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Customer satisfaction: I ask, therefore it exists? - Impact of firm-sponsored customer satisfaction surveys on participants' behaviours

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"Everyone has a plan until they get punched in the mouth" - Mike Tyson

Dedicated to Odete Santos Silva Queirós, Adolfo Oliveira de Almeida, Márcia Queirós de Almeida, Stefanie Wetzka and Johnny Cash.

When I applied to the Doctor of Business Administration program at the Nottingham Trent University, I had a plan. I found a program that offered a fantastic opportunity to combine the ability to contribute to the body of knowledge as well as enhancing managerial practices. My goal of completing the program was ambitious, but I had a plan. I recall Prof. Tony Woodwall saying (what back then sounded like just a cliché) that the most important thing is the goal and the journey, not the plan. Now that I am about to conclude the journey by submitting my thesis, I can fully appreciate the meaning of those wise words.

In fact, in September 2016, I had a plan which was perfectly aligned to my professional and personal goals for the next few years. The research project that I envisaged was aligned to my professional life, since I was responsible for the voice of customer program at EDP Energias de Portugal SA (hereinafter designated Utility) where I worked. Not only would the conclusion be relevant for my job, but having the job that I had would also make it easier to carry out the experiment and access the data that I required more easily. Everything was going according to the plan until I got "punched in the mouth". I had just received the approval for Document 3 and I was about to start implementing it when a life changing event occurred. I decided to accept a new professional and personal challenge that involved changing company and moving from Portugal to Estonia. Once I had overcome the legal issues that emerged as a result of me leaving the Utility I successfully negotiated an agreement with the company allowing me to continue with my experiment. After this bump in the road, it seemed that my plan was back on track. However, it was not only me that had changed. The Utility had also changed and when I contacted them to start the experiment, I was faced with the hurdle of a new team running the platform who were not familiar with my project. This required numerous meetings and discussions with the new team in order to move forward. Understandably, my research project was not their top priority. Additionally, the fact that all of this had to be done remotely, made things even more challenging. As a result, I had to make two significant concessions, one relating to the execution of the experiment and the second relating to data access. I only had two days to conduct the experiment (instead of a minimum of one week which I had requested) and the company only agreed to provide me with anonymised information at two points in time (on

the date of the experiment and twelve months later) with no possibility of interim measurements. Subsequently the pandemic entered our lives, which impacted us all.

In June 2020, I moved back to Portugal from Estonia and started my own consultancy company (Ideatest) and accepted a new professional challenge as Chief Marketing Officer at a scale-up company. In the meantime, the access to data from the Utility was delayed and the ability to discuss the analysis very limited. However, here I am, still feeling the impact of the "punches in the mouth", but with a big smile on my face. What a ride! I made it, but I could not have made it without the help of several people who I would now like to acknowledge in no particular order.

I want to thank Prof. Jorge Velosa for jesting with me to consider the challenge of the Doctorate program. I still remember his warm smile saying "you can do it, easily". Well, it was not easy but thank you for challenging me. The second individual who spurred me on to apply to the program was Prof. Duarte Pitta Ferraz. I cannot thank you enough not only for this, but also for all the support and opportunities to challenge myself that you gave me throughout the program. I am especially thankful for your mentoring and support, including the brainstorm call we had on the day before Christmas back in 2016.

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This journey would not have been possible without the unwavering support of my family, friends and Johnny Cash (my dog). To my friends, I will not mention any names, but you know who you are. I will however include the names of my family members, as it is important to me

that the readers of this thesis see the names of those who have sacrificed a great deal in order from me to successfully complete this most recent journey. I love you: Odete Santos Silva Queirós, Adolfo Oliveira de Almeida, Marcia Queirós de Almeida.

Last but definitely not least, I would not have been able to conclude this journey without the infinite support of Stefanie Wetzka who soon, I will be lucky enough to call my wife. I am a lucky man and you are my shining light. Thank you.

> "*You can't always get what you want*
> *But if you try sometime you find*
> *You get what you need*" – The Rolling Stones

ABSTRACT

This research contributes to the common body of knowledge of Question Behaviour Effect (QBE) and Mere-Measurement Effect (MME) by exploring several issues that have emerged from the critical analysis of the existing literature on the influence of firm sponsored customer satisfaction surveys on subsequent behaviour of the customers. The main goal of this study was to assess if and how firm sponsored customer satisfaction surveys can influence participants' behaviours and impact business outcomes, in particular defection, repurchase, complaints and profitability. This study expands on previous research by going beyond the exploration of the direct impact of responding to firm sponsored customer satisfaction surveys. Moreover, this study explores the impact that can emerge from customers simply receiving the survey (even if they do not reply) and the impact of the company replying (or not) to the customer that answers the survey. In addition, the potential moderator effects of tenure and satisfaction levels on the MME existing between independent and dependent variables was studied.

A field-based experiment was developed by collaborating with a Portuguese utility company whose existing customer satisfaction survey platform was used to measure the impact of different scenarios around the administration of firm-sponsored customer satisfaction surveys on the dependent variables defection, repurchase, complaints and profitability, based on measurements made on the date of the experiment and twelve months after. From the study conclusions, it is possible to highlight: i) customers participating in the surveys present lower defection and higher profitability than the control group (no survey); ii) customers that received the survey and did not reply to it present higher profitability than the control group, iii) customers that participate in the survey and receive a "thank you message" present lower defection than customers that participated and did not receive a "thank you message" ; iii) Customers that received the "thank you message" by phone show higher repurchase and higher profitability than customers that received the "thank you message" by e-mail. Although due to data limitations it was not possible to perform regression analysis on moderating interactions, the study presents also relevant findings about the influence of tenure and satisfaction on the impact of firm-sponsored customer satisfaction surveys.

From the conclusions of the experiment, relevant contributions were identified for a better understanding of MME, exploring some gaps in knowledge that have been identified, and presenting original contributions to MME research (in particular, the *ex-ante* and *ex-post* MME). In addition, several recommendations were identified from a managerial perspective, namely for a better cost/benefit analysis of running firm-sponsored customer satisfaction surveys. The thesis also identifies limitations of the study and highlights areas for potential future research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ANNEXES

LIST OF ABREVIATIONS

ACER - Agency for the Cooperation of Energy Regulators

QBE – Question-Behaviour Effect

MME – Mere-Measurement Effect

NPS – Net Promotor Score

CRM – Customer Relationship Management

NTU – Nottingham Trent University

EFM - Enterprise Feedback Management

VOC – Voice of Customer

EU – European Union

ECSI – European Customer Satisfaction Index

ACSI – American Customer Satisfaction Index

IVR – Interactive Voice Response

CHAPTER 1 - INTRODUCTION

1.1. Importance of Research

1.1.1. Background

Customer satisfaction has long been considered a highly sought-after goal of business and marketing strategy and is a key driver of value creation for any business operating in a competitive market. In particular, satisfied customers are considered to be brand loyal, remain customers for longer, provide favourable word-of-mouth advertising, increase purchasing volume and variety, and ultimately enhance revenues, reduce cost and increase profitability. Conversely, dissatisfied customers are likely to switch providers, stop purchasing suppliers' offerings, provide unfavourable word-of-mouth advertising, complain, return and/or boycott the products, the brand and the seller, impacting both the revenues and costs, potentially leading companies out of business. Therefore, customer satisfaction has assumed a central role in both managerial practice and business management theory (Aksoy, L. et al., 2008; Ameer, 2014; Anderson, E. W. et al., 1997; Anderson, S. et al., 2008; Burton, 2010; F.Reichheld, 2003; Fornell et al., 2016a; Gupta & Zeithaml, V., 2006; Heskett et al., 2008; Jones, O. T. & Sasser (Jr), 1995; Keiningham, T. L., Cooil, Aksoy, L. et al., 2007a; Kumar & Reinartz, W., 2018; Larivière et al., 2016; Oliver, 2010; Tse & Wilton, 1988; Vargo & Lusch, 2008; Woodruff, 1997). This applies even for those authors that question that role or offer alternative concepts to link customer behaviour and business outcomes such as, for example, customer experience (Clark, 1999; Palmer, 2010) and customer engagement (Brodie, Hollebeek, Jurić et al., 2011; Kumar, 2017; Kumar et al., 2010; Pansari & Kumar, 2017; Verhoef et al., 2010; Vivek et al., 2014). Given the importance of customer satisfaction, marketing research has given great priority to understanding and measuring customer satisfaction (Calder et al., 2016). In addition, companies have invested heavily in acquiring this information through customer satisfaction surveys, through inhouse firm sponsored surveys or outsourcing that service to market research firms (Mittal, V. & Frennea, 2012; Rust et al., 2004).

