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Unexpected Item in the Bagging Area

An Examination of Joint Recovery and Customer Satisfaction in Retail Self-Service Technologies

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Acknowledgments

The basis for this research originates from our passion to understand the digital age. As the world moves further into self-service technologies, it is our goal to break down barriers of understanding in joint recovery for future generations. Specifically interested in retail self-service technology, due to the bright future we believe it holds.

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Abstract

With the growth of self-service technologies in retail stores and services, service failure of the technology is seemingly inevitable. This has lead to the question of how these failures influence customers, specifically their satisfaction and loyalty. Customer satisfaction and loyalty drives businesses forward and gives them the competitive advantage.

The aim of this bachelor thesis is to explore if joint recovery has outcomes in customer satsifaction and loyalty in retail self service technologies. Service recovery is an important factor when discussing self-service technology use in buisnesses and therefore this research aims to help further the knowledge and insights on this. The research questions therefore revolve around different aspects that affect customer satifaction and loyalty during service failure with SSTs (self-service technology).

In order to fulfil the purpose and aim of this study, there has been a specific methodology chosen and explained that has been taken from the different theories chosen and prior peer-reviewed literature. The methodology revolves around the survey methodology and involves different research approaches and methods.

The results of the study demonstrate that joint recovery has benefits in customer satisfaction and loyalty. Additionally, the study shows that organizations use of procedural justice will have an impact on customer satisfaction after service failure in retail self service technologies. Results also show that influencing factors for customers to participate in recovery are money and to improve the situation. New findings show that normal attribution behavior switches in retail self-service due to reccuring failure. These are the basis of the conclusions drawn from the research.

Keywords: Self-Service Technologies, Service Failure, Service Recovery, Retail, Customer Loyalty, Joint Recovery, Co-Creation, Customer Satisfaction

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1. Introduction

1.1 Background

Imagine yourself going to the grocery store after a long day of work. You approach the self-service checkout aisle to avoid traditional customer checkout lines. As you follow the steps on the screen, for some unknown reason, the machine does not work properly. Out of frustration and impatience, you finish the transaction questioning whether or not you should use a traditional checkout lane instead. Has this situation influenced your satisfaction and loyalty to the self-service technology? It can be assumed that it has. As illustrated in the example, such failures can result in missed sales opportunities, customer dissatisfaction, and technology abandonment as proven by Zhu et al. (2013). Self service technologies are technological interfaces allowing customers to produce services independent of direct involvement from service employees. For the purpose of this paper, self-service technology refers to a self-service checkout kiosk interface. This disparity proves a problem because the interactive kiosk market is estimated to reach a total market size of US $34.107 billion by 2023. Therefore, the importance of further understanding self-service technology failures and the different recovery outcomes in relation to customer satisfaction and loyalty is imperative.

Factors that are driving this market growth vary. They include an emerging customer base with higher expectations to do things themselves via self-service. Furthermore, minimized wait times offered by self-service checkouts, compared to traffic flows of regular staffed lanes. Self-service kiosks offer customers convenience, privacy and control. There is evidence that SSTs provide many benefits to businesses and organizations. For example, studies show that they help businesses service more customers at higher speeds with fewer resources, thus reducing costs (Yang and Klassen, 2008). In addition, SSTs offer more consistent and stable service not affected by fluctuations of demand or employee mood (Weijter et al., 2007). Because SSTs are important, supermarkets have increasingly deployed self-checkout systems. According to a supermarket survey in the U.S more than 80% of consumers said they would be likely to use an SST and 40% of consumers said they were likely to shop in stores equipped with SST (Wang, 2012). However, high customer involvement can increase service complexity and the probability of service failure (Parasuraman, 2006).

Even the best organizations produce errors while delivering services. This is otherwise known as service failure. Service recovery refers to the actions taken by the organization in response to a service failure according to Wilson et al. (2016). Successful service recovery has been linked to enhanced customer perceptions and customer loyalty (Michel, Bowen & Johnston, 2009). Organizations aiming to nurture satisfied customers should incorporate the three dimension of justice (Rashid, Ahmad and Othman, 2013). Dong et al. (2008) suggests that recovery efforts can

be classified into three types of based on the degree of participation: firm recovery, customer recovery and joint recovery. While few studies suggest empowering the customer to recover from their own failure (otherwise known as customer recovery) leads to greater customer satisfaction (Holloway and Beatty 2003; Meuter et al. 2000). Research has also shown that the degree of participation can be manipulated if a customer believes that a service recovery is important. For example, if it will incur a high cost, then a customer may be more driven to co-produce a resolution with service employees (Cheung and To, 2016). High cost and low cost in regard to monetary value at stake for the customer. All these factors and more are examined throughout the research.

1.2 Research Problem

With the growing industry of retail self-service within businesses and organization, the technologies are steadily being more implemented. The use of interactive platforms to maintain spontaneity in various retail services is fueling adoption. Despite the importance of previous research on firm recovery and customer recovery no previous study has investigated joint service recovery in retail self-service technologies. Thus, this study aims to contribute to the growing body of service recovery knowledge by examining the relationship between joint recovery in relation to customer satisfaction and loyalty in the retail industry of self-service scenarios.

1.3 Purpose

Current literature emphasizes firm's implementation of the three dimensions of justice to increase customer satisfaction after service failure. The purpose of this paper is to explore how joint recovery results in customer satisfaction and loyalty in comparison to firm and customer recovery. Therefore, we are specifically looking at self-service checkout kiosks in grocery retailing while using a self-service retail kiosk. This will be done by different relevant concepts pertaining to customer satisfaction and loyalty. The first concepts revolve of perceieved justices during recovery in service. Furthermore, elements such as attribution, money and perceived benefits of participation and their influence on customer participation will be examined. The final purpose is to study joint recovery specifically with firm recovery and customer recovery. The overall question at hand is then whether or not these elements are tied to customer satisfaction and loyalty. The reason for focusing mainly on joint recovery is twofold. The first to understand to what extend employees should integrate the three dimensions of justice. Secondly, to understand why customers respond to the three types of recovery situations (firm, customer, joint) and aim to see which has better satisfaction. Therefore, this research will fill the theoretical gap for joint recovery the most, along with providing more research on firm recovery and customer recovery.

1.4 Research Questions

1. What dimension of justice is most effective for customer loyalty?
2. What are the influential factors that encourage recovery?
3. Compared to firm and customer recovery does joint recovery result in customer satisfaction and loyalty?

1.5 Delimitations

The focus of this thesis is to explore joint recovery in retail self-service technology can have outcomes in customer loyalty and satisfaction. There are various factors that can be considered when exploring recovery in self-service technology scenarios. For example, consumers reacting differently to technology based failures/recovery efforts than those caused by a human being (Mattila, and Ro, 2011). Moreover, one could also consider the consumers age, sex, personality or background that might influence the decision to engage in joint recovery. Due to time constraints and lack of resources these factors are not explored in this thesis. The time constraint and lack of resrouces are the main limitations that effected the thesis. More time could have provided a larger source for participants during the research, and a more in-depth study of the theories used throughout the research.

2. Theoretical Framework

The next chapter is the theoretical framework. To uncover answers for the research questions, it was necessary to study current literature on all the theories involved. This begins with the justice theories related to service failure within self-service technologies. These justices include three types: outcome justice, procedural justice and interactional justice. Next, customer participation and satisfaction while recovering is examined. Finally, the analytical frame and theories that will drive forward the answer to the research questions is explained. The purpose of this study is that the following theories described are presenting relevant and significant information on how retail self-service markets can recover.

2.1 Service Recovery and Justice Theory

Research into service recovery has been developing with emerging experience economies and customer experience strategies. Service recovery refers to the action taken by the organization in response to service failure defined by Wilson et al. (2016). It is a process where steps are taken as a result of a negative customer perception of an initial service delivery. Proper strategies of recovery have shown to lead to customer satisfaction, loyalty, and positive word of mouth for the organization. (Blodgett et al., 1997; Tax et al., 1998). “Fairness” is an important quality between a customer and service provider. A customer evaluates fairness in terms of various notions of justice. Justice theory has been extensively used as the principal theoretical framework in service recovery research to explain whether a customer has been treated fairly as a result of failure (Tax et al., 1998, Smith et al., 1999). Justice theory states that in every exchange people weigh the inputs against the outcomes and compare them with those of similar situations. If there is an equal balance between them, then the exchange is considered “fair”, but if the outcomes do not meet the person’s expectations, then this results in unfairness. Tax and Brown (1998) found that 85% of satisfaction with a service recovery was due to the justice dimensions of the service recovery process. The dimensions of fairness in justice theory are outcome, procedural, and interactional justice.

2.2.1 Outcome Justice

Distributive fairness, also known as outcome justice, refers to fairness perceived by customers. It is the concern that customers expect compensation for dissatisfaction. Defined by Wilson et al. (2016) as compensation that can take the form of monetary compensation, apologies and reduced charges. Proved through experiment (Kau and Loh, 2006) distributive fairness has the greatest impact on customer satisfaction. Previous study by (Mattila, and Ro, 2011) suggests that compensation offered by front-line employees is less effective since avoiding human interaction is one of the primary motivations for using SST. However, the technique should still be implemented as consumers still expect compensation for loss or effort to resolving problems

within the process (Nyguyen et al., 2012). Previous literature has measured distributive justice by the value and reward of outcomes (Smith et al., 1999).

2.2.2 Procedural Justice

Procedural fairness according to Wilson et al. (2016) is when customers expect fairness in terms of policies, rules, and timelines of the complaint process. Critical elements in procedural fairness include timing, speed and ownership. The evaluation of these elements play a critical role in the outcome of recovery. The first step of any fair procedure is ownership, implicating the company should assume responsibility for the failure (Brown and Tax, 1998). Another critical factor is speed, as prompt solutions are more likely to reach a higher levels of customer satisfaction (Hart et al., 1990). In the service recovery context, procedural justice focuses on the way the outcome is reached and the customer's perception of justice in the process to recover. Study done by (Maxham and Netemeyer, 2002) links procedural justice to customer satisfaction in the recovery context.

2.2.3 Interactional Justice

Interactional fairness is the interactional communications between customer and employees.Customers expect to be treated politely with care and honesty by Wilson et al. (2016). In the service recovery context, fair behaviors include, politeness, concern, explanation, and showing genuine effort to solve the problem. Previous research has confirmed that interactional justice will affect customer loyalty (Tax et al.1998). Furthermore, in self-service technologies, (Mattila, and Ro 2011) found that consumers can react differently to technology based recovery efforts than human recovery efforts. Yet, empathy and apology are ke service recovery strategies to satisfy customers in this fairness. However, unfair attitudes and behaviors can escalate problems and influence customer satisfaction judgements (Smith and Bolton, 1999).

2.2.4 Relevance to Research Question 1

Customers and service providers cannot prevent the incidents that occur during service delivery. However, organizations can prevent customers from leaving dissastfied after a service failure by incorporating the three dimensions of justice. Customers evaluate an organization's use of justice theory during the recovery process as fair and if no justice was used as unfair. Outcome, Procedural and Interactional justice through research have indicated a strong impact on customer satisfaction and loyalty in service recovery. Therefore, we address our first research question which examines what justice dimension is most effectective for customer loyalty. We measured what justice dimension had the highest average of satisfaction, and thus are able to see which dimension would be most effective in retail self service technologies.

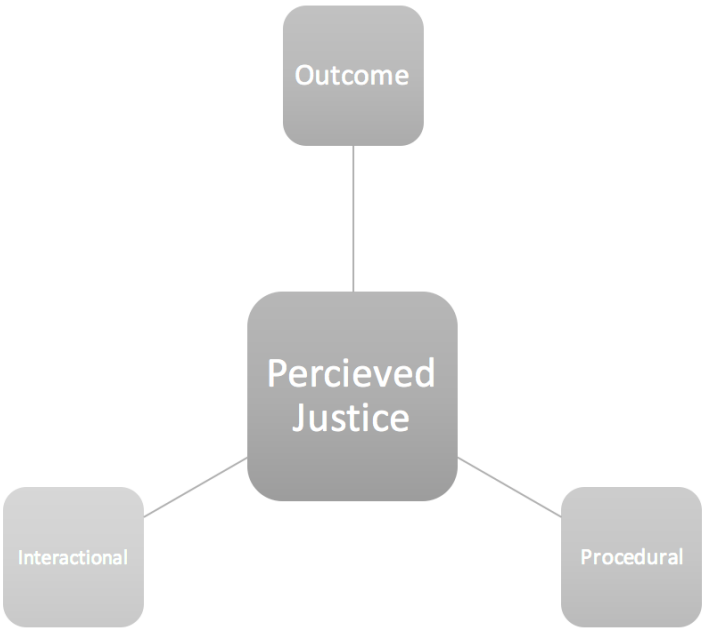


Figure 1: Perceived Justice Model
(Authors' own creation, 2018)

2.2 Customer Participation in Service Recovery

Traditionally, recovery efforts are delivered entirely by the service firm, however customers can play more active roles in service settings. Recovery efforts can be classified into three types based on the degree of participation: firm recovery, customer recovery, and joint recovery Dong et al. (2008). Firm recovery refers to a situation in which recovery actions are taken entirely by the organization. Customer recovery refers to the situation in which the recovery efforts are delivered by customers with little contribution from the firm. Lastly, there is joint recovery which involves both customers and employees to take part of the process in service recovery. Researchers recently have started to explore the effectiveness of co-creating service recoveries. Co-creation rooted from service dominant logic, defined as the process in which a service provider and consumer interact, learn, and work together to create value (Vargo & Lusch, 2004).

2.3 Consumer Perception and Participation with Co-Creation

When customers face failure, they formulate attributions that support the understanding of the future and appear to give them control over that future. In normal situations, people attribute success internally but attribute failure externally to the firms (Clark and Isen 1982). However, it has been found that customers attribute failure to themselves in situations where they have utilized self-service technology (Zhu et al. 2013). When customers are involved in co-producing service, they feel partly responsible for the service.

