal Citation Report (Impact Factor) database.

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