In light of this, it is no surprise that, after the liberalisation of European energy markets, customer satisfaction has also become a cornerstone of utility's retail business. In the previously regulated framework, the relationship between utilities and customers was constructed as a monopoly. Post liberalisation, customers have the right to choose their energy provider and are

free to switch suppliers. Therefore, in the retail part of the business, customers are the most meaningful asset of utilities (Nesbit, 2001). Like any other business operating in a competitive market framework, utilities have discovered the importance of adopting a strategic approach to customer satisfaction (Hartmann & Apaolaza Ibáñez, 2007; Novak, 2002; Walsh et al., 2006). For example, the acquisition costs of new clients can be up to five or six times higher than costs associated with the retention of satisfied customers (Ibánez et al., 2006). In addition, since energy is a commodity, utilities face an increasing pressure on their margins. In response to this challenge, there is a trend among utilities to expand their core business to offer value-added services (Bigliani & Gallotti, 2013), for which they need to strengthen customer relationships and increase customer satisfaction (Nesbit, 2000; Senia, 2002). Therefore, utilities have a special interest in measuring and managing customer satisfaction (Ibánez et al., 2006; Nesbit, 2000). Similar to other businesses in competitive markets, researching customer satisfaction is critical for utilities to improve their service and to adapt their products and services to meet customer preferences (Brodie, Hollebeek, Juric et al., 2011). Consequently, customer satisfaction surveys have an increasing importance for energy companies, not only benchmarking for competitive advantage, but also for obtaining information on customer sentiment in order to improve customer service and, consequently, customer satisfaction. This explains why a big part of the utilities' market research budget is allocated to this kind of investigation (Antonevich, 2002). Yet, like in other industries (Anderson, S. et al., 2008; Morgan, N. a. et al., 2005), this view of the impact of customer satisfaction surveys may be underestimating the potential additional effects relevant to the assessment of a cost/benefit analysis of performing such surveys.

1.1.2. Research Problem

W. Edwards Deming is known for having written "nothing becomes more important just because you can measure it. It becomes more measurable, that's all" (Deming, 1986; Peppers, 2018). However, according to the Mere-Measurement Effect (MME) theory measuring customer satisfaction can change the behaviour of customers and impact business outcomes (Dholakia, U. M., 2010). This assessment from MME assumes the central position of this research and it supported the hypotheses formulation that were tested according to research design set below.

The genesis of MME can be traced back to the Observer Effect (physics), according to which the act of observation will produce changes on a phenomenon that is being observed (Bridgman, 1927). In the social sciences this effect has been studied under the research label of Question-

Behaviour Effect (QBE), which incorporates the research around Mere-Measurement Effect (MME) and Self-Prophecy Effect (SPE) (Dholakia, U. M., 2010; Rodrigues et al., 2014; Sherman, 1980; Spangenberg, E. R. et al., 2016; Spangenberg, E. R. & Sprott, 2006; Spangenberg, E. R. et al., 2003; Sprott, Spangenberg, E. R., Block et al., 2006; Wilding et al., 2016; Wood, C. et al., 2016). In its broadest sense, the QBE suggests that questions used to evaluate phenomena such as intentions, predictions and satisfaction have a direct influence on the behaviour of those who are being asked the questions. In fact, several studies and meta-analyses have found that answering those questions can influence respondents in a variety of ways and through different psychological processes (Dholakia, U. M., 2010; Sprott, Spangenberg, E. R., Knuff et al., 2006; Wilding et al., 2016). From a conceptual point of view, the QBE research can be divided in two different streams (Dholakia, U. M., 2010). The "Self-Prophecy Effect" (SPE) research focuses on the effects of survey participation on socially normative behaviours, i.e. acting or not acting have socially desirable or undesirable elements, such as voting, health habits, drug use, etc (Feldman & Lynch, 1988; Sherman, 1980; Spangenberg, E. & Obermiller, 1996; Spangenberg, E. R. & Sprott, 2006; Sprott, Spangenberg, E. R., Block et al., 2006). The "Mere-Measurement Effect" (MME) research investigates the impact of respondents' participation in terms of consumer behaviour that is normatively neutral from a social standpoint, i.e., acting or not acting does not have socially desirable or undesirable elements such as purchase intention and customer satisfaction (Bone et al., 2017; Chandon, P. et al., 2004; Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Dholakia, U. & Morwitz, V., 2002; Morwitz, V. G. et al., 1993; Ofir & Simonson, 2007; Sharad Borle et al., 2007).

Traditionally, customer satisfaction has been measured through surveys, which typically can be managed by - product or service providers (firm sponsored surveys), market research firms or independent third parties (Fornell et al., 1996; Neely, 2004). Market research and customer satisfaction surveys are seen as measurement activities separate from the marketing activity and neutral in terms of the capacity of influencing customers' behaviours. Therefore, it is sometimes difficult for companies (especially for the Chief Financial Officer) to see the financial benefits of the cost of customer satisfaction research. The rational management justification points out that measuring and analysing customer satisfaction is important because it allows organisations to learn in a continuous manner and to adapt their offerings to customer preferences (Jones & Sasser [Jr] 1995; Novak 2002). There is evidence that companies that proactively manage customer satisfaction feedback are, on average, 5% more productive and 6% more profitable than their competitors (Ordenes et al., 2014). Also, research has found that customer satisfaction reporting by companies positively affects both their financial performance (Fornell et al., 2009; Larivière et al., 2016; Morgan, N. a. et al., 2005) and employee engagement levels (Bellon et

al., 2010). However, this line of argument assumes the neutral nature of the measurement of customer satisfaction. Recently, in the context of the QBE theories, this view has been challenged by some "Mere-Measurement Effect" (MME) studies, which have found short- and long-term impacts on customers' behaviours and business outcomes resulting from customers participation in firm sponsored customer satisfaction surveys. If confirmed, those impacts need to be considered in a cost/benefit analysis of customer satisfaction surveys (Bone et al., 2017; Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010).

This research is also relevant from a theory point of view. Given their relative novelty, QBE and MME domains show a lot of open questions that justify the need for additional research to bridge gaps and inconsistencies (Dholakia, U. M., 2010). Thus, the present study will address some unsolved issues in the study of the MME. The first issue is relative to the validity of MME's existence, since the effects that have been reported by MME studies have been questioned. In particular, some critics suggest that apparently observed effects can result from self-selection bias. In a non-experimental field setting, researchers found that when controlling self-selection and targeting bias, the MME diminished to insignificance for both purchase frequency and spending behaviours of customers (Anderson, E. et al., 2007). Another study found that when controlled for self-selection bias, the MME effect of joining a customer community was insignificant (Algesheimer et al., 2010). A second issue is relative to causality, with critics pointing out that the methods used by MME studies have significant limitations to support the causality relationship, in particular the lack of sample randomization (Sharad Borle et al., 2007; Shugan, 2006). A third issue is relative to theoretical explanations for the occurrence of MME, as varying explanations have been advanced for its apparent existence, including accessibility, consistency, fluency, motivation and inference (Dholakia, U. M., 2010; Dholakia, U. M. et al., 2010; Dholakia, U. & Morwitz, V., 2002; Feldman & Lynch, 1988; Fitzsimons & Williams, P., 2000; Kerckhove, Van et al., 2012; Morwitz, V. G. & Fitzsimons, 2004; Spangenberg, E. R. et al., 2008). A final issue is that the role of moderators has only attracted limited attention by researchers in the occurrence and intensity of MME (Dholakia, U. M., 2010).

Considering the importance of cost-benefit analysis on management decisions for maximising growth, profitability and value creation (Layard & Glaister, 1994; Neely, 2004; Ramezani et al., 2002), and exploring the MME framework (Dholakia, U. M., 2010), this research aims to study the impact of firm sponsored satisfaction post-service surveys on customer behaviour. In particular, the study focuses on the impact of those surveys on value creation emerging from the customer/supplier relationship, In addition, it helps to perform a better cost/benefit analysis of carrying out such surveys, considering defection, repurchase, complaints and profitability.

1.1.3. Research Approach

In order to study the impact of firm sponsored satisfaction surveys on customers' behaviours, this research has adopted a positivist and deductive approach, in which hypotheses are derived from a review of the pertinent literature. Subsequently, those hypotheses were explored through an experimental and quantitative research set to explore the relationship among firm sponsored satisfaction surveys, customer behaviours and business outcomes, considering defection, repurchase, complaints and profitability, and evaluating the moderator effect of customer experience with the company (tenure and satisfaction level). For this purpose, the research deploys a field-based experiment, using the data and survey management platform of the Portuguese utility company - EDP Energias de Portugal (hereinafter, identified as Utility). Using a randomised approach, the experiment was designed to allow the creation of a control group and test groups to test the relevant hypotheses. In the experiment, the independent variable was manipulation of different settings of the firm sponsored satisfaction survey and the dependent variables were defection, repurchase, complaints and profitability. Thus, the research is focused on the study of the behavioural and business outcome differences between different test groups and a control group of survey nonparticipants over the course of a year following the survey experiment. In addition, the research examines moderating factors (tenure and satisfaction) perceived as influencing the subsequent behaviours of experiment participants. Pre and post experiment information was collected both via Utility's ongoing survey management platform and its CRM system on two occasions: date of the experiment (January 2020) and 12 months (January 2021). The information was analysed using SAS University® and R GNU package. Ethical requirements of the Research Ethics Committee at NTU were satisfied and approval from NTU's Research Ethics Committee was obtained before experiment execution.