Attribution theory explains the causal mechanisms that people assign to events. According to Weiner (1985), there are two reasons for attribution one to understand the environment, and to manage the engagement with outcomes. Internal attribution is the extent to which the customer believes their actions are responsible for the SST failure. External, on the other hand, is attributing the failure externally or in this case towards the firm. When customers and the firm jointly co-produce service, customers assign responsibility to the firm and themselves. Perceived control over SST is the degree to which a customer believes they have the ability to adapt the SST to fulfill service needs (Averill 1973). Thus, when a service failure occurs perceived control over the technology suggests that the user has the ability to improve the situation. It refers to the perception of mastery over a technology in a particular situation. Consistent with attribution theory suggesting perceived control is tied to enhanced self-blame (e.g., Weiner, 1985).

Other factors that increase an individual's willingness to co-create include money and perceived benefits. If a customer believes that monetary cost is at risk, then the customer may be driven to co-produce a resolution with service employees to reduce that risk (Cheung and To, 2016). Studies suggest that they find enjoyment and pleasure from being involved in the process (Meuter et al., 2005). In addition, research (Dong et al., 2008) shows that customers can acquire knowledge in the recovery process. Thus, customers who engage in more recovery strategies also learn about other options; this learning broadens their understanding of ways to obtain the desired service.

2.3.1 Relevance to Research Question 2

With the support of previous findings, we try to understand the customers willingness to participate after service failure. Therefore, addressing our second research question which examines what influential factors that encourage recovery. When customers face failure after co-creation, they blame failure internally and such attributions can increase their willingness to participate in recovery. Another influential factor was customers perceived role in the failure meaning if they felt responsible for the failure. Or perceived benefits such as money, improving the situation, and understanding future use of the service. By examining the following factors we can expect to see which were most influential for the individual.

2.4 Customer Satisfaction and Loyalty in Joint Recovery

Customer loyalty is critical to conducting business in today's competitive marketplace and self-service technologies are no exception. Loyalty refers to a deep held commitment to re-buy or reuse a service consistently in the future (Oliver et, al., 1997). Through good and bad times, a loyal customer feels and obligation to preserve a personal relationship. However, service failures are inevitable and the recovery is critical to regain the customers trust. Service failure is found to have a significant negative impact on customer satisfaction and lead to switching behavior. Switching behaviors in response to failures is twofold, switching to another SST or switching to a service employee. Following such failures, recovery is important to rebuild or retain customer satisfaction and loyalty (Maxham & Netemeyer, 2003). Earlier study by Timm (2001) identifies recovering one strategy to building customer loyalty is to recover dissatisfied customers. When recovering a dissatisfied customer, dissatisfaction is replaced with satisfaction a concept linked to loyalty (Soderlund, 2001). A study conducted by Dong et al. (2008) shows, as the level of customer participation increases, customers will evaluate their own work more positively and become more satisfied with recovery outcomes. Additionally, customers evaluate their efforts in the process, which in turn influence their overall satisfaction (Bendapudi & Leone, 2003). When successful recovery work is finished, customers generate feelings of accomplishment and become more satisfied with recovery outcomes.

2.4.1 Relevance to Research Question 3

Lastly, we address our third research question which aims to examine if joint recovery results in customer satisfaction and loyalty compared to firm recovery and customer recovery. Recovery is essential to regain the satisfaction of an unsatisfied customer. It is what drvies the competitive advantage and the success of a business. Using satisfaction as the leading concept linked to loyalty we measure what service recovery had the highest overall satisfaction. The types of service recoveries compared were firm recovery, customer recovery and joint recovery in retail self service failure.

2.5 Analytical Frame

The focus of this thesis is to explore how joint recovery in retail self-service technology results in customer satisfaction and loyalty. Current literature in service recovery fails to examine the outcomes of joint recovery. Our theoretical approach is twofold first, we use Justice theory to explore what perceived dimension of justice consumers feel is "fair" for them to feel satisfied after the recovery. By understanding what perceived justice dimension produces satisfied customers we offer organizations insight to the dimension of Justice that achieves the highest satisfaction after recovery. Then, we further examine factors that influence participation with joint recovery. By taking from attribution theory, perceived control, and concepts in perceived benefits. We then formed a better understanding of the consumer's willingness to participate with the organization in joint recovery. Finally, using customer satisfaction as the leading indicator of future customer loyalty in service recovery. We will be able to see if Joint recovery results in satisfied customers in retail self service scenario in comparison to firm recovery and customer recovery.

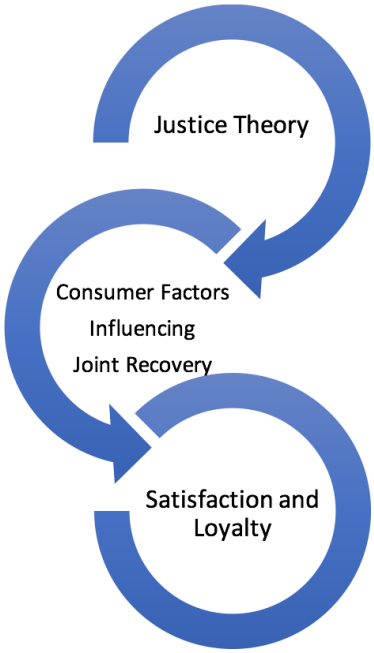


Figure 2: Analytical Frame Examining Joint Recovery
(Authors' own creation, 2018)

3. Methodology

This is the methodology chapter which describes the methodology of the research. To answer the research questions proposed, it was important to choose and follow a strict methodology. Past studies and research conducted have focused on this topic, but not a large amount of work has specifically been studied and published. Therefore, most of the methodology has been formed and decided through the authors using Bryman and Bell's "Business Research Methods" textbook published in 2011. The methodology chapter will begin with the research philosophy, followed by the research approach. Then, the research strategy and method will be further discussed and explained. Next will come an examination of the research strategy pertaining to the inquiry and study design. After this is discussed, the survey techniques will follow including a data collection and pretest description, sampling techniques and the data analysis. The methodology chapter will conclude with an explanation of the research criteria, along with all ethical considerations and criticism of the methodology. Through the literature that revolves around this topic along with the "Business Research Methods" text, the methodology has been formed and is deliberately used to attain the best results for the research to be found during the course of this dissertation.

3.1 Research Philosophy

The first consideration in the methodology chapter is the research philosophy approaches taken. Research philosophy ascertains to "*the development of knowledge and the nature of that knowledge*" (Saunders, Lewis and Thornhill, 2009:18). The knowledge gained during this research will help further the general consensus and understanding of self-service technologies when they fail. For the marketing world that must evolve with the technological advancements of the 21st century, research leading to further understanding of this topic is inevitable. The importance of defining the research philosophy is due to the fact that it can affect how the researcher interprets and thinks the research process, according to Saunders, Lewis and Thornhill (2009).

The first philosophical consideration revolves around the ability of knowledge. This is called epistemology. The whole concept questions whether or not it is ascertainable to obtain 'objective' understandings of the phenomenon studied. The epistemology used throughout this study will be an interpretive approach. Interpretivism, according to Bryman and Bell, 2011 is an alternative to traditional positivist epistemology and instead is "*predicated on the view that a strategy is required that respects the differences between people and the objects of the natural sciences and therefore requires the social scientist to grasp the subjective meaning of social action*" (Bryman and Bell, 2011:57). The research focuses on the part of the social actor, which is the consumer, as much as it has to go with the self-service technology itself. The philosophy will be used to interpret the consumers and truly integrate their interests as diverse individuals.

Since every consumer is different and can never be truly understood, only subjective analysis and the interpretation of the consumers at hand fits this study. For this topic, it is driven by human interests and behavior. Through interpretivism these actions can be rightfully interpreted and used to formulate an answer to the research questions.

The second philosophical consideration is ontology. Ontology relates to how one thinks and refers to the concept of 'reality' and the true nature of social entities (Bryman and Bell 2011). The ontological position that will be taken for this research is constructivism. Constructivism "*asserts that social phenomena and their meanings are continually being accomplished by social actors*" (Bryman and Bell, 2011:62). This is basically implying that reality and social phenomena are constantly changing and being revised through social interaction and social actors. Reality is constructed by one's own views and therefore reality can differ from time to time. Reality throughout this research completely depends on the situation at hand, which will be further discussed throughout the methodology chapter. Reality for this research is the one that the consumers create through experiencing the world of self-service technology. Through using constructivist ontology throughout this research process, the reality will vary due to its interpretation of being a changeable phenomenon that ultimately depends on how one "thinks" about it. This research philosophy along with interpretivism will help drive the research and stand as a guide on how the data is collected, analysed and eventually used. It will influence the entire methodology of the research process.

3.2 Research Approach

The next step is deciding the research approach. The research approach relates to the theories used and considered during the research process. Theories, in a general sense, are explanations of observed and studied regularities (Bryman and Bell, 2011). The theories used are the ones discussed in the theoretical background. After considering these theories, the research approach chosen was the deductive method. The deductive research approach is one of the most commonly used views when examining the relationship of certain theories to research, according to Bryman and Bell, 2011. The theory includes forming hypotheses, or in this case research questions that are backed by theories, and testing them under empirical and theoretical scrutiny (Bryman and Bell, 2011). A clear theoretical position has been created as shown through the research questions and theoretical background. From this, a specific and relevant process of how to collect the data can easily be formed through the deductive research approach that also helps create the entire methodology. The theories mentioned will drive and support the entire research process, therefore definitively qualifying the research approach as deductive.

The advantages of this research approach are very beneficial to this thesis. After reviewing the literature and creating the theoretical background, this research approach allows a possibility to uncover a relationship between the specific theories and the concepts that will be used in the

research design. The deductive approach ascertains a small amount of risk, thus leading to a greater success rate in completing the research process. This also relates to the short amount of time available for the thesis, because this approach in comparison to the other approaches, such as inductive, can require longer periods of time. The testing and subjection of the theories is what will drive the other steps in the research methodology. Furthermore, the deductive theory allows for the concepts of the research questions to be measured quantitatively. This will drive the research strategy, discussed next.

3.3 Research Strategy and Method

The next methodology decision revolves around the research strategy. The research strategy method involves deciding between two methods of how the data will be collected. Generally speaking, it means the basic structure of how the research will be conducted. The two methods are qualitative and quantitative. This is important to decision to define because it helps decide further research strategies. The research method that will be used to collect data is mostly quantitative, but uses some qualitative analysis and slight forms of data collection. Usually interpretivism is a foundation used for purely qualitative research, but this research will also draw on quantitative research. This is called mixed methods research. This study will take a quantitative approach and analyzation to the collection of qualitative data. The main reason for the intertwining of these two approaches is that the questions asked, although in the form qualitative, are prone to subjective reality because it emphasizes personal opinions and judgements. Bryman and Bell specifically confirm that this is possible, revealing a study done and explaining "*it has interpretivist overtones in spite of its use of quantitative research methods*" (Bryman and Bell, 2011:69).

The data collection will be quantitative due to the fact that it will be done through a numerical based scale. The data will be reported through graphical analysis that will help answer the research questions proposed. The study will gain primary data, based on random sampling and using data collection instruments. Through quantitative data collection methods, there will be use of qualitative approaches through a strong use of words, that draw attention to feelings and even emotions. The results will be looked at with a viewpoint of reflexivity, reasoning and motivation. This collection is mostly centered around understanding the specific human behavior, which is how it will be quantitatively analyzed. This qualitative aspect will provide data about real life situations and how people behave in a wider context within them. This is how the mixed research strategy will be implemented, through use of quantitative and qualitative data collection and analyzation.

Therefore research strategy will be a mixed methods research. Due to this, the data was collected through survey research. Survey research is the use of a questionnaire on different cases and at a single point in time to collect the data and connect different variables (Bryman and Bell, 2011).

Through a self-completion questionnaire strategy, all three of the research questions will be targeted. The use of a questionnaire allows for a large variety of data and content to be collected.

3.4 Strategy of Inquiry and Study Design

3.4.1 Inquiry of Theories

This describes how the Theoretical Background chapter was created. The literature that has been chosen relates directly to the research topic and research questions. Through a systematic review, "*an approach to reviewing the literature that adopts explicit procedures"* (Bryman and Bell, 2011:135), the literature was thoroughly reviewed and justified. The literature pertains directly to the research and provided the theories that are used throughout the research. The articles were found through academic search hosts. The keywords used were customer satisfaction, customer recovery, joint recovery, firm recovery, self-service technology failures, recovery justices and a few more. The keywords were used together to find peer-reviewed articles that then related these keywords to one another. These articles then formed the basis of the Theoretical Background which then formed the survey.

3.4.2 Empirical Study Design

There are multiple different frameworks used to collect and analyze data to provide a design for the study. According to Bryman and Bell (2011:81), "*a research design relates to the criteria that are employed when evaluating business research*". This being said, a framework must be chosen to help generate and attain evidence to aid the research question. It is also important to define this because it also holds importance for the connection between the variables addressed, generalization, and overall understanding behavior and what it means in the context of this study. It is the structure the study will follow is called a cross-sectional design. It is a research design method that "*entails the collection of data on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables, which are then examined to detect patterns of association*" (Bryman and Bell, 2011:94). This definition relates the most out of the five business research designs.

Through a cross-sectional design, also referred to as a social survey design, it is probable that the highest value of data for the specific research topic will be collected. The cross-sectional design will follow the guidelines and descriptions underlined in Bryman and Bell (2011). It will be collected empirically and will be fully outlined in the following chapter. The research design will have more than one case, meaning a large sample pool as discussed further in the next sections. The research design will also happen at a single point in time, meaning all the data will collected within days. The data will have "*a systematic and standardized method for gauging variation'* (Bryman and Bell, 2011:95). Through this framework of data collection, a detection for patterns

of association will be conducted. This is the main purpose and the best direction to take the research in.

3.5 Survey

3.5.1 Data Collection and Pretest

The data collection was done through primary data. The primary data is the questionnaire distributed online. After having decided the research strategy and design, the layout of the survey was carefully construed pertaining to all the aspects of the methodology used. It was decided that survey would be distributed online through a service provider called Survey Monkey. Survey Monkey allows formation of a questionnaire to be distributed online. The software application creates an active link that works on computers as well as smartphones, such as an iPhone. The layout of the survey was constructed exactly as needed to target all three research questions. The driving theories, explained in the Theoretical Background, were weaved into the questionnaire. Through this the creation of survey questions related to both the theories and the research questions. These are all a part of the concepts that create the foundation of the research. Concepts are defined as "*the building blocks of theory and represent the points around which business research is conducted"* (Bryman and Bell, 2011:194). Through the incorporation of the theories, and concepts the questionnaire was formulated. The questionnaire uses measurements, indicators, and key words that will all be used in the analyzation of the results to reach a conclusion for this research project. These will be further explained in the following chapter that relays the empirical data.

The survey was sent out over FaceBook and Amazon Turk. These two social media outlets allowed participants to click on the link and complete the survey. The motivation to complete the survey through FaceBook was personal family and friends. Then, the motivation on Amazon Turk was a small payout after completing the survey. This allowed the answers to be quickly received. The survey was live for one week. During this time, 100 answers from the sample technique discussed in the next section were received from a diverse group. Although, there were limitations to using social media. There is a potential sample bias further discussed in research criteria.

3.5.2 Sampling Techniques

The sampling technique is one of the most important aspects of the fieldwork. The decision of what type of population that will best suit the questionnaire is an important step in the research methodology. The sample of a research project is the sector of the population that will take part in the investigation (Bryman and Bell, 2011). The main purpose of the sample frame for this research was to have a representative sample of the general population. Therefore, Probability

sampling, as in the type of sampling where every member of the population has a chance of participating, was used (Bryman and Bell, 2011). Through FaceBook and Amazon Turk there was a large range of recipients able to take the survey. More specifically, stratified random sampling was used was used to the best of the author's capability by extending beyond social media through email and word-of-mouth. The hope was to have the demographics range among age, gender and nationality to give a general depiction of the population of self-service technology users. Through this type of sampling, the sample size aim was around 100 due to time constraint restrictions. This was completed through the two outlets.

3.5.3 Data Analysis

The primary data is analyzed through univariate analysis. According to Bryman and Bell (2011), this is the analysis of one variable at a time. Through comparing one variable used within the research question, the analysis will be formed. The analysis will be categorized through demographics and research questions. First, demographics will be briefly analyzed but mostly interpreted. After this will come an analyzation organized by research question. The first research question will be analyzed and connected to theory. Then, the second and third research questions will be completed and discussed in the same way. This will then provide clear answers to the research questions through this analysis along with interpretive analysis.

3.6 Research Criteria

There are three important and prominent criteria that pertain to the evaluation of marketing and business research. The three are reliability, replication and validation of the entire methodology and research process (Bryman and Bell, 2011). Each of these criteria are relevant to the study. They are discussed separately in the next sections.

3.6.1 Research Reliability

The reliability of a study "*concerns the question of whether the results of a study are repeatable and consistent"* (Bryman and Bell, 2011:199). This is usually a greater issue during quantitative research due to the fact of measurability. There needs to be faith in the consistency of a study for it to qualify as reliable. The concern around research reliability during the data collection revolves around discerning that the concepts and theories used are all reliable. The Theoretical Background is concrete. Therefore, the concepts and theories used are reliable for this research. Furthermore, is that the collection is reliable and the research design is reliable. Survey Monkey was a reliable and highly measurable source. It held a consistency and involved easy use of the theories. On that note, the reliability of the survey sample is not as reliable because of restrictions of the numbers and generality of the sample.

3.6.2 Research Replication

The replication of a study means that the study can be replicated (Bryman and Bell, 2011). In order for this to take place, the procedures must be outlined and detailed properly, so that other researchers may replicate the findings of others. This is not as common in business research. In fact, according to (Bryman and Bell , 2011) it is quite rare. This being said, the methodology of this study is detailed throughout the Methodology chapter. The process and study is very clear to a large degree. The procedures are finely outlined as discussed in the sections before this. Therefore, this study could be replicated and it is important to note this.

3.6.3 Research Validity

The third and final research criteria for evaluation, possibly the most important, is research validity. Bryman and Bell (2011:200) state that "*validity is concerned with the integrity of the conclusions that are generated from a piece of research"*. There are a few different types of validity that will be discussed, out of many academic types of research validity. The ones that will be discussed are measurement validity, internal validity, external validity and ecological validity.

Measurement validity pertains the most to quantitative research and measuring social science concepts (Bryman and Bell, 2011). Another name for this is construct validity. Bryman and Bell (2011:201) define it as something "*to do with with the question of whether or not a measure that is devised of a concept really does reflect the concept that it is supposed to be denoting"*. Due to the fact that the collection will be quantitative, but analyzation more towards quantitative, this criteria is relevant. The research does measure the concept at hand. The scenarios and answers used throughout the data collection measure the research question. It is a valid use of the concepts and therefore the assessment of the measurement validity has been addressed and is sufficient. This study uses tested measurements developed by peer reviewed studies.

Internal validity relates to the concept of causality. Causality is the relationship between cause and effect. Bryman and Bell (2011:82) express that it "*is concerned with the question of whether a conclusion that incorporates a casual relationship between two or more variables holds water"*. It revolves around the idea of the impact of the independent variable, affecting the dependent variable. This means that there must be a match and a "casual" relationship between ideas and the observations made throughout the research. Internal validity is relevant to this research. The search for a casual relationship between customer loyalty, the dependent variable, and recovery types, the independent variable, is clear. There is a hope in this research to prove this relationship through the research that will be done. Internal validity will most likely be weak, yet still validated through the research revealing at least a partial casual relationship and responsibility between these two variables. Although, due to the fact that the research design is

cross-sectional and not experimental, "*all that can be said is that the variables are related"* (Bryman and Bell, 2011:95). Therefore, there is a lack of internal validity and this is noted throughout the analysis.

The next concept is external validity. Bryman and Bell (2011:83) write that external validity "*is concerned with the question of whether the results of a study can be generalized beyond the specific research context"*. This is a big factor when using quantitative data, ensuring the use of representative samples to create external validity. Due to a smaller sample size, yet a very broad one, it is not probable that these results will in fact be generalizable beyond the context of this research. Due to the fast-paced growth of self-service technologies and the wide range of people that use them, these results can pertain beyond the research context. This can be assumed that the people over social media use self-service technology. This is a study to help generate awareness and speculate conclusions revolved around this topic. It is a topic that is relevant and will be studied for years to come. Furthermore, the representative sample must have external validity. The sample used for this research was wide and broad, attesting every branch of the populous, as discussed in the sampling technique section. Although, it was sent out over social media and therefore may not be extremely externally valid due to a possible sample bias.

Ecological validity is the final criteria. It "*is concerned with the question of whether or not social scientific findings are applicable to people's everyday, natural social settings"* (Bryman and Bell, 2011:84). This research definitely concerns this criteria. Due to the fact that the research will use a questionnaire, there is an "unnaturalness" to it. Although, the questionnaire absolutely relates to people's everyday lives. The questions center on very normal, generalized examples. The examples do not happen daily, but they are relevant in a bigger picture stance. This leads to the conclusion that the research methodology is ecologically valid.

3.7 Ethical Considerations

Ethical issues and considerations arise throughout almost all of the stages of business and marketing research, according to Bryman and Bell (2011). Bryman and Bell describe the four main areas of ethical principles to consider. They are whether there is harm to participants, whether there is a lack of informed consent, whether there is an invasion of privacy and whether deception is involved.

For the first principle, harm to participants, there was absolutely no physical or mental harm. The participants agreed to take an online survey, and that was the end of it. Also, the survey explicitly revealed the details of the study and ensured confidentiality. The identities and responses of individuals was and will be kept completely anonymous and confidential. The next principle is lack of informed consent. This is considered and solved through thoroughly discussing what the research is for in the introduction paragraph of the survey. There is also no invasion of privacy,

the third area of consideration, because the data is kept anonymous and the participants realize the minimal personal information they are revealing. The fourth and final principle is deception. Deception is trying to make something what it is not. This does not happen within the survey because the purpose and overall existence of the survey is explicit and clear.

Through consideration of these four important principles, along with copyright and data management ethical considerations, the research as a whole is ethical. The few difficulties that arise will be met with consideration of ethical actions. It is important to keep these thoughts in mind. The research being carried out ethically is very important to the authors and entire University.

3.8 Criticism and Challenges

There were a few challenges and limitations throughout the study. Above all, the quality of the studying pertaining to the research technique. There are a few disadvantages of self-completion questionnaires, as discussed by Bryman and Bell (2011). One major challenge was the inability to prompt and help respondents if they had difficulty answering the questions or if they were confused. Another downside is the researcher is unable to further probe and ask more questions. With premade, set questions there is no room for flexibility. This can be limiting. There is a great risk of missing data with this method. Furthermore, the sample size was quite small and extremely limited. This provided a downside to analyzing the demographics and their effect on the research questions. This was completely avoided in the study. There are no assumptions made on how demographics influence the research questions. This is also a criticism, because it would have been interesting to study this throughout the research.

Further criticism comes from time constraints. The time constraint of this paper, as discussed previously, truly limited the extent of the research. To have better completed the research data collection, more time would have been needed. This was not possible. Another criticism revolves around the limited knowledge of the authors on research methods. This is another limiting factor. The research and paper, though, was done to the best of the authors abilities.

4. Empirical Study

This is the empirical study chapter. This chapter will include all accounts of the empirical data and empirical findings, to be analyzed in the following chapter. First, the survey description will provide a thorough explanation of how the results were attained. The results of the survey will then follow. Through discussion, charts and graphs from the questionnaire, the empirical results will be exhibited.

4.1 Survey Description

The survey was called "Self-Service Technology Recovery in Retail Questionnaire". The data comes from the questionnaire posted on Survey Monkey. It opened with an introduction that included a small description of the research and questions being asked. It also discussed how long the survey would take, confidentiality concerns and thanked the respondents. The first four questions are demographic and knowledge gaining questions on the responder. The first one is nationality. It was important in the study to know the cultural background of the responder. The next was gender, which can be another indicator. The third one was still related to demographics, covering age of the responder. Another important indicator that can drive the analyzation of the data. The fourth pre-question was asking about the responder's familiarity with technology. This was created in order to help indicate the respondents use and awareness of technology. The entire survey revolved around the use of self-service kiosks, a form of technology, meaning that if the responder was completely unfamiliar with technology they probably were also very unfamiliar with self-service kiosks.

Questions five, six and seven on the questionnaire were all directly related to the research questions. The customer participation in service recovery was manipulated at three levels: firm recovery, joint recovery and customer recovery. Each scenario layout manipulates a different recovery. The first scenario is firm recovery, the second scenario is customer recovery, and the third scenario is joint recovery. The scenario layouts are as follows. A specific grocery store checkout using a self-service retail kiosk is described. For each of the three scenarios, a different problem with the kiosk arises. In the first scenario the scanning system malfunctions while the item is placed on the conveyor belt. The machine then sets off a light informing that one must wait for employee assistance. In the second scenario the kiosks scans one item twice, and the patron themselves goes to request assistance after further implicating the problem. The third scenario describes that the kiosk machine incorrectly gives the wrong change, and the patron must cooperate and work with an employee to solve the problem. All these scenarios have a slight change, and will be discussed more as to why and how it pertains to the research.

All three of these scenarios then had nineteen questions that are scaled on the Likert Scale. The Likert Scale is a psychometric tool geared towards human behavior and performance (Joshi et al

2015). The Likert Scale was designed to "*measure 'attitude' in a scientifically accepted and validated manner. An attitude can be defined as preferential ways of behaving/reacting in a specific circumstance rooted in relatively enduring organization of belief and ideas acquired through social interactions"* (Joshi 2015). The Likert Scale has many variations, and the variation used for the questionnaire was about satisfaction. The five point scale using Likert measurements seemed to be the best aim to gain opinion and perceptions of the respondents. It is more responsive than a yes/no answers, and the range also allows for a neutral answer to be an option. The first eight were scaled by Strongly Dissatisfied, Dissatisfied, Neither, Satisfied, and Strongly Satisfied. The other seven were scaled by Strongly Disagree, Disagree, Neither, Agree, and Strongly Agree.

The nineteen questions that were asked after the scenarios, to be answered through the Likert Scale, varied in relation to the research questions. The first research question, "What dimension of justice is most effective for customer loyalty?" were answered through asking questions that used the different justices discussed in the Theoretical Background using a satisfaction scale. The first two questions used outcome justice. The questions discuss a positive outcome of compensation versus negative outcome of no compensation. The next two questions used procedural justice. The questions related to recovery process timing. This underlined procedural justice through the fairness in terms of the timeline of the complaint process. The positive outcome was timeliness under 5 minutes, and the negative outcome was timeliness greater than 5 minutes. The next two questions covered interactional justice. The questions cover treatment positively and negatively of the employee towards the customer. This is a positive expectation of interactional justice. Through these six questions asking about outcome justice, procedural justice, and interactional, the first research question was properly uncovered.

The next six questions used in the three scenarios through the Likert Scale correlate most directly to the second research question. The second question is, "What factors influence co-creation recovery efforts?". These final six questions all involve co-creation and how it affects recovery efforts. The questions were instead answered based on levels of agreement using the Likert Scale. All the questions revolved around different factors on co-creation. The first question focused on perceived control, asking how in control the respondent felt while using the self-service kiosk. The next three questions focused on attribution. The first focused on external attribution, as in the firm being responsible for the failure. The second two focused on internal attribution and discussed the respondent being responsible for the failure. The last three questions asked about benefits of different participation types. The three types of participation involved participation through improving the situation, the use of money and to help gage a further understanding of the service.

This final research question uses all three recovery scenarios specifically, through seven different questions. The third research question at hand was "Compared to firm and customer recovery

does joint recovery result in customer satisfaction and loyalty?". The comparison was between each type of recovery. Firm recovery involved a solution of waiting for employee assistance. Customer recovery had a solution of trying to solve the problem alone but failing. Finally, Joint Recovery had the solution of working with the employee together. All these responses were compared through their satisfaction versus their dissatisfaction through seven different questions that were averaged in the charts.