Although the field experiment was performed within the context of a utility company located in Portugal, the research results are considered to be relevant not only for other utilities worldwide, but also for any company, regardless of the industry, for which customer satisfaction is a value creation driver. At the same time, this research contributes to a better theoretical understanding of MME, exploring some of the most important gaps in knowledge that have been identified.

1.2. Research Rationale and Aims

This research aims to contribute to the common body of knowledge by exploring several issues that have emerged from the critical analysis of the existing research on the influence of firm sponsored customer satisfaction surveys on subsequent customer behaviour. Firstly, this research intends to contribute to MME research by assessing if and how firm sponsored customer satisfaction surveys can change participants' behaviours and impact business outcomes. This study will focus on the impact in terms of defection, repurchase, complaints and profitability. It is important to take in consideration eventual impacts that can emerge from the simple fact that there are customers receiving the survey (even if they do not reply) and the impact of the company replying (or not) to the customer that answers the survey. Although there are some references in literature to these two conditions (Bone et al., 2017; Challagalla et al., 2009; Flynn et al., 2017), they have not been studied in detail and they can have relevant implications both from a managerial point of view (since the potential impact is relevant to measure the potential value creation or destruction) and from a theoretical point of view (contributing to a better understanding on the mechanism that explains the MME in those situations). In addition, the research will contribute to theoretical explanations concerning the occurrence of MME. Finally, the study will explore the impact of relevant moderator variables in the context of MME on satisfaction surveys, in particular the degree of the experience with the company and satisfaction level declared on the survey.

In summary, guided by the overall research question ("*Do firm-sponsored customer satisfaction surveys have positive effect on business outcomes*"?), this study pursued the following research objectives:

- Research Objective 1 (RO1) - To determine the extent to which firm-sponsored satisfaction surveys have an effect on business outcomes.
- Research Objective 2 (RO2) – To assess the extent to which the degree of tenure with the company and the level of satisfaction may affect the impact of firm-sponsored satisfaction surveys on business outcomes.
- Research Objective 3 (RO3) - To contribute to a better cost/benefit analysis on deciding to carry out firm-sponsored customer satisfaction surveys.
- Research Objective 4 (RO4) – To present recommendations for maximising the value creation potential resulting from the use of firm-sponsored customer satisfaction surveys.

1.3. Potential Contributions to Practice

As previously mentioned, customer satisfaction has assumed a central role in both managerial practice (being considered a critical goal of business and marketing strategy), and as a key driver of value creation of any business in competitive markets. This occurs in European retail energy markets and other energy markets open to competition all over the world. Therefore, companies have a special interest in measuring and managing customer satisfaction, with companies spending a lot of resources on market research and customer feedback management. The growth of market research spending on customer satisfaction reinforces the importance of its analysis - in the US, for example, firms spend more than $750 million per year on this endeavour (Bone et al., 2017; Bowers & Brereton, 2015). In addition, created mainly for the purpose of measuring and managing customer satisfaction, a new industry has been created, namely Enterprise Feedback Management (EFM). This allows companies to solicit and manage feedback and data from their customers and to transform customer feedback into actionable information. It also enables the distribution of that information throughout an organisation (Kumar & Reinartz, W., 2016). However, there is a lack of knowledge about the benefits resulting from the allocation of those resources to the measurement of customer satisfaction.

This research has several managerial implications. First, from a financial point of view, the research will facilitate a better understanding of cost/benefit analysis of performing firm sponsored customer satisfaction surveys. Traditionally, as with all market research activity, these surveys are seen as a cost, with no direct positive financial impact on the performance of the company. If performing those surveys has a positive impact on customers behaviours and business outcomes, then it is necessary to consider those effects in terms of revenues, costs and, ultimately, in profitability.

Firstly, the benefits are especially relevant for services firms in competitive industries and those selling discretionary services (Dholakia, U. M. et al., 2010). However, even though the majority of studies in this field suggest a positive correlation between the surveys and business outcomes, some studies showed that the effect is not linear. For example, it has been demonstrated that when customers are informed in advance that they will be asked to assess the service, respondents show a more negative assessment of the service than those who are not informed (Ofir & Simonson, 2001; Ofir & Simonson, 2007; Ofir et al., 2009). Another study (Dholakia, Singh and Westbrook, 2010) showed that post-service satisfaction can have negative effects on business outcomes by increasing the 'interpurchase time lapse' (i.e. time between the first purchase and the occurrence of purchase repetition). In a different direction, a study by (Bone et

al., 2017) showed that using an open-ended question enquiring about the positive aspects of service presented larger positive effects in respondents behaviours when compared with the positive effect emerging from customer satisfaction surveys without the open-ended question. In conclusion, these studies suggest there are reasonable doubts about the net effect of post-service satisfaction surveys on customer behaviour and business outcomes. Thus, this research will be relevant for managers who want to gain a better understanding of the cost/benefit implications of performing those surveys (Fornell & Wernerfelt, 1987; Homburg & Fürst, 2005). Secondly, exploring the potential effects of surveys beyond those directly provided by knowing customer sentiment, the research will allow managers to fine tune their cost/benefit analyses in a broader sense, including a broader understanding of customers that receive the survey but do not reply, and how best to react, like acknowledging the effort of the customers in that action. Thirdly, considering the moderator effect of customer experience with the company (tenure and satisfaction level), the research allows managers to better manage customer satisfaction surveys, adapting these within the customer lifetime cycle and according to satisfaction level with the company. Fourthly, this research explores the issue of the separation between satisfaction-related marketing research and other marketing activities, particularly sales and promotions (Dholakia, U. M., 2010), since earlier findings suggest that a separation is not possible. This has implications not only for the company (for example, in terms of forecasting and prediction models), but also for market research companies and providers of EFM solutions. In addition, the findings of the research need to be understood from legal and ethical perspectives, given that there are laws that segregate marketing research and sales contacts, in order to prevent aggressive sales practices. Several trade and professional associations prohibit their members from trying to influence consumer behaviour through marketing research (Dholakia, U. M. et al., 2004). Finally, as previously mentioned, although the research will be performed within the context of a utility company located in Portugal, it is expected that the results will not only be relevant for other utilities worldwide but also for any company, regardless of the industry, for which customer satisfaction is a value creation driver.

1.4. Potential Contributions to Theory

From a theoretical standpoint, this research contributes to a better understanding of the field of knowledge labelled as MME within the context of QBE, and explores the influence of firm-sponsored customer satisfaction surveys on customer behaviour and business outcomes. The research will explore if, and why, participation in customer satisfaction surveys creates question-behaviour effects on customers. Most previous studies have sought to explain the

question-behaviour effect of customer satisfaction surveys based on accessibility-based explanations (i.e. questions make attitudes more accessible and they will influence the performance of the behaviours associated with those attitudes). Moreover, this research explores the possibility that there is a MME based on a specific inference-based process (i.e. the effect occurs due to the inferences made by clients about the motivations behind the satisfaction survey process and also the likely customer-focused behaviours of the organisation and not directly from answering to survey questions themselves (Dholakia, U. M., 2010)). This position has important consequences. Firstly, accessibility-based explanations argue that if customers express a positive attitude when answering, such as reporting high levels of satisfaction, they will subsequently show enhanced behaviour. When consumers have a negative attitude, the behaviour will be dampened. Inference-based explanations suggest a positive effect occurs in general, even among those respondents that report dissatisfaction. Secondly, the accessibility-based explanations highlight the short-term effects emerging from the impact of the survey on respondents' behaviour. However, according to inference-based explanations there are short and long-term effects emerging from the participation in the firm sponsored customer satisfaction surveys. Finally, the research will explore whether the influence of surveys on customer behaviour depends on both the extent of customer experience with the company and satisfaction level declared on the survey, both of which also supports the inference-based explanation (Dholakia, U. M. et al., 2010).