The questionnaire was constructed carefully in order to affirm that all three research questions were targeted. The main purpose of the study was also given thought during the formulation of the survey. Through the outcomes wanting to be addressed in the survey, it was clear that the formulated questions would provide ample answers.

4.2 Survey Results

The next sections contain the survey results. First, the four demographic questions and then the three separate scenario questions that all covered a different types of recovery are empirically shown. The data comes from 100 responses from people all around the world. The data of these respondents will be recounted for. This will be the first section of the empirical results. These results will be further used for discussion within the conclusion rather than analyzation. They are less relevant to the research questions than the other survey questions. They serve a purpose to inform about the background of the respondents. These questions add in different variables that, for timely and length purposes, will not be thoroughly analyzed. This research is more about consumer and customer behavior in certain recovery scenarios as opposed to personal actions due to outlying factors. There will be one chart and three graphs of the demographics.

The next three sections of the survey results will be accounted for by research question. First, the first research question will be explored. The first question is: "What dimension of justice is most effective for customer loyalty?" The survey contained six relevant questions that varied per each of the three justices. Then the second research question is explored empirically: "What factors influence co-creation recovery efforts?". Finally, the third question, "Does joint recovery result in customer satisfaction and loyalty?" consists of two questions comparing satisfaction of the specific recovery types discussed throughout the scenarios.

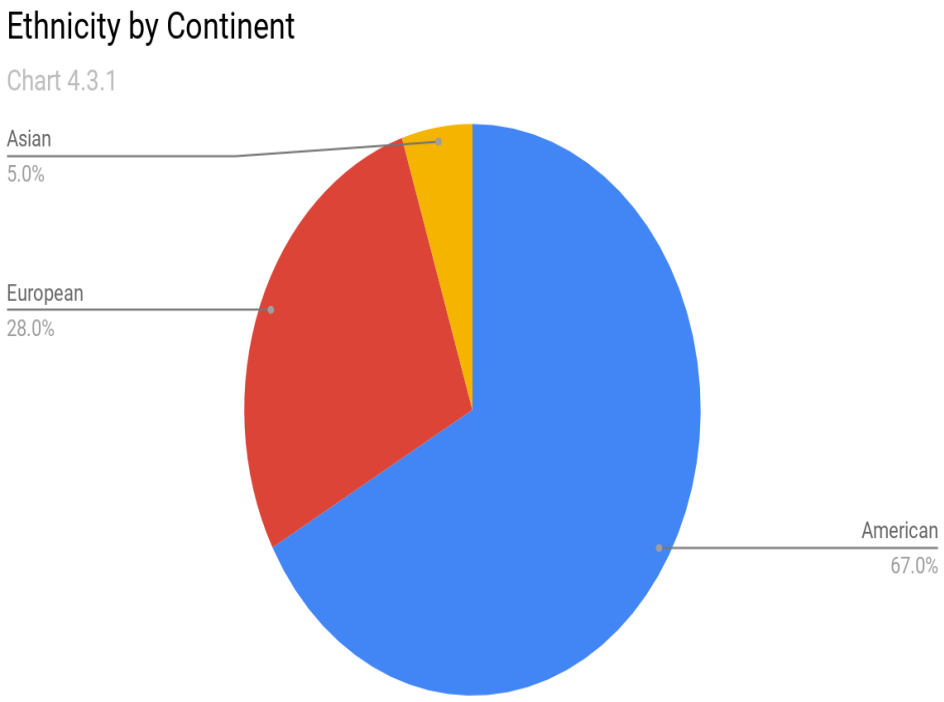
There will be graphs and descriptions categorized per question. The answers for these questions are the empirical results that will be analyzed in the next chapter, the analysis chapter. It is important that these results are clearly presented and understood to use for analyzation and furthermore, conclusion to the paper.

4.3 Demographic Results

The demographic section of the survey consisted of the first four questions. The questions asked about nationality, gender, age and personal familiarity with technology. Detailed below are the results, through charts and graphs. Following the chart or graph is a description of what is revealed throughout the chart. Then, two tables statistically analyzing the technology familiarity in relation to both gender and are exhibited. This data analysis is done to compare all the demographics analytically.

4.3.1 Nationality

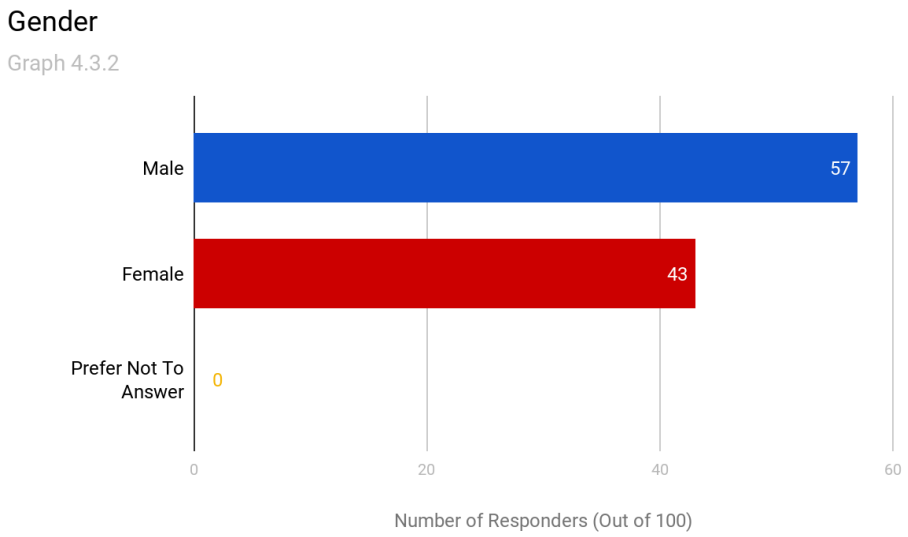
This was an open ended question. Since the nationalities were very varied, it has been modified to the ethnicity of which continent the nationality of the responder comes from.



The Ethnicity by Continent Chart, Chart 4.3.1, reveals that out of 100 respondents, 5.0% are from Asian countries, 28.0% are from European countries and 67.0% are from American countries. The Asian countries included China, India and the Philippines. The European countries included Sweden, France, England, Switzerland, Spain and Ireland. The American countries included the United States of America, and Canada. Out of all the countries represented in this pie chart, the United States had the high amount of participants.

4.3.2 Gender

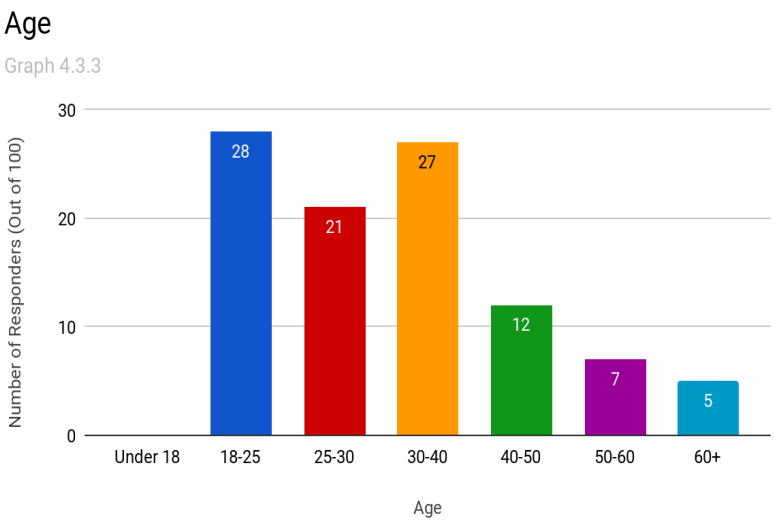
This was a multiple choice question. The options were “Male”, “Female” or “Prefer Not To Answer”.



The Gender Graph, Chart 4.3.2, reveals that out of 100 respondents, there are 57 male and 43 female. There were no answers to the option “Prefer Not To Answer”, added to ensure the questionnaire was fair and just. This means that the gender results were almost even between Male and Female.

4.3.3 Age

This was also a multiple choice question. There were seven options for age range. The options were Under 18, 18-25, 25-30, 30-40, 40-50, 50-60 and 60 and above years of age.

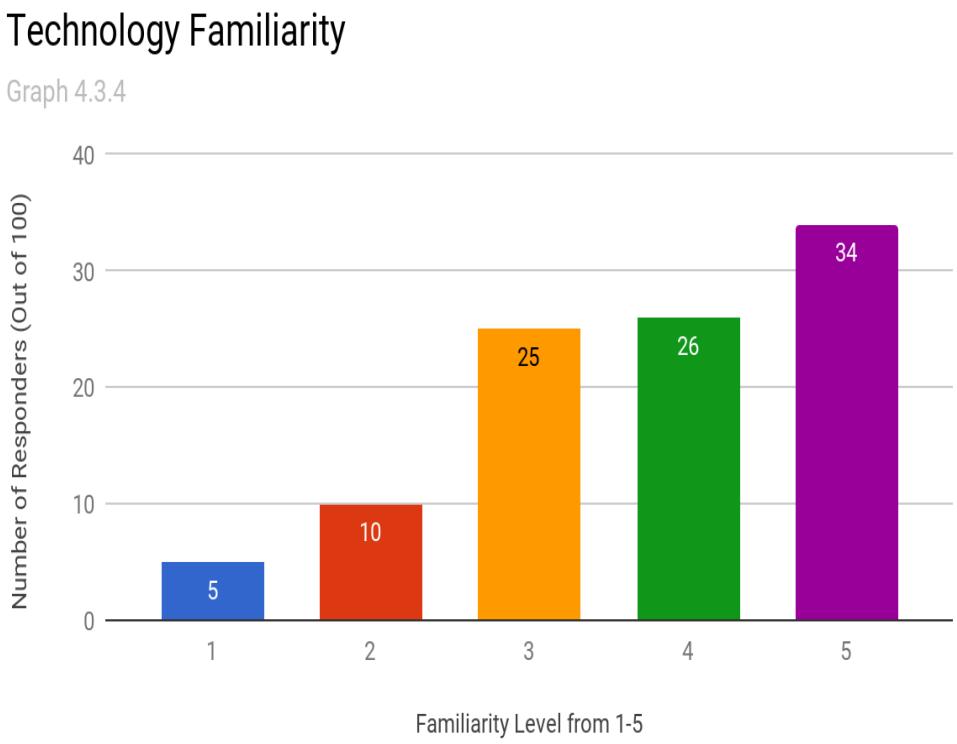


The Age Graph, Graph 4.3.3, reveals the age range of the 100 respondents to the survey. There were no respondents under the age of 18. The largest group of respondents are aged 18-25, with the highest number of 28 respondents. There were 21 respondents of the ages 25-30. The second highest age range was 30-40 years old, at 27 respondents. The

next age group, 40-50 years old, consisted of 12 respondents. The second to last age range, 50-60 years old, held 7 respondents. The final age group was 60 and above, with no respondents exceeding or reaching this age. This data reveals that the respondents were young adults to adults, which can be assumed to be the largest group of self-service technology users.

4.3.4 Familiarity with Technology

The final general demographics questioned asked "What would you say your familiarity with technology is?". The question was answered on a scale of 1-5. respondents answered 1 for the lowest amount of familiarity, and answered 5 for the highest amount of familiarity.



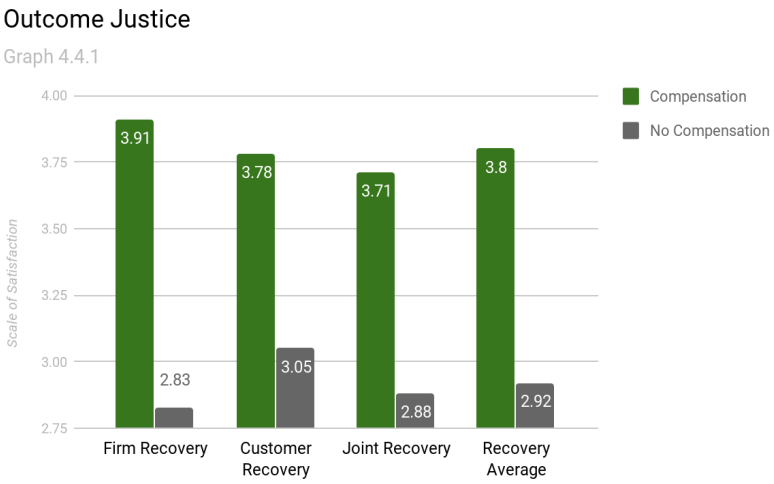
The Technology Familiarity graph, Graph 4.3.4, reveals how confident the respondents are with technology. The first level of familiarity is 1, the lowest level. There are 5 respondents who feel very unfamiliar with technology. The next two levels are 2, and 3, meaning little to average familiarity with technology. 10 respondents chose level 2, while a greater number of 25 respondents chose level 3. The majority of respondents, though, do have a more familiar level with technology as the chart reveals. There are 26 people above average at level 4. Furthermore, there are 24 people who chose the highest and most familiar level of technology familiarity, at level 5. The average was 3.8/5.

4.4 Research Question 1 Results

Research Question 1 results stem from the three recovery scenarios. After reading the scenario pertaining to a specific recovery concept, the respondent was then asked to answer a series of questions based on a Likert Scale. The scale was based from 1-5, from being strongly dissatisfied to being strongly satisfied. The first six questions correlated to the first research question, "What dimension of justice is most effective for customer loyalty?". The question covers the three different justice theories. The three types are outcome justice, procedural justice and interactional justice. The justices each had two questions related to them, one positively using the justice and one negatively using the justice. Therefore, the empirical data will be shown through an average comparison of how the respondents weighed each justice. Each type of scenario is shown on the graphs along with the average of all scenarios. Each justice will have its own graph and table, and then one final graph along with a table will show the difference between the scenario averages per justice.

4.4.1 Outcome Justice

The two questions for Outcome Justice revolve around receiving compensation (positive use) versus receiving no compensation (negative use).



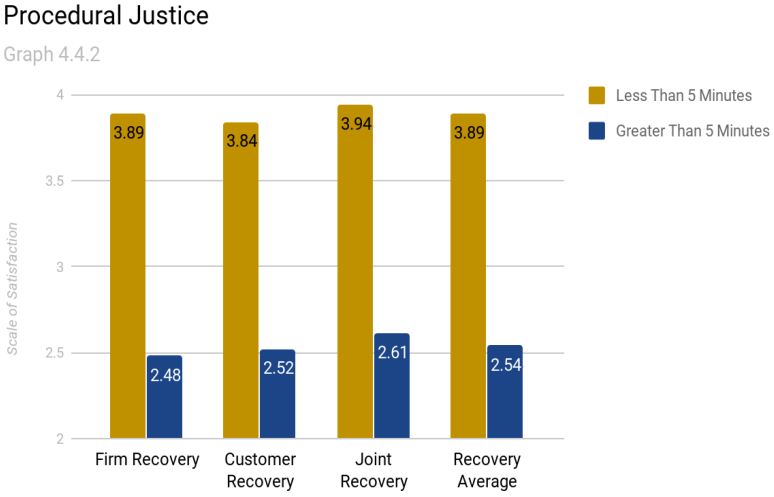
Shown on the to the left, Graph 4.4.1, based on outcome justice, is a comparison for each recovery and then the average of all three recovery scenarios. For Firm Recovery, respondents were very satisfied with the use of outcome justice through the form of compensation at 3.91. This is compared to a more neutral 2.83. The Customer Recovery scenario showed similar numbers with compensation at 3.78 and no compensation at 3.05. Continuing on the same trend is the Joint Recovery scenario with compensation at 3.71 and no compensation at 2.88. These numbers all provided for the average of all the recovery scenarios to be a high 3.8 of satisfaction through a coupon, and no compensation to be more towards neither dissatisfied or satisfied at an average of 2.92.

Table 1. Outcome Justice	Positive Use: Compensation	Negative Use: No Compensation
Firm Recovery	3.91	2.83
Customer Recovery	3.78	3.05
Joint Recovery	3.71	2.88
Recovery Average	**3.80**	**2.92**

Table 1 takes the numbers from Graph 4.4.1.

4.4.2 Procedural Justice

The two questions for Procedural Justice revolve around the recovery process time to be less than 5 minutes (positive use), or the more negative option of greater than 5 minutes (negative use).



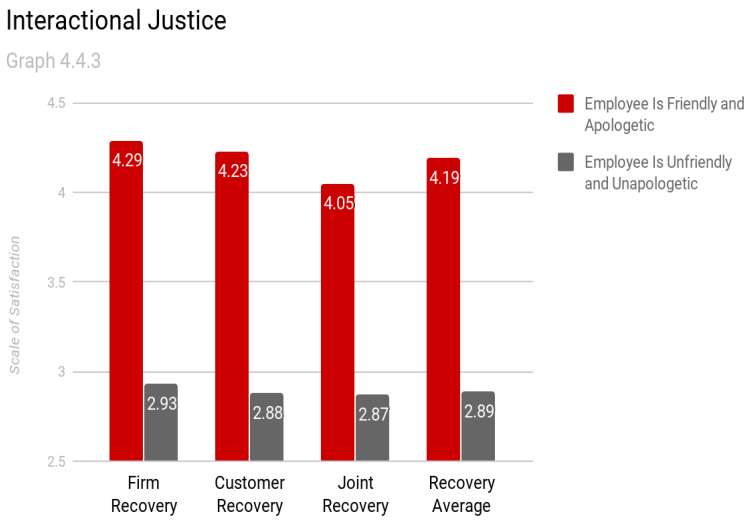
Graph 4.4.2 shown left, is based on procedural justice. Each recovery scenario shows an above average rate of satisfaction when the recovery process is less than 5 minutes, and the slightest bit of dissatisfaction when the recovery process is greater than 5 minutes. For Firm Recovery, respondents answered an average of 3.89 for less than 5 minutes, and 2.48 for greater than 5 minutes. Customer Recovery showed an average of 3.84 for less than 5 minutes and 2.52 for greater than 5 minutes. The third recovery option of Joint Recovery showed similar numbers with less than 5 minutes at 3.94 and greater than 5 minutes at 2.61. These numbers all provided for the average of all the recovery scenarios to be a high 3.89 for less than 5 minutes, and a lower average of 2.54 for greater than 5 minutes.

Table 2. Procedural Justice	Positive Use: Less than 5 Minutes	Negative Use: Greater Than 5 Minutes
Firm Recovery	3.89	2.48
Customer Recovery	3.84	2.52
Joint Recovery	3.94	2.61
Recovery Average	**3.89**	**2.54**

Table 2 takes the numbers from Graph 4.4.2.

4.4.3 Interactional Justice

The final two questions pertaining to the first research question revolve around Interactional Justice. The questions focus on an employee being friendly and apologetic (positive use), versus an employee being unfriendly and unapologetic (negative use).



The graph above, Graph 4.4.3, reveals the interactional justice data. The overall scale of satisfaction for an employee acting very friendly and apologetic, shortened to employee positivity, is significantly higher by at least 1 point for every recovery scenario and the recovery average. The data shows that for Firm Recovery, a high average of 4.29 was answered when an employee was being friendly and apologetic, versus a score of 2.93 when the employee wasn't. Customer Recovery showed similar numbers with a 4.23 for employee positivity and a 2.88 for employee negativity. Continuing on the same trend is Joint Recovery with employee positivity at 4.05 and employee negativity at 2.87. These numbers averaged out to 4.19 versus 2.89 for the scenario averages of employee positivity versus negativity.

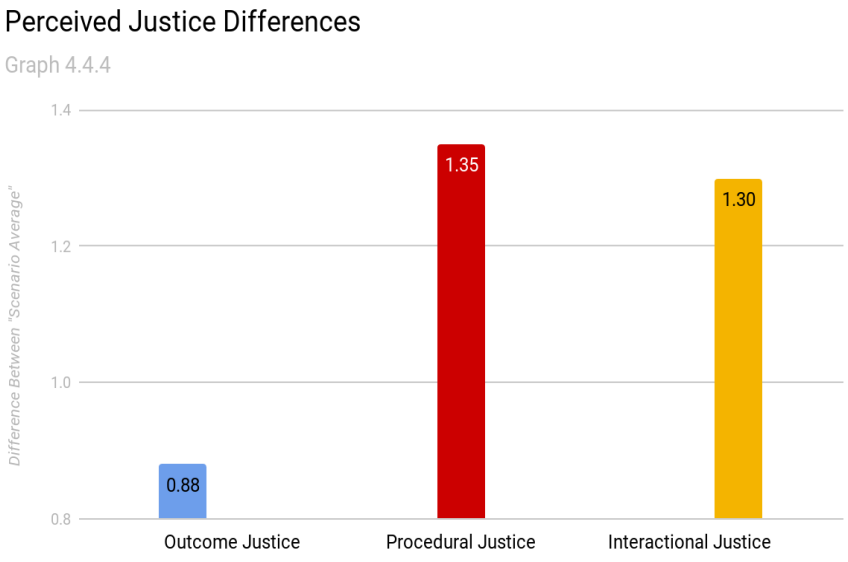
Table 3. Interactional Justice	Positive Use: Employee Is Friendly and Apologetic	Negative Use:Employee Is Unfriendly and Unapologetic
Firm Recovery	4.29	2.93
Customer Recovery	4.23	2.88
Joint Recovery	4.05	2.87
Recovery Average	**4.19**	**2.89**

Table 3 takes the numbers from Graph 4.4.3.

4.4.4 Justice Differences Results

The final graph for the empirical results for the first research question is the most important graph. The three prior graphs reveal each recovery average of how each justice was perceived. The graph below reveals the difference between the recovery average per justice. These are the numbers that will be analyzed to directly come an answer to the first research question, "What dimension of justice is most effective for customer loyalty?".

The numbers are taken from the "Recovery Average" on Graph 4.4.1, Graph 4.4.2 and Graph 4.4.3. The difference was found by subtracting positive justice use from the negative.



Graph 4.4.4, shown left, compares the differences between the overall averages for each justice. This is the final graph for the first research question. It reveals that the overall perception for the difference of averages for Outcome Justice is .88. The difference for Procedural Justice is 1.35, and the difference for Interactional Justice is 1.30.

Table 4. Perceived Justice Differences	Difference Between Scenario Average
Firm Recovery	0.88
Joint Recovery	1.30
Customer Recovery	**1.35**

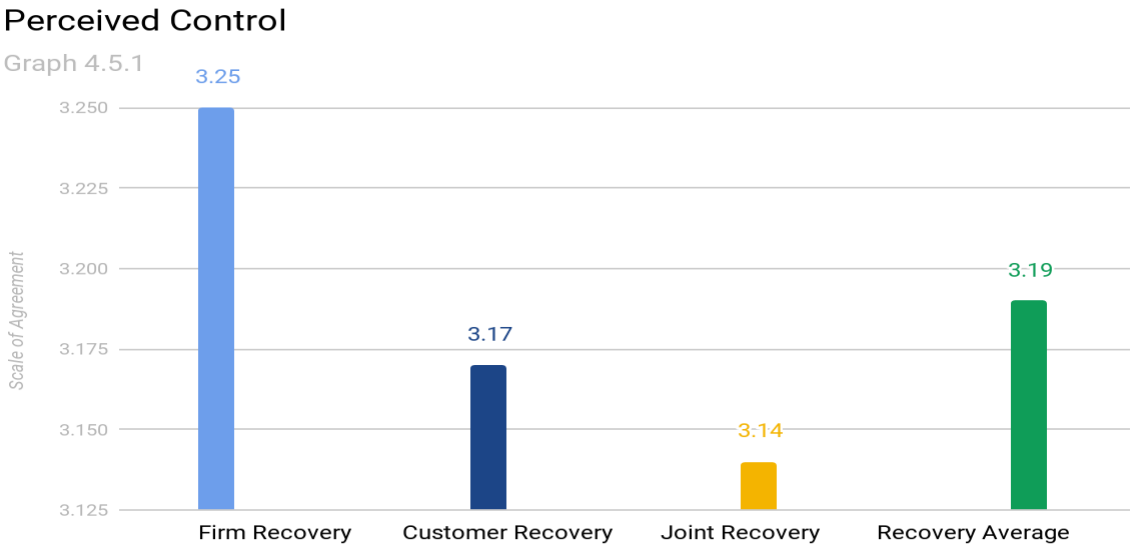
Table 4 takes the numbers from Graph 4.4.4, and is ordered lowest to highest.

4.5 Research Question 2 Results

As stated in the previous section, this part of the empirical data stems from from three scenario descriptions that all vary by recovery type. After reading each scenario, the respondent then answered a series of questions based on a Likert Scale using the level of agreement, 1 meaning they strongly disagree and a 5 meaning they strongly agree. There were seven questions that correlated to the second research question, "What factors influence co-creation recovery efforts?". The questions cover the co-creation factors of perceived control, attribution and benefits of participation and motivation. There will be three graphs pertaining to each factor, and one graph with a table comparing the averages of all the factors.

4.5.1 Perceived Control

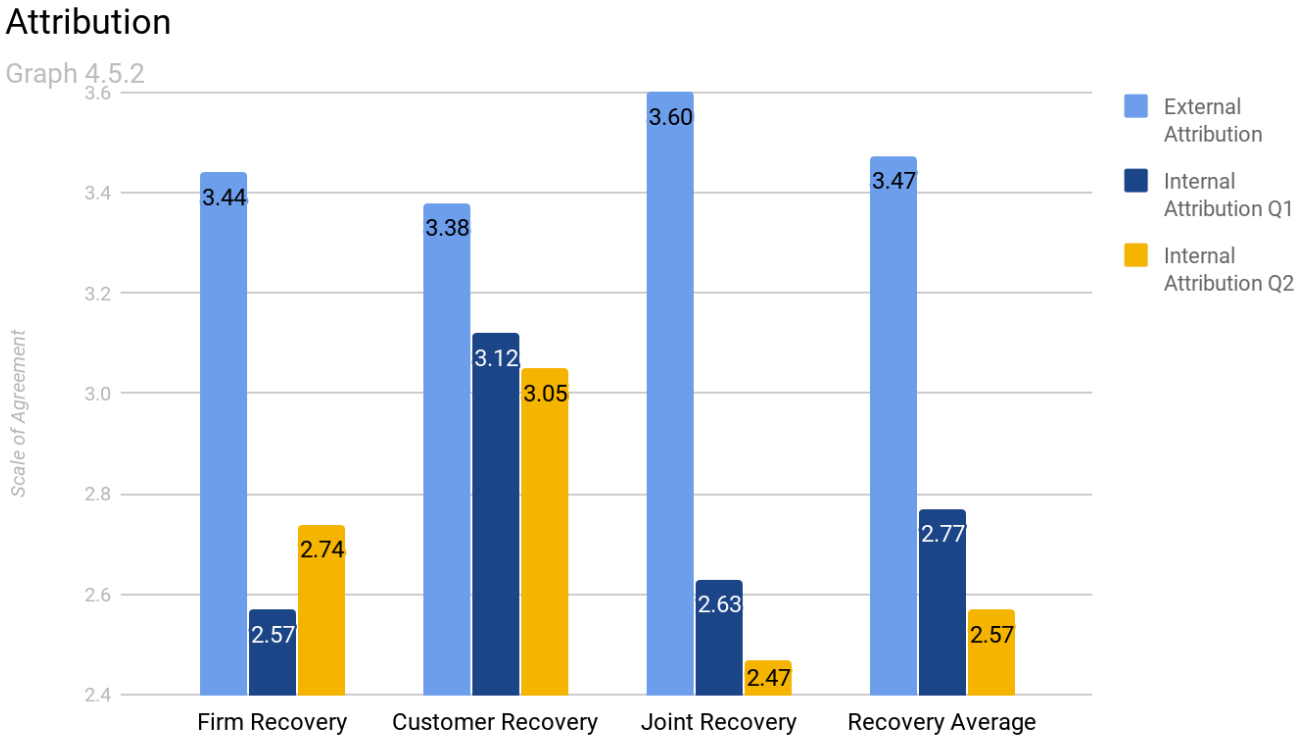
The first graph shows how the respondents felt with the use and control of the self-service technology.