1.5. Thesis Structure

This thesis is organized into seven chapters. **Chapter 1** presents an introduction to the study, giving an overall summary of the project, including the research background, research problem and approach, research aim and objectives, plus original contributions to managerial practice and theory. **Chapter 2** provides a brief overview of the managerial evolution of customer satisfaction measurement as a component of business activity, highlighting trends and challenges, including the recent emergence of the Enterprise Feedback Management (EFM) industry. This chapter also provides a background of the European energy retail market, in particular the challenges that energy companies face in terms of customer satisfaction management as a result of market liberalisation. **Chapter 3** explores several relevant concepts and theories within the literature which are relevant to achieving the research objective. It starts with an overview of literature around customer satisfaction: definitions, theories, consequences and measurement. Then, the literature review explores one of the main challenges of the measurement of customer satisfaction which is the impact of asking questions on the behaviour

of respondents. Given the theoretical implications, it starts with QBE theories, as the umbrella label for the MME theory which is subsequently explored in greater detail. This highlights the specific challenges of measuring customer satisfaction via firm sponsored surveys and considers relevant moderator effects. Based on this review, a conceptual framework and research hypotheses are developed. **Chapter 4** comprises the description of the research methodology of this study, and provides a discussion and justification of the position assumed by the researcher in terms of ontological and epistemological positioning; research approach; data collection techniques; and data analysis techniques. **Chapter 5** presents an analysis of the research findings, including statistical testing of the hypotheses set. Interpretation of these results leads to decisions on whether the stated hypotheses are accepted or rejected. **Chapter 6** provides a general discussion on the results of this thesis and explores relationships between the research findings and positions explored in the literature review. **Chapter 7** is the conclusion of this thesis, and highlights the contributions made to both managerial practice and theory. This is followed by reflections on the study and recommendations for future research.

CHAPTER 2 – MANAGERIAL BACKGROUND

2.1. Customer Satisfaction as Business Goal

As previously discussed, in the last few decades, customer satisfaction has been one of the hottest topics in business management, both from a practical and academic point of view (Clark, 1999). However, the sheer importance of customer satisfaction (in its broadest sense) has been recognised for a long time and now goes hand in hand with day-to-day commercial activities (Harari, 2015). In fact, the first documented evidence of customer satisfaction (or in this case, dissatisfaction) management goes back to 1750 BC. A customer named Nanni received a shipment of copper ore from a merchant, Ea-nasir, but the quality of the material did not live up to expectations. Nanni expressed his dissatisfaction with the situation on a clay tablet expressing frustration and disappointment since the high expectations that Nanni had of the supplier had not been met (Nakata, 1970). In addition, the importance of customer satisfaction from a management perspective has been a crucial component of the evolution of modern marketing and business innovation, since satisfaction and meeting client needs, has been a key factor of post-industrial societies (Willot, 2018).

In this context, during the 20th century, the importance of customer satisfaction measurement and management has been closely intertwined with the evolution of marketing and business strategy. Up to the 1970's and 1980's, the systematic measurement of customer satisfaction was done mainly through traditional market research, using external consultants and conducted via in person or phone surveys. These methods of market research were costly and time consuming (Willot, 2018). The technological evolution that followed enabled companies to start measuring customer satisfaction in a more systematic way, benefiting from the advances in data bases and data analysis tools. In the late 1980s and early 1990s customer surveys began being conducted by Computer Assisted Telephone Interviewing (CATI). This is a survey technique where an interviewer follows a defined script enabling responses to be collected and entered in real time and scripts to automatically change based upon entered responses (Willot, 2018). The 1990s was the decade during which internet-based customer feedback systems really came into their own. Direct consumer research became primarily web-based during this decade. In recent years there have been significant changes within the realms of customer satisfaction assessment and gathering customer feedback. A notable development has been the emergence of the Enterprise Feedback Management industry, which provides technical solutions for companies to perform

and manage their own surveys, via their marketing and communication channels, through e-mail, mobile or other digital formats (Clark, 1999; Griffin & Hauser, 1993; Willot, 2018).

A long-term success in marketing depends not only on how successfully customer expectations can be met and exceeded, but also on how well the company manages those expectations (Vargo et al., 2007). The changing needs and expectations must be monitored using a customer feedback system. Therefore, the competitive pressure and the desire to understand marketing as a relationship construct led companies to turn their attention to measuring customer satisfaction through formal customer feedback systems that monitor performance and guide improvement efforts (Vargo et al., 2007). Managers therefore believe that this feedback serves as a leading indicator of customers' future company-related behaviours (e.g. retention, share-of-wallet allocation, word-of-mouth) and provides practical insights into how the company's resources should be allocated to improve customer satisfaction. These indicators also contribute to the data used in a company's marketing dashboard (a collection of interconnected key performance measures and drivers brought together in a single display). These marketing dashboards are increasingly being adopted by companies in recent years to help them achieve their long and short-term goals (Aksoy, L., 2013; Homburg et al., 2017; Srinivasan et al., 2016).

Another important development in the sphere of customer satisfaction measurement and management has been the growth in the last couple of decades of national and international customer satisfaction indexes (Andreassen, T. et al., 2001; Eklöf & Westlund, 2002; Fornell et al., 1996). In 1989, the first national customer satisfaction index was established in Sweden, namely the Swedish Customer Satisfaction Barometer (SCSB), covering more than 130 companies and 32 industry segments. Next, in 1994, the American Customer Satisfaction Index (ACSI) was devised covering more than 200 companies and 34 industries. In 1999, the successful experiences of the Swedish and US customer satisfaction indexes inspired the creation of the European Customer Satisfaction Index (ECSI). This has been implemented in 12 European countries, including Portugal and the United Kingdom (Andreassen, T. et al., 2001; Eklöf & Westlund, 2002; Gronholdt et al., 2000; Sarantidou, 2017). These indexes have contributed to an increased awareness of company performance in terms of customer satisfaction, allowing comparisons to be made within industries as well as across industries, even making international comparisons possible (Gronholdt et al., 2000).

2.2. Customer Satisfaction in the energy Retail Market

Since the liberalisation of European energy markets, customer satisfaction has also become a cornerstone of energy retail business of utilities. By liberalising the market, the European Union

has developed a legal framework for the EU's internal gas and electricity market (for the purpose of this work, referred to as internal energy market or simply energy markets) which aims to create market conditions that gives choice to consumers and businesses of the European Union. This has allowed suppliers to achieve efficiency gains, competitive prices, and higher standards of service, all of which contribute to securing supply as well as maintaining sustainability (Directive (EU) 2019/944, 2019; Directive 2009/73/EC, 2009). The internal EU energy market represents a unique process that has involved the transformation of these markets across all European member States (Jamasb & Pollitt, 2005).

The United Kingdom was the first European country to liberalise its electricity market (1989), followed by Norway (1991). Most other EU member states initiated the liberalisation process shortly after 1996, which was when two liberalisation directives for the gas and electricity markets were introduced, these were also known as the First Energy Package (Bye & Hope, 2005; Pepermans, 2019). These two directives focused on opening the market up to competition and the unbundling of the vertically integrated energy companies, which involves separating the generation, transmission and distribution functions. In 2003, the Second Energy Package was adopted, focusing on the liberalisation of the supply of energy as a specific segment of the energy business value chain, allowing consumers to choose their suppliers and any company to act as a supplier of electricity or gas. In 2009, the Third Energy Package was adopted, strengthening the liberalisation of the market considering the experience gather up to that moment, in particular in the protection of consumers to choose their suppliers and to have the right to a quality service. In 2019, the Fourth Energy Package was approved, which redesigned the EU electricity market and reinforced consumer rights, which put consumers first in the goal to transition to a decarbonised energy economy, allowing all Europeans to have access to secure, competitive and sustainable energy (Directive (EU) 2019/944, 2019).

In Portugal, the liberalisation process started at the same time as the European process. In 1995 a legislative package was approved that anticipated the European Directive 96/92/EC by promoting the liberalisation of the sector, in particular the liberalisation of electricity generation. In 2006, a bigger transformation occurred with the transposition of the Second Energy Package through Decreto-Lei n.º 29/2006, 15th February and Decreto-Lei n.º 172/2006, 23 August, which created a new legal framework for carrying out activities related to generating, transporting, distributing and supplying electricity. Fundamentally, the new legislation enabled the liberalisation of supply activity, at the same time as maintaining a regulated supply market (last resort operator) based on regulated tariffs for the residential customers. Customers had the right (not the duty) to choose a liberalised supplier but, after moving to the liberalised market, they could not return to the regulated market. This together with the existence of regulated tariffs that

were below market cost ended up limiting the development of the liberalised supply market for residential customers until 2012. Moreover, within the parameters of the International Financial Aid Package given to Portugal by the IMF, it was decided that Portugal had to terminate the regulated tariffs by 2015, which lead to the strengthening of the liberalised market, with more than one million customers moving from the regulated to the liberalised market in the period between 2012-2015. The deadline for the removal of regulated tariffs has been postponed and the latest Government deadline is 31 December 2025. Before the liberalisation, 100% of customers (around 6 million) were supplied by last resort supplier. All liberalised energy suppliers had to acquire their clients from the last resort supplier (or from other liberalised suppliers). By the end of 2019, the liberalised market represented about 84% of all market, with 5.24 million customers (residential – 5.18 million customers), and an annual switching rate of about 15% (ERSE, 2020).