Shown previously on page 29, Graph 4.5.1 shows the respondents agreement to how in control they felt with using the self-service technology. Firm Recovery had the highest agreement level at 3.25. Customer Recovery reached 3.17, and Joint Recovery came in around the same at 3.14. This provided for the recovery average to equal 3.19.

4.5.2 Attribution

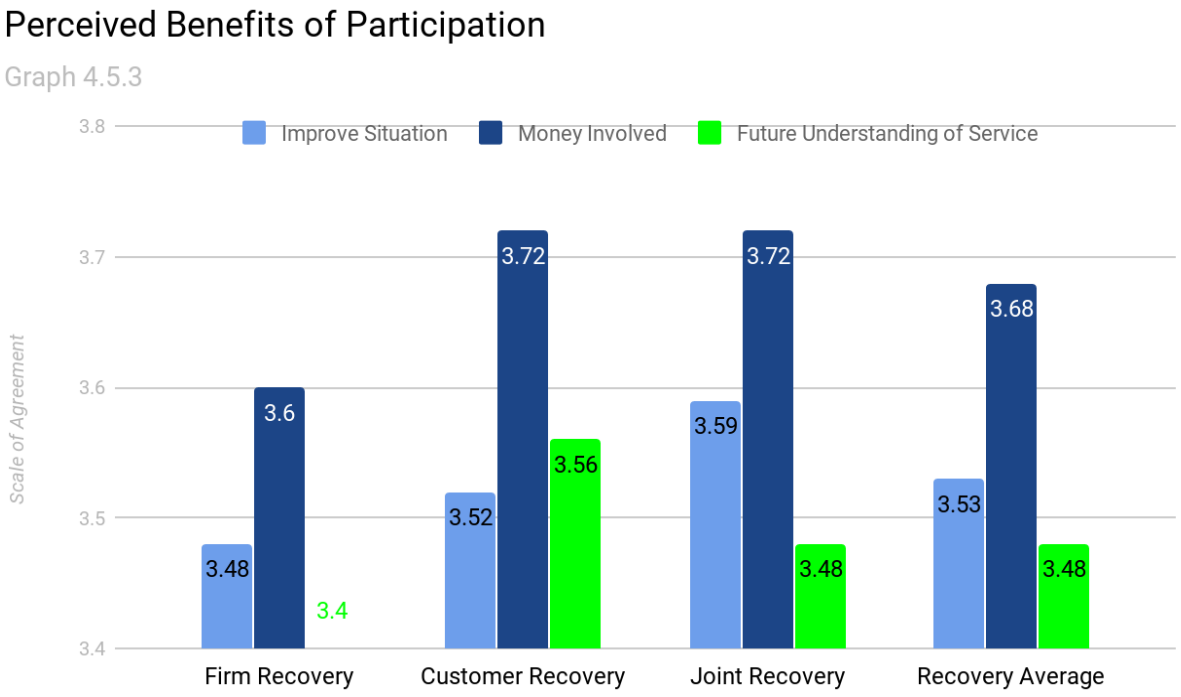
The second graph shows how the respondents agree with external attribution versus internal attribution. External attribution revolves around the responsibility of the firm, and internal attribution revolves around personal responsibility for the failure described in each recovery scenario.



The graph above, Graph 4.5.2, shows one question centered around external attribution, and two questions based on internal attribution for each scenario and the scenario averages. For scenario one on Form Recovery, respondents agreed highly to the external attribution question at 3.44, and responded a bit lower to the first question at 2.57, and same with the second question at 2.74. The second scenario showed a 3.38 for external attribution and a 3.12 for question one and 3.05 for the second question on internal attribution. The third and final scenario showed the most drastic numbers, even if by a small scale. External attribution received a 3.60, the first question on internal attribution received 2.77 and the second internal attribution question received a 2.57.

4.5.3 Benefits of Participation

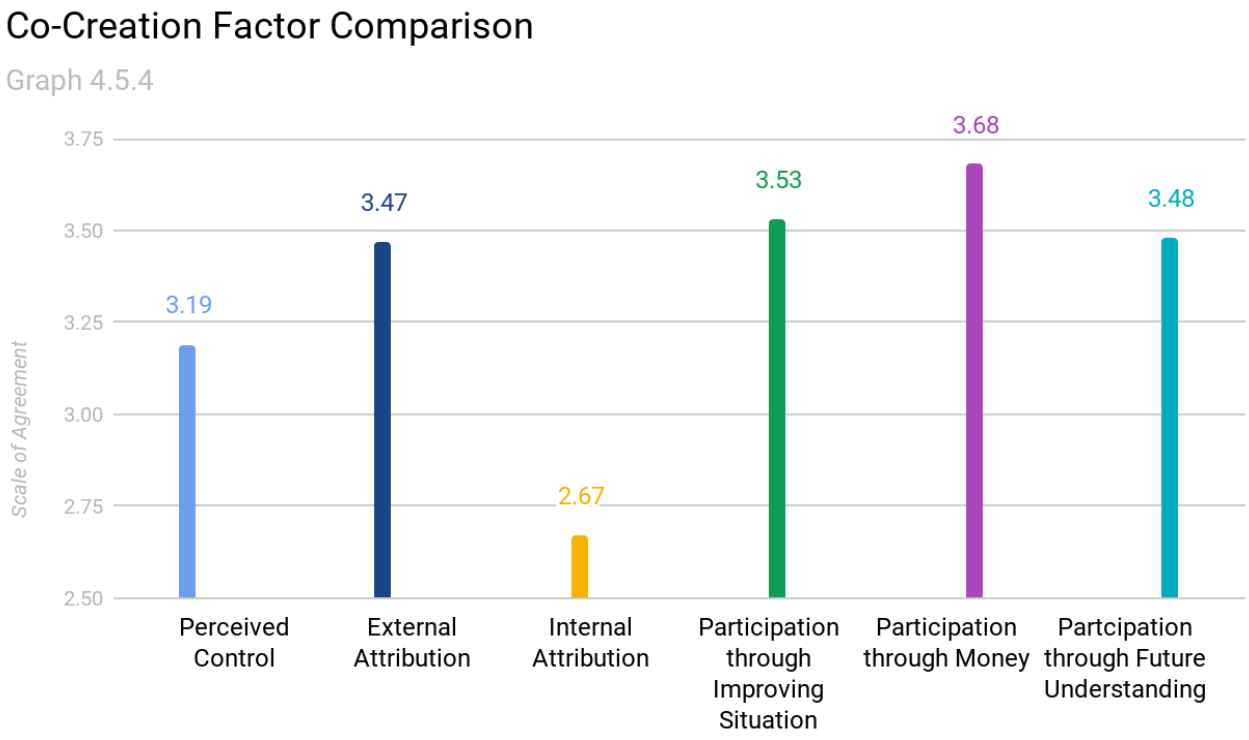
The third graph shows how the respondents perceived benefits of participating with recovery efforts. There was one question focused on participation improving the situation, another question on the motivation to participate when money is involved and a final question on participating to help improve future understanding of the service at hand.



The graph above, Graph 4.5.3, shows one question based on improving the situation, one on the use of money and a final question on the future of understanding the service. Starting with the Firm Recovery scenario, respondents answered 3.48 for the first question on improvement, a 3.60 for the second question on money and a 3.40 for the third question involving the future understanding the the service. Customer Recovery showed a 3.52 for the first question, a 3.72 for the second question and a 3.56 for the third question. The Joint Recovery scenario results came in at a 3.59 for the first question, a 3.72 for the second question and a 3.48 for the third question. Finally, the scenario recovery averages revealed respondents answered an average of 3.53 for improvement of the situation, a 3.68 when there is money involved, and a 3.48 for the future understanding of service.

4.5.4 Factors Comparison

The fourth and final graph shows the comparison of each of the past three graphs. Taken from Graph 4.5.1, Graph 4.5.2, and Graph 4.5.3 is the average agreement towards each of the different factors revealed in each graph. The scenario average of perceived control is graphed from Graph 4.5.1. From Graph 4.5.2, the scenario average for external attribution is graphed, along with the average of the two internal attribution questions. The final data is taken from Graph 4.5.3 and shows the averages of all three benefits of participation.



The final graph for Research Question 2, Graph 4.5.4, shows all the co-creation factor averages throughout the recovery scenarios. Perceived Control had an average of 3.19. External Attribution came in at 3.47 in comparison to Internal Attribution which averaged out to be 2.67. The averages for each of the participation factors were a 3.53 for improvement of the situation, a 3.68 when money is involved and a 3.48 when there is motivation to participate to broaden future understanding of the service.

Table 5. Co-Creation Factor Comparison	Scale of Agreement
Internal Attribution	2.67
Perceived Control	3.19
External Attribution	3.47
Participation through Future Understanding	3.48
Participation through Improving Situation	3.53
Participation through Money	**3.68**

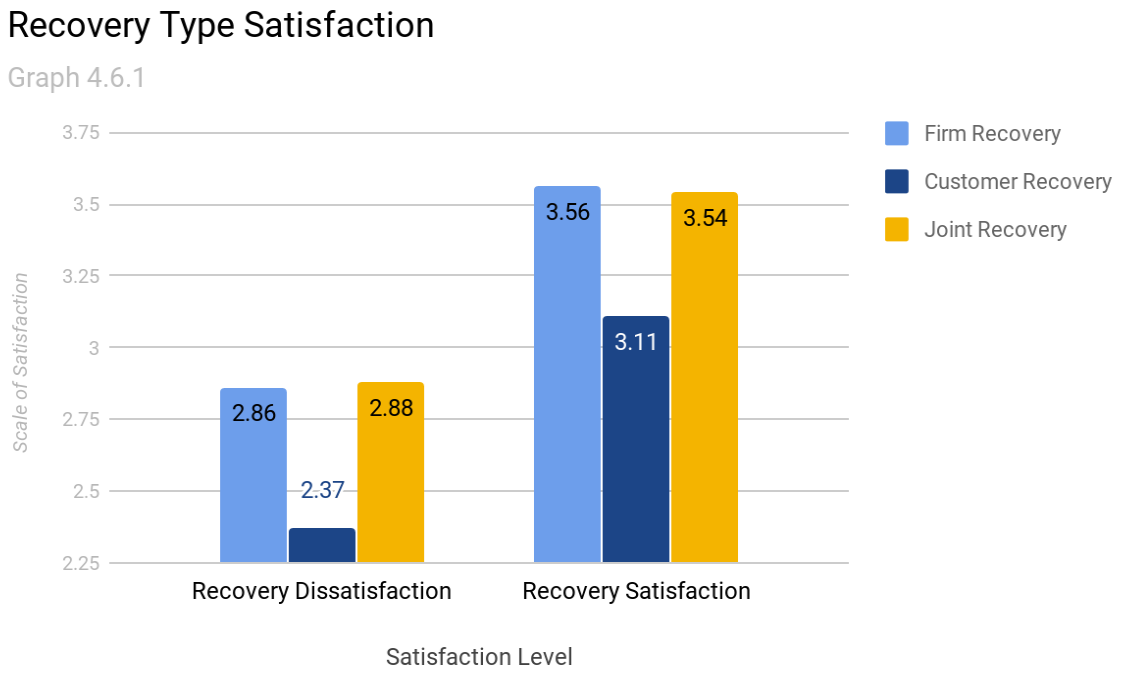
Table 5 takes the numbers from Graph 4.5.4, and is put from lowest to highest.

4.6 Research Question 3 Results

The final part of the empirical data follows the same structure as the previous two sections. After reading the three scenarios, the respondent answered a series of Likert Scale based questions. Similar to Research Question 1, the scale is based on strong dissatisfaction (1) to strong satisfaction (5). The final two questions correlate to the third research question, "Compared to firm and customer recovery does joint recovery result in customer satisfaction and loyalty?". The main purpose here is to uncover which specific recovery scenario had the most positive effect on the customer and their loyalty. The results for each scenario will be graphed and compared by table. The first question explicitly used firm recovery, the second customer recovery and the third joint recovery.

4.6.1 Recovery Type Questions

This graph compares each type of recovery satisfaction. The graph is shown on the next page.



The graph above, Graph 4.6.1, reveals the satisfaction versus the dissatisfaction of each scenario that involves one of three recovery theories. Firm recovery dissatisfaction level is 2.86, in comparison to a satisfaction level of 3.56. Customer recovery dissatisfaction level equaled 2.37, and satisfaction value is 3.11. The final recovery option, joint recovery, showed a dissatisfaction level of 2.88 and a satisfaction level of 3.54.

Table 6. Satisfaction	Dissatisfaction	Satisfaction
Firm Recovery	2.86	3.56
Customer Recovery	2.37	3.11
Joint Recovery	2.88	3.54

Table 6 takes the numbers from Graph 4.6.1.

5. Analysis

After presenting the empirical findings, the following chapter contributes an analysis of the collected data. We briefly go over demographics as an influencer to our overall examination. The first part of the analysis focuses on comparing the theoretical justice framework and empirically collected data to improve the knowledge on customer satisfaction in retail self service. While, the second part focuses on factors influencing customers to recover. Lastly, our third part focuses on whether our findings exhibit a positive relation between customer satisfaction and joint recovery.

5.1 Demographics

The analyzation of the demographic results is more to use for observation purposes of the study rather than to analyze and answer the research questions. Therefore, the first three demographic charts will be only be briefly analyzed. The fourth one pertains more to the research questions, but will still not have any major effect on the analysis per research question.

The first chart of nationality, Chart 4.1.1, reveals that the majority of respondents were American, and then about a third were European and finally a very small portion were from Asian countries. This leads us to believe that due to the fact the survey was delivered to a mostly American base over social media, that is who answered. This also leads us to assume that most Americans have probably encountered self-service technology because there is a large amount used in the United States of America. The same goes for most European countries, although prior research cannot confirm and it is based of off personal prior knowledge. It is the same scenario for Asian countries. This data of nationality just led the researchers to realize the ethnicity they were studying.

The second graph reveals the gender of the respondents. Graph 4.1.2 shows that the numbers for gender between male and female were pretty even. This research does not test for gender impact on use of self-service technology. The third graph, Graph 4.1.3, shows the ages of the respondents. It is interesting to note that there is no one who took the questionnaire that is under 18 years old, or under 60 years old. This shows that most of respondents were young-adults to middle aged, which is understandable due to the fact that the survey was distributed over social media. The majority of respondents were between 18 to 40. This can be analyzed as the main group of users who use self-service technology, because as one gets older they may not understand the technology. This is where the next and final demographic question can be interesting and possibly important pertaining to the study.

The fourth and final demographics chart reveals the technology familiarity of the respondents. Graph 4.1.4 can be analyzed as having the biggest demographic impact on the research results

because the use of technology is what drives the research. A range of familiarity with technology could have possibly varied the results to a degree that would make it hard to reach a conclusion about the data. Fortunately, the results can be analyzed that the greater majority of respondents were familiar with technology and therefore were properly able to answer the questions based on using self-service technology. There were only 15/100 respondents below average for the use of technology. This number is extremely low and can be analyzed to not have had a great impact on the data. The highest number of respondents answered that they were the highest level of familiarity with technology, at 34/100. This can be analyzed that because of this high number along with the next two levels obtaining also higher numbers, most respondents were familiar with the technology and could answer the questionnaire using prior knowledge and experience with self-service technology.

5.2 Justice Theory

When initiating the process of this thesis one of the steps to contributing to joint recovery literature was understanding how organizations could contribute effectively satisfaction through justice theory. In the case of retail self service technology failure we wanted to measure what dimension of justice was preferred in the recovery process by customers. The three dimensions of justice measured were outcome, procedural and interactional. As Tax and Brown (1998) found that 85% of satisfaction with a service recovery was due to the justice dimensions of the service recovery process.

5.2.1 Outcome

First, we closely observe Graph 4.4.1 which shows outcome justice measured in all three recovery types. On average 3.8 of customers would feel satisfied if companies offered compensation. While, on average a low 2.92 showed that consumers felt dissatisfied if no compensation was offered. People perceive outcome more favorably so long as the ratio of inputs to output is in their favor. Studies by (Spark and McColl-Kennedy, 1998) show customers are likely to accept, even prefer inequity when the result is to their advantage. Thus implying, that organizations should consider offering compensation. The outcome justice may be represented in the form of discounts and refunds offered to customers after a service failure (Tax, Stephen & Murali, 1998). As the inconvenience of failure causes dissatisfaction, small gestures of compensation can go a long way.

5.2.2 Procedural

Then, we observe Graph 4.4.2 which shows procedural justice measured in all three recovery types. Customers on average had high satisfaction when the recovery time was less than 5 minutes in all scenarios. This is due to the fact that customers want to arrive to an outcome of a dispute. Table 4 shows the high satisfaction if efficient systems are implemented while low

satisfaction if wait times are kept longer. Implying that organizations should prioritize efficient systems to make smaller wait times during recovery.

5.2.3 Interactional

Lastly, in Graph 4.4.3 interactional justice was measured all in all three recovery types. At a high satisfaction of 4.19, people want friendly and apologetic front line employees to handle the recovery. When involved parties interact and treat one another in respectable manner, an exchange is considered to be fair. Customer's perceive fair behaviours demonstrating politeness, concern and honestly. Organizations should focus on making genuine effort during failures as customers often have negative emotions. If not, low satisfaction can be seen in all recovery types as people don't want to be treated rudely no matter how they recover.

5.2.4 Most Effective Justice

However, in Comparison of all the justices we can see in Graph 4.4.4 that the majority of customers want organizations to display procedural fairness during the recovery process. Procedural fairness according to Wilson et al (2016) is when customers expect fairness in terms of timing, speed and ownership. Unlike traditional full service encounter, SSTs allow customers the convenience to overcome traditional constraints, such as time. Customers want to accomplish tasks by themselves in shorter amounts of time. However, when service failure occurs recovery time is critical to generating a satisfied customer. According to (Dabholkar 1996) the speed of the transaction is defined as the time it takes to actively complete a transaction via an SST. Understanding this factor, we theorize why procedural fairness produces higher levels of satisfaction. Customers want the transaction after the failure to be recovered in a timely manner. This is important for the firm to deliver fast conclusions indicate efficient procedure.

Secondly, the organization's ability to assume responsibility for the failure is another fundamental element in procedural justice. Customer involvement in service delivery increases the probability of service failures (Parasuraman 2006). SSTs can and do fail at times because of human error and technical problems. However, this does not mean customers should be fully blamed or admit the responsibility for failure occurring. This may be a reflection of the saying "the customer is always right". This is significant insight to how a firm should be handling entire procedure. First admitting responsibility for the failure and then proceeding to recover.

5.3 Customer Perception and Participation in Joint Recovery

The second step in contributing to joint recovery literature is examining why customers would get involved in failure. In the case of retail self service technology failure, we wanted to measure what factor correlated to participation. This section focuses on factors that influence participation

such as attribution internal, external; and perceived control. Other factors fell under the category perceived benefits in regard to money, improving the situation, and desire to learn service for future use. All concepts presented were taken from previous literature in studying motivation and service failure and will contribute to new insight on joint recovery literature.

5.3.1 Perceived Control

Consumers perceptions of control are vital in shaping their evaluation of the recovery efforts. In Graph 4.5.1 we measure how customers perceived control in all recovery scenarios. Firm recovery had the highest indication of perceived control, while joint recovery had the lowest perceived control. Perceived control is defined as the degree to which a customer believes they have the ability to improve the situation. We can interpret from the results that customers may feel more in control if the firm oversees the problem. While in joint recovery, dividing the work between the firm and customer can seem overwhelming thus, producing lower perceived control. This is because joint recovering is an emerging strategy that can produce uncertainty for the consumer (Heidenreich, Wittkowski, and Handrich 2015).

5.3.2 Attribution

In Graph 4.5.2 we measure attribution in all recovery scenarios. Attribution according to Weiner (1985) is how a customer reasons the causes of performance for an event, such as a failure. In normal situations such as traditional checkout, people attribute success internally to the self, but attribute failure to the firm (Clark and Isen 1982). The recovery averages show that most consumers agreed that the failure was due to external attribution, or they blame the firm. While only a few agreed that the failure was caused by their own actions. Attribution behaviors can become irregular when such routine events occur (Weiner 1986). Considering that co-creation in service delivery increases service complexity, we can assume that failure occurs routinely. Thus, consumers in an attempt to guard their self-esteem in situations of failure attribute externally. Therefore, in this scenario multiple failures can cause consumers to re-evaluate their attributions. In an attempt for customers to protect their self-esteem customers exhibit such attributions (Harvey et al. 2014).

5.3.3 Perceived Benefits

Then in Graph 4.5.3 we measure the perceived benefits of participation in all recovery scenarios. In highest factor in all scenarios was if money was involved meaning that a customer would strongly participate if they knew a cost was incurred and at risk. Customers are driven to co-produce in resolutions to reduce that risk (Cheung and To, 2016). Implicating that when a failure occurs if the customer's money was involved in the process they would be twice as likely to work towards a solution that benefits them. Also, when a service failure happens customers

perceive some degree of imbalance during the social exchange. To balance the exchange customers, need to receive more from the services recovery than expected for example a refund or discount on future purchases.

5.3.4 Factor Comparison

Lastly, in Graph 4.5.4 we compare all the factors to better understand what factors really drive customer participation in service recovery. Results showed that the majority of people strongly agree that they would participate if money was involved. Customer's get involved to balance the degree of social exchange made during the transaction. However, since each customer is at a different socioeconomic status we can't assume that money will be a priority for everyone.

The second highest factor of participation was wanting to improve the situation. Customers who engaged in recovery strategies benefit in two ways. The first is increasing their own personal competence and self-esteem by learning during the recovery process. Then, wanting to improve the situation in the moment. Which ties us back to procedural justice we see that efficient timely recoveries produce more satisfied customers. Although customers can't expect flawless service every time they use an SST. When failure does occur it only makes sense that improving the situation quickly would cause consumers to participate.

While the lowest factor of participation was internal attribution or blaming oneself for the cause of the failure. Based on previous studies, in cases such as self service retail failure it may be more common for failures to occur. So the attributions of the consumer would be oriented to blame the firm because failures occur often. Consumer's would rather protect their own self-esteem than to think that their actions consistently bring failure. Explaining why external attribution is higher than internal.

5.4 Customer Satisfaction and Loyalty

The last phase of the research focused on customer satisfaction and loyalty. Customer satisfaction and loyalty is how businesses retain customers. Therefore, this is an important factor to consider for businesses since recovery is important to rebuild or retain customer satisfaction and loyalty (Maxham & Netemeyer, 2002). Customers value businesses that oblige and assume an importance in the relationship between customer satisfaction and loyalty to a business. As this research studies service failure, businesses must prepare what to do when an inevitable situation of service failure occurs. Since the ultimate goal of service providers is to maintain customer satisfaction and loyalty, it is important to understand customer satisfaction and loyalty when joint recovery is involved. Through satisfaction in comparison to dissatisfaction for each recovery scenario, joint recovery can be compared and examined to understand if it results in customer satisfaction and loyalty.

5.4.1 Recovery Satisfaction

The graph 4.6.1 shows the recovery type satisfaction levels between firm recovery, customer recovery, and joint recovery. This comparison is important because when recovering, dissatisfaction is replaced with satisfaction a concept linked to loyalty (Soderlund, 2001.) In comparison, recovery satisfaction is the highest for firm recovery, then joint recovery and finally customer recovery. This shows that firm recovery and joint recovery satisfy people more than customer recovery. Customers are more satisfied to recover with the firm, or jointly recover than to recover completely by themselves, through customer recovery. Assuming that retail kiosks fail often consumer's want to protect their own self esteem. Vargo and Lusch (2004) suggest that co-creation influences customers assessments of satisfaction. It allows customers to enhance their own competency with the SST and increase self-esteem. As a result, their hard work has positive effects on satisfaction. In joint recovery and firm recovery customer's attribute blame to the firm however, being involved shows greater satisfaction because consumers are protecting their ego. When customers with low internal attribution or self blame participate in customer recovery they feel dissatisfied as the concept of recovering alone seems like a chore. Thus, joint recovery and firm recovery have higher satisfaction levels because the effects of the failure do not weigh on solely consumers.

6. Conclusion & Discussion

The final written chapter will contain conclusions and discussions drawn from the research. The major insights will be examined first through general conclusions. Then, implications of the study will be overviewed in three different categories. These categories include academic, practical and societal implications. The final section will cover limitations and future research. This will conclude the writing sections of the study.

6.1 Conclusion

The purpose of this research was to explore how joint recovery results in customer satisfaction and loyalty. This was done through the use of two other recovery outcomes, firm recovery and customer recovery. The further purpose of this paper was to understand these concepts through self-service technology kiosks during failure scenarios. Service failure is an important concept to understand as new technologies such as self-service kiosks are implemented. As research shows, when customers are involved there is bound to be complex situations and even failures during the service (Parasuraman, 2006).

The research questions were formed on the basis of the concepts and the literature peer-review completed. The questions formed from the theories and concepts that seemed the most important and vital to be studied. The intentions were to help further the research done and broaden the understanding of the topics at hand. The basis of the research stems from the fact that self-service technologies are a growing industry. It is based on this fact that although these services are convenient and helpful, they will fail. Therefore, companies and businesses must know precisely how to counteract these failures to ensure customer loyalty and satisfaction. The peer-review literature provided evidence of the most important factors revolved around customer loyalty and satisfaction, and the answers to how they affect this is discussed here.

The conclusions that can be drawn from the demographics minimal due to the fact that time constraints did not allow demographic analyzation in relation to the research questions. The conclusion is that the demographics of the sample size were mostly American, and all in the young-adult to middle age range. This can be concluded that these were the most apt people to take the survey, therefore providing conclusions on a range of people who were using technology to access the survey. Further conclusions can be drawn that the technology familiarity of the respondents was fairly high. This leads to conclusions that the majority of respondents knew what they were answering about and provided probably accurate results in terms of use of technology.

The first research question helped us understand what dimension of justice from justice theory was most effective for customer loyalty in retail self-service technologies. Therefore, to

contribute to joint recovery literature, it was essential to understand what dimension customers saw as "fair" in correlation to satisfaction.

RQ1: *"What dimension of justice is most effective for customer loyalty?"*

The majority of participants considered procedural justice in retail self-service failure as an important fairness to consider in recovery. Procedural justice deals with the execution of a fast and efficient recovery. Thus, meaning customers want recovery transactions handled in timely manners. Therefore, because most consumers agreed they would be satisfied with this dimension of fairness. We can conclude that procedural justice produces effective customer loyalty in retail self-service technologies. Replacing the dissatisfaction of failure with the satisfaction of procedural justice.

The second question builds to the first question in contributing to joint recovery literature. By examining why consumers would be willing to participate in joint recovery in retail self-service technologies. An important aspect was looking at the driving factor that got participants involved because then we could better underlying motives.

RQ2: *"What are the influential factors that encourage recovery?"*

We can identify that the most influential factor to encourage recovery is money. Earlier in the study we identified that consumers consider recovering important if their money is at risk. Results clearly showed that balancing the social exchange in the transaction would encourage participants to recover. However, this factor cannot be proven to be the driving factor since consumers may value money differently. Improving the situation was another major influencer for consumer's in participating in joint recovery. With benefits of improving the transaction time, increasing self-esteem and confidence in the SST for future reuse.

Regarding attribution, a contradictory result from the theories was presented in the frame. We had expected that consumers would have higher internal attribution because they co-created in the service. However, results showed that consumers had low internal attribution and high external attribution for the firm. We concluded that this unexpected outcome, could be explained by the frequency of failures happening with retail self-service technologies thus, affecting normal attribution behavior. We identified that consumers protect their self-esteem from recurrent failures by blaming the firm to protect themselves.

The third research question was aiming at the last part of our purpose, which was to see the see if joint recovery had outcomes in customer satisfaction and loyalty in retail self-service technology. Putting all the pieces together to understand what the firm can do to improve satisfaction and why consumer's get involved. To outcomes of customer satisfaction and loyalty.