EDP Comercial SA (designated in this study as Utility) is the leading electricity and natural gas supplier in the liberalised Portuguese market. The Utility is a subsidiary of EDP Energias de Portugal SA Group, which is one of the major European companies in the energy sector. EDP Energias de Portugal SA is the third largest producer of wind energy worldwide and is one of the largest energy operators of the Iberian Peninsula, as well as being the largest Portuguese industrial group. The Utility l started off in 2006 with zero clients. By the end of 2019, the Utility had 4.1 million electricity customers, about 78% of the market share, mainly in residential and SME segments. The Utility also has more than 500,000 customers of natural gas. In the services sector, the Utility offers a diverse portfolio of solutions for energy efficiency, insurance, microgeneration, electric mobility and technical assistance (EDP, 2020a).

An important aspect to underline is that, in the context of the Portuguese Market after liberalization, consumers have a real option to choose their energy supplier, meaning that they can not only change supplier, but they can do it also without restrictions, namely many times as wanted and with no early termination fees. In fact, in order to avoid any bundling of products and services that would limit that right, the legal framework forbids utilities to limit by any means the "right to change" supplier, namely through "forced retention clauses" that would require the consumer to pay a penalty in case of leaving the contract before a given amount of time (for example, 12 months). In addition, the termination of the energy contract does not have direct impact on additional products or services contracted by the consumer to the utility. Therefore, in the Portuguese market, there is an ample field of discretionary consumer behaviour that is not common in other energy markets, in particular regulated markets.

Between 2020 and 2021, the Utility's product portfolio for the business-to-consumer (B2C) segment included: i) electricity contract; ii) natural gas contract, iii) invoice insurance; iv) health insurance, v) appliances repair service; vi) solar panels; vii) e-mobility.

The electricity contract (**Annex 1**) covers different voltages appliable in the Portuguese market. The client is free to terminate the contract any time without any penalty.

The natural gas contract (**Annex 1**) is sold as an add-on to the electricity contract, meaning that the utility only sells natural gas if the client also has an electricity contract and not as a standalone contract. Also, the client can terminate contract any time without any penalty.

Invoice insurance (**Annex 1**) is a service that a client may decide to contract and offers protection again situations of unemployment and other situations allowing the payment of the energy bill (electricity and natural gas). The client is free to unsubscribe the service any time.

Health insurance (**Annex 1**) is a service that a client may decide to contract and corresponds to a private health care plan that is offered only to the Utility's clients, meaning that it cannot be purchased separately (it requires an energy contract). The client is free to unsubscribe the service any time.

Appliances repair service (**Annex 1**) is an insurance service that offers the client the possibility to have a repair service beyond the normal guarantee of appliances. The service is paid monthly. The client is free to unsubscribe from the service any time.

Solar panels (**Annex 1**) are sold by the company for residential use, installation included. The client has the option to buy it full price or to buy it in instalments up to 48 months.

The E-mobility solution (**Annex 1**) corresponds to the sale and installation of electric vehicles chargers for residential use. The client has the option to buy it full price or to buy it in instalments up to 48 months.

This brief overview highlights the challenge that Utility and other energy companies have faced after the liberalisation. Furthermore, prior to market liberalisation utilities had a monopoly within the market. As a result of liberalisation, customers have the right to choose their energy provider and are free to switch suppliers. Thus, in the retail part of the business, customers are the most meaningful asset of utilities (Nesbit, 2001). Similar to other businesses operating in a competitive market framework, utilities have discovered the importance of developing market strategies that take customer satisfaction into account as one of the main value drivers (Hartmann & Apaolaza Ibáñez, 2007; Novak, 2002; Walsh et al., 2006). For example, the acquisition cost of new clients can be up to five or six times higher than costs associated with the retention of satisfied customers (Ibánez et al., 2006). In addition, considering that energy

markets trade heavily in commodities, utilities face an increasing pressure on their margins. In response to this challenge, there is a trend amongst utilities to expand their core business to offer value-added services (Bigliani & Gallotti, 2013), for which they need to strengthen customer relationships and increase customer satisfaction (Nesbit, 2000; Senia, 2002). Therefore, utilities have a special interest in measuring and managing customer satisfaction (Ibánez et al., 2006; Nesbit, 2000). A commonality of businesses operating in competitive markets is the recognition that researching customer satisfaction is critical to improving service and adapting products and services to satisfy customer preferences (Brodie, Hollebeek, Juric et al., 2011). Thus, customer satisfaction surveys have an increasing importance for energy companies, not only for benchmarking (for example, among clients, competitors or industries), but also for obtaining information in order to improve customer service and, consequently, customer satisfaction. This explains why a big part of the utility market research budget is allocated to this kind of investigation (Antonevich, 2002).

The Utility notes customer satisfaction as being one of its strategic company goals and reports the progress through NPS internal tracking metrics. The Utility states that being "committed to accelerating investment in commercial innovation and ensuring a high level of customer experience satisfaction, both through its commercial offer and through excellence in the quality of its commercial relationship. Commitments that are part of the EDP Group's values and culture and are translated into quantitative strategic goals and targets" (EDP, 2020b, p. 111). In order to achieve the aforementioned goal, the Utility has developed special programs for the measurement and management of customers satisfaction. In addition, the Utility reports customers satisfaction awards and its position in the Portuguese National Customer Satisfaction Index- ECSI (ECSI Portugal, 2020; EDP, 2020a).

CHAPTER 3 - LITERATURE REVIEW

3.1. Introduction

This Chapter explores the literature relevant to achieving the research objectives. It starts with an overview of literature around customer satisfaction: definition, theories, consequences and measurement. Then, the literature review explores one of the main challenges of the measurement of customer satisfaction, this being the impact of satisfaction-related questions themselves on the behaviour of customers/clients. Given the theoretical implications, this part starts with Question-Behaviour Effect theories, as the umbrella label that includes the Mere-Measurement Effect Theories that are subsequently explored in more detail, highlighting the specific challenges of the measurement of customer satisfaction through firm sponsored surveys and relevant moderator effects. Based on these findings, the conceptual framework and the research hypothesis will be presented.

3.2. Customer Satisfaction
3.2.1. Relevance

Research has identified customer satisfaction as a critical goal of marketing and business in general (Aksoy, L., 2013; Ameer, 2014; Calder et al., 2016; Oliver, 2010; Wirtz, 1993; Wirtz & Bateson, 1999; Yi, 1990; Yüksel, A. & Yüksel, F., 2008), and is considered a key driver of value creation and financial performance and economic returns (Aaker, D. A. & Jacobson, 1994; Anderson, E. W. et al., 1997; Anderson, E. W. & Sullivan, 1993; Capon et al., 1990; Fornell et al., 2016b; Gupta et al., 2004a; Gupta & Zeithaml, V., 2006; Jones, O. T. & Sasser (Jr), 1995; Keiningham, T. L., Cooil, Aksoy, L. et al., 2007b; Larivière et al., 2016; Tse & Wilton, 1988; Woodruff, 1997). In particular, customer satisfaction is considered the ultimate source of competitive advantage (Anderson, E. W. & Sullivan, 1993; Mittal, B., 2016; Morgan, N. a. et al., 2005; Vargo et al., 2007). Several studies have supported the relationship between customer satisfaction and profitability through loyalty (Eskildsen et al., 2004; Gronholdt et al., 2000; Grönroos, 2011; Han Bae, 2012; McDougall & Levesque, 2000; Reichheld, 2003). On one hand, it has been suggested that highly satisfied customers allow companies to secure higher revenues (Anderson, E. W. et al., 1994; Rust et al., 2002; Rust et al., 1995), reduce the costs of transaction (Reicheld & Sasser, W. E. J., 1990), decrease price elasticities (Anderson, E. W. et al., 1997; Ruyter, De et al., 1999), reduce costs associated with defective goods and

services and handling complaints (Anderson, E. W. et al., 1997), minimize the likelihood customers will defect (Anderson, E. W. & Sullivan, 1993), and generate positive word-of-mouth by attracting new customers thus enhancing the company´s overall reputation (Fornell et al., 2010). On the other hand, commentators suggest dissatisfied customers are likely to generate negative impact in profitability, given their likelihood to stop purchasing the offerings or to defect, to complain and return products, to provide unfavourable word-of-mouth (Burton, 2010; Vargo et al., 2007; Vargo & Lusch, 2008).

The interest in research of the impact of customer satisfaction on business performance is parallel to its practical managerial relevance, considering the increasing use of customer satisfaction measurement as the underlying support for strategies and tactics to create corporate value as well as an indicator of success (Aksoy, L., 2013; Keiningham, B. T. et al., 2014; Keiningham, T. L., Cooil, Aksoy, L. et al., 2007a). In fact, it has been reported this has resulted in an increased spending on customer satisfaction research by companies in particular in the USA (Aksoy, L., 2013).