RQ3: *"Compared to firm, and customer recovery does joint recovery result in customer satisfaction and loyalty?"*

The benefits of joint recovery compared to firm recovery and customer recovery cause higher levels of satisfaction compared to only customer recovery. We identified that in retail self-service failure people gain more satisfaction recovering with the firm or jointly recovering than customer recovery. Additionally, we found that main causes of choosing firm recovery and joint recovery results in customer satisfaction and loyalty because participants want to improve their confidence in the SST. While, customer recovery compared to joint recovery does not produce satisfied customers because recovering alone feels like a chore to the consumer. We can conclude that compared to firm and customer recovery that joint recovery does create customer satisfaction.

6.2 Implications

The implications are divided into three sub chapter to point out the academic, practical and societal implications for our research.

6.2.1 Academic

Our research focuses on the outcomes between customer satisfaction and loyalty in retail self service technologies. It is contributing to the joint recovery literature in self service checkout since we identified that the field was under researched. We are contributing to the field of research by adding value to the academic literature on customer satisfaction and customer participation in joint recovery. Furthermore, our analytical framework really takes view of the customer perspective.

Our approach can help researchers explore and find out the relations of how customer participation has outcomes in satisfaction and loyalty after service failure. Furthermore, those influencing factors of participation are affecting the customer's level of satisfaction and loyalty. The theoretical framework is adaptable for service recovery and any participation process with changes to the influencing factors since they can differ from individual to individual.

6.2.2 Practice

The practical implications are addressed to the retail self service technology industry and refer to suggestions that came up from the results from participants in regards to service recovery. The first suggestion of improvement for the industry in recovering is using justice theory to recover dissatisfied customers. We found that most participants would feel satisfied if procedural justice was implemented in retail self service failure. Our findings show that customers want procedural justice because it saves times, increases efficiency, and is convenient. So we recommend that

retail self service checkouts implement efficient procedural justice as it might increase customer satisfaction after failure.

Furthermore, after understanding why customers would participate in recovery in retail self service we came to new insights. Our participants would get involved for money and to improve the situation. So we recommend that the industry focus on training employees to help the customer learn during the recovery situation. By doing self esteem, confidence, and satisfaction increase. Since retail self service technologies fail often customers will protect their own self-esteem thus, recovery by front-line employees should work towards increasing customers self esteem with the SST. The recommendations are related to retail self service technologies during recovery. Our results showed different suggestions for improvements in recovery, so we chose the most relevant suggestions.

6.2.3 Society

Our research findings identify the implications for society in regard to retail self service technology. We can suggest that there is a shift in attribution patterns toward the failure of self service kiosks. The demand of self service kiosks is growing yet failure happens often. Resulting in consumer's blaming the firm for the co-created service instead of themselves. This observation can be negative as consumers can go back to traditional checkouts or refrain from complaining. Thus, the evolution of retail self service kiosks is at a halt. Assuming this can be a problem if grocery stores are implementing outdated SST.

6.3 Limitations Reflection & Future Research

The conclusions that have been drawn have exploited all the limitations of the research, as well as ideas for future research. The limitations center around the time constraint of the study and further usage of the theories. The limited timeframe provided for less data collection and the consequences are clear within the sample size and technique. Furthermore, the time constraint limited the analysis of the research which could have been further analyzed in terms of demographics. The limitations of this study did not allow this analyzation to be completed. There are a few other limitations surrounding the problem of time. The sample size could have been larger and thus geared towards the greater population, but was impractical for the short timeframe of this study. Another limitation has been the literature collection. The literature accessed was slim and next time should be greater. Although these limitations were clear and held a presence throughout the study, we were still able to come to conclusions and also make suggestions for further research. Also, the use of the theories could have been studied more in depth to come to deeper conclusions on their effect on the research questions.

From these limitations and the research collected, there are a few different suggestions for further research. The first suggestion for future and further research revolves around time. If more time allowed, a comparison of demographics on the research questions would have been very applicable to the study. Through using demographics such as age and gender on the use of self-service technology in service recovery situations, businesses can gain more accurate and informative recovery techniques. Furthermore, a larger sample size that pertains more towards the general population would be a future suggestion due to the fact that the research could then be more generalized. It is evident that this study has provided ample information. If studies like this are further implemented and done, more information on self-service technology customer participation and satisfaction levels can make for better service recovery efforts and improve businesses. This will further improve service quality overall.

A further suggestion is to take a different approach to data collection. Through a more qualitative approach of interviews, as well as viewing more real world examples of service recovery efforts than a better basis for reflection on customer participation and satisfaction can be studied. A closer inspection will almost be more suitable if comparing age, gender and other demographic factors that influence personal satisfaction and participation for customers and consumers. A final recommendation revolves around further research within the Theoretical Framework that has been drawn from the Analysis chapter.

To begin with, further studying of internal attribution in more scenarios that involved co-creation can help uncover how people truly feel about the situations. Through the addition of more scenarios relating to different theories such as attribution or other factors such as time, more knowledge about the customer can be found. From the conclusions made, further studying self-service in relation to co-creation and the self esteem of customers and their satisfaction levels will help businesses who use the technology extremely.

Businesses and companies must understand their customers and consumers to offer the best service quality. Due to the fact that service failure is inevitable during these processes, especially while using self-service technology as it is not completely perfected, research in this field is necessary. It is imperative that studies such as this are repeated and further tested and studied in the future. Joint recovery, firm recovery and customer recovery are important during service failure. Through use of customer satisfaction, perceived justices and loyalty businesses can gain longer lasting customers and holding the competitive advantage.

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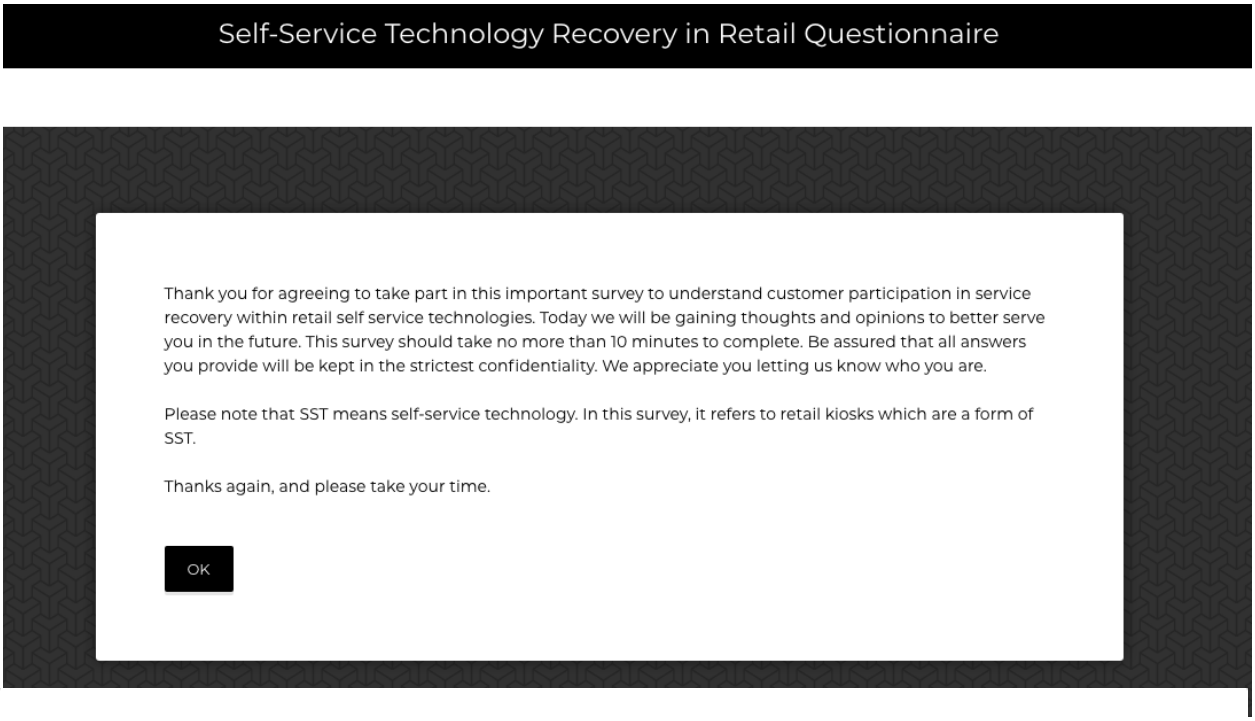
8. Appendix

This Appendix includes the full layout and structure of the survey sent out to the participants of the research process.

8.1 Survey



* 1. What is your Nationality?

* 2. What is your Gender?

- Female
- Male
- Prefer Not Answer

* 3. What is your age?

- Under 18
- 18-25 years old
- 25-30 years old
- 30-40 years old
- 40-50 years old
- 50-60 years old
- 60+ years old

* 4. What would you say your familiarity with technology is?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

* 5. You are trying to purchase eggs for dinner. At the self-service retail kiosk, the scanning system malfunctions while placing the item on the conveyor belt and the overhead lights goes off informing you to wait for employee assistance. Select the following options:

	Very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
Would you be satisfied with compensation in the form of a coupon?	◯	◯	◯	◯	◯
Would you be satisfied with no compensation?	◯	◯	◯	◯	◯
Are you satisfied if the recovery process is less than 5 minutes?	◯	◯	◯	◯	◯
Are you satisfied if the recovery process greater than 5 minutes?	◯	◯	◯	◯	◯
An employee comes to help you and is very friendly, and apologetic and solves the problem right away.	◯	◯	◯	◯	◯
An employee comes to help you and and solves the problem, but is not very friendly or apologetic.	◯	◯	◯	◯	◯

I am confident in my ability to use this SST.	○	○	○	○	○
I am satisfied with the steps of the recovery process. (It is clear on how to solve the problem.)	○	○	○	○	○
Would you be satisfied to use this SST again if you had the choice?	○	○	○	○	○
Does this scenario dissatisfy you and affect your opinion of the SST in comparison to traditional checkout?	○	○	○	○	○
How satisfied about the solution to this problem (waiting for employee assistance) are you?	○	○	○	○	○

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
While working with the service technology, I felt in control	○	○	○	○	○
The firm is responsible for the failure	○	○	○	○	○
I am responsible for the failure	○	○	○	○	○
The problem that led to the failure was clearly caused by me	○	○	○	○	○
Participating in the recovery effort is important to me	○	○	○	○	○
I believe participating in the recovery process could improve the situation	○	○	○	○	○
I feel motivated to participate if my money is at risk	○	○	○	○	○
I feel motivated to engage in recovery to broaden my future understanding of the desired service	○	○	○	○	○

* 6. You are trying to purchase eggs for dinner. At the self-service retail kiosk, you notice that it scanned one item twice. You try to figure out how to remove the item yourself, but further implicate the problem. You then request assistance. Select the following options:

	very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
Would you be satisfied with compensation in the form of a coupon?	○	○	○	○	○
Would you be satisfied with no compensation?	○	○	○	○	○
Are you satisfied if the recovery process is less than 5 minutes?	○	○	○	○	○
Are you satisfied if the recovery process greater than 5 minutes?	○	○	○	○	○
An employee comes to help you and is very friendly, and apologetic and solves the problem right away.	○	○	○	○	○
An employee comes to help you and and solves the problem, but is not very friendly or apologetic.	○	○	○	○	○

I am confident in my ability to use this SST.	○	○	○	○	○
I am satisfied with the steps of the recovery process. (It is clear on how to solve the problem.)	○	○	○	○	○
Would you be satisfied to use this SST again if you had the choice?	○	○	○	○	○
Does this scenario dissatisfy you and affect your opinion of the SST in comparison to traditional checkout?	○	○	○	○	○
How satisfied about the solution to this problem (trying to solve the problem but failing) are you?	○	○	○	○	○

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
While working with the service technology, I felt in control	○	○	○	○	○
The firm is responsible for the failure	○	○	○	○	○
I am responsible for the failure	○	○	○	○	○
The problem that led to the failure was clearly caused by me	○	○	○	○	○
Participating in the recovery effort is important to me	○	○	○	○	○
I believe participating in the recovery process could improve the situation	○	○	○	○	○
I feel motivated to participate if my money is at risk	○	○	○	○	○
I feel motivated to engage in recovery to broaden my future understanding of the desired service	○	○	○	○	○

* 7. You are trying to purchase eggs for dinner. At the self-service retail kiosk, the machine incorrectly gives you the wrong change. Assume you receive your money back throughout the recovery process through employee assistance that you must cooperate with. Select the following options:

	Very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
Would you be satisfied with compensation in the form of a coupon?	○	○	○	○	○
Would you be satisfied with no compensation?	○	○	○	○	○
Are you satisfied if the recovery process is less than 5 minutes?	○	○	○	○	○
Are you satisfied if the recovery process greater than 5 minutes?	○	○	○	○	○
An employee comes to help you and is very friendly, and apologetic and solves the problem right away.	○	○	○	○	○
An employee comes to help you and and solves the problem, but is not very friendly or apologetic.	○	○	○	○	○

I am confident in my ability to use this SST.	○	○	○	○	○
I am satisfied with the steps of the recovery process. (It is clear on how to solve the problem.)	○	○	○	○	○
Would you be satisfied to use this SST again if you had the choice?	○	○	○	○	○
Does this scenario dissatisfy you and affect your opinion of the SST in comparison to traditional checkout?	○	○	○	○	○
How satisfied about the solution to this problem (having to work with the Grocery Store employee) are you?	○	○	○	○	○

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
While working with the service technology, I felt in control	○	○	○	○	○
The firm is responsible for the failure	○	○	○	○	○
I am responsible for the failure	○	○	○	○	○
The problem that led to the failure was clearly caused by me	○	○	○	○	○
Participating in the recovery effort is important to me	○	○	○	○	○
I believe participating in the recovery process could improve the situation	○	○	○	○	○
I feel motivated to participate if my money is at risk	○	○	○	○	○
I feel motivated to engage in recovery to broaden my future understanding of the desired service	○	○	○	○	○