Despite strong support for the impact of customer satisfaction on business performance, some research underlines the complexity of that relationship, pointing out that the correlation between companies' customer-satisfaction levels for a given year and the corresponding stock performance of these companies for that same year, can be as low as one percent or even negative (Bell, D. R. et al., 2014; Chemi, 2013; Dukes & Zhu, 2019; Ittner et al., 2009; Jacobson & Mizik, 2009; Keiningham, B. T. et al., 2014; O'Sullivan et al., 2009). Some research questions the conclusions on the impact of customer satisfaction given the limitations or even feasibility of its measurement (Aksoy, L., 2013). Other authors argue that customer satisfaction needs to be balanced with other performance measures, such as market share and productivity (Anderson, E. W. et al., 1994; Hauser et al., 1994; Kaplan, 2012; Kaplan & Norton, 1996; Rust & Zahorik, 1993). In addition, in recent times, some authors have suggested other alternative antecedents to link customers' intentions and behaviour to business outcomes, like service quality, including SERVQUAL and SERVPERF (Carrillat et al., 2007; Cronin & Taylor, S. A., 1994; Grönroos, 1984; Grönroos, 2011; Milner & Furnham, 2017; Parasuraman et al., 1994; Rust & Oliver, 1994), NPS (F.Reichheld, 2003); customer effort (Cardozo, 1965; Harmeling et al., 2017); customer experience (Clark, 1999; Palmer, 2010; Sheth, J. N. . et al., 1999) and customer engagement (Brodie, Hollebeek, Jurić et al., 2011; Kumar, 2017; Kumar et al., 2010; Pansari & Kumar, 2017; Verhoef et al., 2010; Vivek et al., 2014).

In either case, even some of the authors most critical about the impact of customer satisfaction on business performance agree that customer satisfaction has a great importance from managerial and theoretical perspectives. Also, that the discussion about customer satisfaction

measurement should be framed considering the definition of customer satisfaction, its theoretical support and its consequences.

3.2.2. Definition and Theories

Despite the extensive literature on customer satisfaction, it is possible to observe that there is not a single and consensual definition of the concept. In fact, in an almost paradoxical way, although it is possible to say that there is an broad consensus about the effects of customer satisfaction, that consensus disappears when it comes to the definition of the concept (Giese & Cote, J., 2000; Oliver, 2010; Yi, 1990). The discussion involves the designation itself, since it is possible to observe the use of different terms to identify the same phenomenon with no specific justification, even from the same researcher: "customer satisfaction" (Anderson, E. W. et al., 1997; Andreassen, T. et al., 2001; Fornell et al., 2016b; Halstead et al., 1994; Keiningham, T. L., Cooil, Aksoy, L. et al., 2007b; Morgan, N. a. et al., 2005); "consumer satisfaction" (Giese & Cote, J., 2000; Wirtz & Bateson, 1999; Yi, 1990) or just "satisfaction" (Keiningham, T. L. et al., 2015; Larivière et al., 2016; Oliver, 2010). In this research, the term "customer satisfaction" will be used in order to distinguish this from other areas where satisfaction is studied (e.g. human resources) and to recognise that all participants have a transactional, not just experiential, relationship with the Utility (Holbrook, 1987; Yi, 1990).

The definition of customer satisfaction is also perceived differently depending on scope, in particular: transaction-specific satisfaction and cumulative satisfaction (Andreassen, T. et al., 2001). In fact, the genesis of the study of customer satisfaction was developed around transaction-specific evaluations, that is: with product acquisition (Churchill, G. A. & Surprenant, 1982; Westbrook, 1987); with product performance (Anderson, E. W. & Sullivan, 1993; Cardozo, 1965; Oliver, 2010; Yüksel, A. & Yüksel, F., 2008); with a consumption experience (Oliver, 1980; Ruyter, De et al., 1999); with purchase decision experience (Kourilsky & Murray, 1981); with the salesperson (Swan & Oliver, 1991); with a store (Oliver, 1981); with an attribute (Bettman, 1974; Yi, 1990); with post-purchase experience (Mugge et al., 2010). However, more recently the focus of the research has been directed to cumulative satisfaction, defining customer satisfaction as a customer's overall experience to date with a product or service provider (Andreassen, T. et al., 2001; Oliver, 2010; Yüksel, A. & Yüksel, F., 2008). The main reason for this focus is the evidence that cumulative satisfaction is a better predictor of behaviours and performance, since customers base their decisions in their experience up to that moment and not based on a particular transaction or episode (Andreassen, T. et al., 2001).

It is, though, outside the scope of this study to resolve the discussion about the definition of customer satisfaction and formulate or take position on this issue. In any case, this research supports the dominant literature that considers customer satisfaction as an emotional response to the fulfilment of needs, expectations, wishes or desires, supporting the definition presented by Oliver (2010, p. 8): "Satisfaction is the consumer's fulfilment response. It is a judgment that a product/service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under- or over fulfilment". Regardless of the specific definition adopted, it is important to point out that, considering the different approaches mentioned above, it is possible to highlight common elements present in those different definitions suggested by different authors (Giese & Cote, J., 2000; Keiningham, T. L. et al., 2015; Oliver, 2010; Yüksel, A. & Yüksel, F., 2008) and these can be summarised as follows: it is a response (emotional, cognitive or both); it is directed to a specific consumption experience (expectations, product, service, performance, consumption time and place) and it occurs at a particular time (after choice, after consumption or service, based on specific and/or accumulated experience).

The plurality of approaches to the definition of customer satisfaction has its parallel in the divergence about the explanation of its occurrence. In fact, although there is a consensus that 'customer' is a relative concept, implying a judgement in relation to a standard, different theories have been presented to explain customer satisfaction. The literature in this area (Keiningham, T. L. et al., 2015; Parker & Mathews, 2001; Vargo et al., 2007; Wirtz, 1993; Yi, 1990; Yüksel, A. & Yüksel, F., 2008) suggests that a range of theories have been deployed to explain customer satisfaction, including: Expectancy-Disconfirmation Paradigm (EDP), the Attribution Theory, the Equity Theory, the Comparison Level Theory, the Evaluation Congruity Theory, the Norm-based Theory, the Value-Precept Theory, the Performance-Importance Model, the Dissonance Theory, the Contrast Theory and the Assimilation-Contrast Theory. The key message to highlight here is that there is not a consensual view about the theoretical construct, with several studies pointing out the need for further studies and confront of the theories. Most of the studies to date have focused on testing one theory without confronting other theories. That explains also why there are theories that point in the same direction but with different explanations. However, it is also possible to conclude that there is an ample consensus about the existence of customer satisfaction and the possibility of measuring it, which is the focus of this research. In any case, although it is not goal of this research to explore the theoretical explanation of customer satisfaction, it is possible to highlight that despite EDP being the most frequently addressed model in scholarly research, for practical reasons suppliers tend to use a 'perceptions only' measure of customer sentiment and this is true of the subject

Utility on which this study is focused (Churchill, G. A. & Surprenant, 1982; Giese & Cote, J., 2000; Oliver, 2010; Yi, 1990; Yüksel, A. & Yüksel, F., 2008).

3.2.3. Consequences of satisfaction/dissatisfaction

Besides the discussion on the definition and explanation of customer satisfaction, it is important to review the studies that have focused on the consequences of customer satisfaction or dissatisfaction, both in the perspective of customer and in the perspective of business.

From the customer perspective, it is possible to organize the consequences of satisfaction and dissatisfaction according to different types of responses by customers: complaints; purchase and loyalty behaviour, word-of-mouth. Complaints deserve much of the attention of research in relation to the consequences of dissatisfaction. Some authors have even established a direct proportional relationship between complaints and the intensity of dissatisfaction (Bearden & Mason, 1984), although some other studies have provided evidence that there are other factors beyond dissatisfaction that influence complaints, as consumer characteristics, perceptions of the attribution of dissatisfaction, expectancy of outcomes, costs involved, product or service type (Day, 1984; Singh, J., 1988; Yi, 1990). Related to complaints, some authors also studied the consequences of companies' responses to customer complaints and they found that it has important effects on customer satisfaction, repurchase behaviour and retention, in particular concerning time of response and correction measure, even if with small monetary expression (Fornell & Wernerfelt, 1987; Yi, 1990). Purchase and loyalty behaviours are important and impactful consequences of customer satisfaction or dissatisfaction. In principle, customers who are satisfied are more likely to repurchase the same product or service than dissatisfied customers and vice-versa (Dick & Basu, 1994; Francken, 1983; Fullerton, 2003; Mittal, V. & Kamakura, 2001; Oliver, 2010; Yi, 1990). In the same direction, satisfied customers are more loyal to the brand or provider of the service than dissatisfied customers and, on contrary, dissatisfied customers are generally more likely to switch to a different provider than satisfied customers (Gustafsson et al., 2005; Heskett et al., 2008; Jones, T. O. & Sasser, W. E., 1995; Mittal, B. & Lassar, 1998; Oliver, 2010; Swan & Oliver, 1991; Vargo et al., 2007; Yüksel, A. & Yüksel, F., 2008). Finally, there is an important consequence of satisfaction or dissatisfaction on positive or negative word-of-mouth (Folkes & Patrick, 2003; Luo & Homburg, 2007; Oliver, 2010; Richins, 1983). Word-of-mouth is a powerful consequence since it is a more effective communication mean than mass communication (Kundu & Sundara Rajan, 2017; Martensen & Grønholdt, 2016), it is perceived more credible than other communications from companies and, in case of dissatisfaction, can have a greater reach, since it can influence not only the behaviour

of the direct customer but also other potential customers (Bjørnland et al., 2015; Schibrowsky et al., 2007; Yi, 1990).

From the company perspective, all the above-mentioned responses from satisfied or dissatisfied customers influence the business outcomes. Considering the managerial practice, it is possible to observe that among managers and companies there is widespread acceptance that customer satisfaction is correlated with financial performance of companies (Keiningham, B. T. et al., 2014). However, some research has pointed out that some of those relationships are weak and the predictive power of customer satisfaction is not linear and should not being considered as an absolute or stand-alone variable (Gupta & Zeithaml, V., 2006; Keiningham, B. T. et al., 2014). Some authors have even questioned the existence of a meaningful relationship between customer satisfaction and market performance (Aksoy, L. et al., 2008; Ittner et al., 2009; Jacobson & Mizik, 2009; O'Sullivan et al., 2009; Williams, R. & Visser, R., 2002). Accepting some relevant critiques made by that research, it is possible to observe that those studies address only analyses of the relationship between customer satisfaction and performance, in particular using narrow time frames that do not seem adequate to capture the complete relationship (Keiningham, B. T. et al., 2014). In fact, research has consistently found that there is a positive and statistically significant relationship between customer satisfaction and more granular perspectives on business outcome - indicated by, for example, stock market performance, revenues, profitability, customer lifetime value, market share, customer retention/switching, cross-selling, share of wallet, referrals, firm's advertising and promotion efficiency and its human capital performance (Aksoy, L. et al., 2013; Anderson, E. W. et al., 1994; Anderson, E. W. et al., 1997; Cooil et al., 2007; Fornell, 1992; Fornell et al., 2006; Fornell et al., 2009; Fornell et al., 2016a; Gronholdt et al., 2000; Gupta et al., 2004b; Heskett et al., 2008; Keiningham, B. T. et al., 2014; Keiningham, T. L., Cooil, Andreassen, T. W. et al., 2007; Luo & Homburg, 2007; Mittal, B., 2016; Mittal, V. et al., 2005; Mittal, V. & Kamakura, 2001; Reicheld, 1996; 2003; Sun & Kim, 2013; Zeithaml, V. A. et al., 2001). A different issue is the power of customer satisfaction as a stand-alone metric to explain the performance and business metrics. In this regards, recent research has pointed out to alternatives based on relatives measures, such as share of wallet or market share (Keiningham, B. T. et al., 2014; Rust et al., 2000). Despite some evidence of the superiority of customer satisfaction relative metrics in linking to customer behaviour and performance (Bolton et al., 2000; Bowman & Narayandas, 2004; Hofmeyr et al., 2008; Keiningham, T. L. et al., 2011), it is possible to observe that both in managerial practice and research it is prevalent the use of stand-alone customer satisfaction metrics (Keiningham, T. L. et al., 2015).

In conclusion, it is possible to conclude that, despite the discussion and lack of consensus about the definition and explanation of customer satisfaction, there is an ample consensus about its existence and the importance of its consequences both from the customer perspective and business perspective. In fact, for the scope of this research it is possible to highlight that there is strong support for the consequences of customer satisfaction in terms behavioural intentions (customer commitment, repurchase intentions, price perceptions and willingness to pay) and customer behaviours (customer loyalty, repurchase, complains, word-of-mouth and customer defection or churn). This consequences are translated to business outcomes in terms of financial and non-financial performance (Luo & Homburg, 2007). In this context, it is important to discuss the challenges of customer satisfaction measurement given the scope of this research to investigate the impact of firm-sponsored customer satisfaction surveys on customers behaviour and business outcomes.

3.2.4. Measurement

Considering the relevance of customer satisfaction in terms of behaviour and business outcomes described in the previous sections, it is important to address the measurement of customer satisfaction, in particular the metrics used, the methods of measurement and issues arising from direct measurement of customer satisfaction. In this last segment, it will be introduced the issue regarding the impact of customer satisfaction surveys on customers' behaviour.

Metrics

Research has studied which are the most adequate metrics to measure customer satisfaction, developing customer feedback metrics and assessing how those metrics can be predictive indicators of performance (Ambler, 2003; Ambler et al., 2004; Fornell et al., 1996; Griffin & Hauser, 1993; Gupta et al., 2004b; Haan, De et al., 2015; Morgan, N. A. & Rego, 2006; Rust et al., 2004; Srinivasan et al., 2016). Traditionally, customer satisfaction has been measured according to three satisfaction measures: a single-item measure (overall satisfaction); a multi-item measure (aggregate satisfaction); and a weighted multi-item measure that weights satisfaction responses by importance (weighted satisfaction) (Calder et al., 2016; Gardner et al., 1998). More recently, new metrics have been identified, with claims of superiority in capturing customer satisfaction impact on business outcomes: Net Promotor Score (NPS) (F.Reichheld, 2003; 1996); Customer Effort Score (CES) (Dixon et al., 2010); Top-2-box customer satisfaction (Haan, De et al., 2015). Despite those claims, other research has questioned the results presented in terms of the superiority of those metrics (Doorn, van et al., 2013;

Keiningham, T. L., Cooil, Aksoy, L. et al., 2007b; Larivière et al., 2016; Morgan, N. A. & Rego, 2006). However, it is important to underline that the predictive power of those metrics is industry dependent, and it depends also on its use: customers' behaviour or competitive position (Haan, De et al., 2015; Morgan, N. A. & Rego, 2006). In addition, the predictive power of those metrics may also differ depending on the economic, political, and cultural factors of a country (Doorn, van et al., 2013; Giese & Cote, J., 2000; Haan, De et al., 2015; Ou, Y.-C. et al., 2013; Ou, Y. C. et al., 2016; Yeung et al., 2013).

Another topic connect with the choice of metric for the measurement of customer satisfaction is the scale used for that purpose. The most common is the use of single-item scales, with four, seven or ten points, in particular due to the advantage of simplicity of the collection and analysis process. However, single-item scales are considered insufficient to fully capture the phenomenon in its different dimensions, advising the adoption of multi-item scales for customer satisfaction, in order to reinforce reliability. With a single item, variance due to a random error or a method factor cannot be assessed, and it is hard to determine the reliability of the measures. The only estimate of reliability is test-retest reliability, which can be confounded with a true change in customer satisfaction (rather than random errors) and/or memory bias. Although the solid support for multi-item scales, the managerial practice is dominated by the use of single-item scales (Yi, 1990).

Methods of Measurement

The methods of measuring customer satisfaction can be grouped in two different types: direct and indirect methods (Hayes, B. E., 2008; Morgan, N. A. & Rego, 2006; Peterson, R. A. & Wilson, W. R., 1992). Direct survey methods are the most widely used means of measuring satisfaction and they are based on self-reported evaluations from the customers. The survey contains the measures of the construct and it is administered to a sample of consumers. Afterwards, statistical techniques are used to test the relationship predicted by the theory. Their primary advantage is the simplicity and directness of the process, with straightforward rules between customer satisfaction and measures and consequences (Peterson, R. A. & Wilson, W. R., 1992). The major disadvantage of survey methods is that responses can be influenced by the act of measurement itself, as discussed in detail further below. Other problems such as selection bias, interviewer bias, and nonresponse bias represent also threats to the validity of the survey data (Yi, 1990). Indirect measurement methods include collecting data on consumer complaints, loyalty, repeat purchases, referrals. These indirect methods are important since they are consequences of satisfaction, important to both firms and consumers, and relatively unobtrusive, resulting in reduced reactivity. However, those methods also involve difficulties, because these methods do not allow to separate customer satisfaction from other factors, such as promotional

activities, brand availability and brand loyalty (Roszkowski & Ricci, 2004; Ryals, 2008). In addition, these measures may sample from the tails of the distribution and fail to capture the typical consumers satisfaction - only customers with extreme experiences are most likely to voice their opinions with complaints (Yi, 1990) Since the two types of methods have different strengths, the measures should be chosen by considering the intended purpose of the study and the degree of potential reactivity among respondents (Dickey, 1998; Giese & Cote, J., 2000; Meyer & Schwager, 2007).

Another important aspect of the methods of measurement of customer satisfaction is to distinguish between the surveys according to the entity that performs them. On one hand, there are surveys in which the respondent knows that the provider of the product or service is the sponsor of the survey (firm-sponsored surveys). On other hand, there are surveys that are performed without that reference because they are performed by a market research firm or independent organization, as it happens in benchmarking studies or national index customer satisfaction surveys (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Fornell et al., 1996; Griffin & Hauser, 1993; Neely, 2004). This research is focused on the impact of firm-sponsored customer satisfaction surveys on customers' behaviour and business outcomes.

Issues in Direct Measurement of Customer Satisfaction

The conceptual issues regarding customer satisfaction measurement can be routed to the issues identified in previous sections on the lack of consensus around customer satisfaction definition and theoretical explanation. The dominant theory of Expectancy-Disconfirmation Perspective (EDP) has been challenged with several different alternative explanations. In fact, it is necessary to highlight some important issues emerging from EDP theoretical construct, which raise questions about its validity and reliability in assessing customer satisfaction. Besides the limitations identified above, in terms of measurement, it is important highlight that EDP is based on a subjective evaluation of the customer about his/her satisfaction. The process involves a comparison between product or service performance and a standard of comparison or multiple standards. The selection of appropriate comparative standards, however, continues to represent a dilemma for both researchers and managers, since there is no consensus about the adequate standard to use and even if it is possible to use one (Yuksel, A. & Yuksel, F., 2001). The use of appropriate comparative standard is critical, as different comparative standards may yield different levels with which the performance is compared and may produce different results in terms of measurement of customer satisfaction. It adds that measuring customer satisfaction is not simple because personal attitudes towards quality and performance vary between

individuals, what one may consider to be superior quality and performance may be seen as average by another (Milner & Furnham, 2017).

Another conceptual limitation relates to the lack of completeness of surveys in incorporating all of the relevant and salient attributes to customers which can influence customer satisfaction (Brohman et al., 2003; Lin, B. & Jones, C. A., 1997; Yuksel, A. & Yuksel, F., 2001; Zahay et al., 2004). At the same time, using one pre-set survey for all respondents without regard for individual environments, such as past experience, prejudices, cultural differences, social beliefs and socio/economic criteria, negates the idea of personalized expectations, in which the customer will personally determine the measurement of customer satisfaction (Cote, J. A. et al., 1989; Yuksel, A. & Yuksel, F., 2001). This last aspect relates yet with another discussion around the use of standardized measures versus customized measures. EDP points out to the use of standardized measures, which increase the reliability, objectivity and comparability of the measurement (Lin, B. & Jones, C. A., 1997). In addition, this also allows a reduction of costs of performing the measurement and makes easier the communication and reporting of results, in particular in the managerial context and among companies (Kanji & Dahlgaard, 1992). But as any standard, the use of this customer satisfaction metrics represents a use of a minimal common denominator, not adapted to the specific context of business or company. That is why some authors advocate that it is not possible to use standard customer satisfaction metrics, but it is necessary to develop customized customer satisfaction metrics that can incorporate the specific aspects of the business and to be more valid as a measure (Mccoll-Kennedy & Schneider, 2000).

The second group of issues is closely related to the conceptual issues described above and it refers to several correlates of satisfaction ratings observed in a wide variety of situations and that can influence the measurement of customer satisfaction in important ways (Danaher & Haddrell, 1996; Peterson, R. A. & Wilson, W. R., 1992; Yaya et al., 2014). Although not subject to extensive study, there are indications that several variables influence customer satisfaction ratings in addition to the stimulus object (product or service). Peterson & Wilson (1992) present some examples of these situations. They have found that general life satisfaction of the person can influence, meaning that a higher life satisfaction will influence a higher satisfaction with the product or satisfaction. In addition, they have pointed out the correlation resulting from the number of consumption options that the customer has, with the consequence that satisfaction seems higher when there is more choice than when that choice is not available. Some other studies have also explored some potential correlations between customers satisfaction and different demographic variables (age, income, education, etc), but the results have not been conclusive (Yaya et al., 2014; Yol et al., 2006). In any case, all these examples

show customer satisfaction is a complex and elusive phenomenon and its measurement is potentially exposed to a great number of correlations that can render the interpretation of the results close to meaningless (Chicu et al., 2019; Peterson, R. A. & Wilson, W. R., 1992).

The third group of issues emerge from methodological issues affecting the use of customer satisfaction surveys. These issues derive from the common observation that the measurement of customer satisfaction through surveys presents a distribution that is negatively skewed, with low variability in the responses and a baseline where satisfaction is high (Coelho & Henseler, 2012; Jones, M. A. et al., 2014; Yi, 1990). However, before addressing those issues, it is possible to observe that some authors (Mccoll-Kennedy & Schneider, 2000; Milner & Furnham, 2017) consider that observation as applying generally, giving different possible explanations: the distribution reflects general satisfaction with products and services; antecedents may influence the shape and level of the observed distributions; satisfaction measurement delivers a distribution that is different from the (normal) distribution of other common psychological constructs. Not excluding those explanations, it seems possible to trace the level and shape of the distribution to methodological issues (Milner & Furnham, 2017; Peterson, R. A. & Wilson, W. R., 1992). The Ceiling Effect means that the scales used to measure customer satisfaction do not have a sufficient number of categories to permit survey participants to make fine discriminations, especially at the positive (highest) end (Finn, 2012; Tam, 2004). The Response Rate Bias has received strong support, pointing out that satisfaction measurements are inflated because customers that are more satisfied are also more likely to respond to a satisfaction survey than are customers who are less satisfied (Christakopoulou et al., 2020; Sitzia & Wood, N., 1998). Another issue not so much related to the shape of the distribution but the satisfaction level refers to Data Collection Mode Bias that considers that the survey mode (personal, telephone, e-mail, internet, mobile, etc) itself can impact the satisfaction measurement, presenting different results. Research supports that the survey mode can affect the results and it needs to be considered when interpreting results (Johnson, M. D. & Gustaffson, 2007; Yi, 1990). On average, personal or telephone surveys appear to increase satisfaction ratings by approximately 10-12 percent relative to survey self-administration mode (Peterson, R. A. & Wilson, W. R., 1992). A similar issue refers to Question Form Bias that consider that the manner in which questions are presented can influence the level and distribution of responses (Soderlund, 1998). This bias is supported in the investigation that suggests that when a decision is framed in positive terms, it will be perceived more positively than when the same decision is framed in negative terms (Tversky & Kahneman, 1973; 1981), meaning that the results will be different if it is used a positive framework ("How satisfied are you with") or it is used a negative framework ("How dissatisfied are you with"). In addition, some authors also point out to the Question Context Bias where the order of the questions in the survey can affect the results. In

particular, some research refers that asking a general satisfaction question prior to a specific satisfaction question slightly increases the tendency for a "very satisfied" response in the second question (Bone et al., 2017). The Measurement Timing Bias supports that there is a relationship between the level of the customer satisfaction and the timing of the performance of the survey, with the general rule being that customer satisfaction is higher as closer the survey is to the a relevant transaction. One study found that the highest satisfaction level occurs immediately subsequent to purchase and then decreased 20 percent over a period of 60 days (Peterson, R. A. & Wilson, W. R., 1992). The Response Styles Bias has been identified in several areas of social studies based on surveys and some researchers have also support its occurrence in the measurement of customer satisfaction, considering the influence of social desirability and compliance effects (Gilleard & Reed, 1998). Finally, the Mood Bias implies that the level of customer satisfaction can be influenced by the mood of the respondent at the time the customer is answering the survey, adjusting the level accordingly (Peterson, R. A. & Wilson, W. R., 1992).

The fourth major issue concerning the direct methods of customer satisfaction measurement is reactivity, according to which responses might be influenced by the act of measurement itself. To the extent that consumers consider who will see their data and how their responses will affect the future practices or products of the firms, consumer responses are likely to be biased (Ograjenšek & Gal, I., 2012). This means that customer can instrumentalize their participation in the survey to convey a message to of the organisation initiating the measurement of their satisfaction. Some authors even suggest the hypothesis that customer satisfaction measurement is subject to the Hawthorne effect, with the consequences that customer satisfaction levels will increase just because it is measured (Peterson, R. A. & Wilson, W. R., 1992). Although some researchers have addressed this issue, there are no studies to examine the reactivity effect or Hawthorne effect specifically on consumer satisfaction measures (Johnson, M. D. & Gustaffson, 2007; Yi, 1990). Although this research will not investigate the occurrence of the reactivity effect or Hawthorne effect in customer satisfaction levels, it shares some common ground since the research will explore the impact of customer-focused activity on customer behaviours after both reception only (non-respondents) and those who both receive and answer the survey (respondents). Thus, it will not focus primarily on the effect of the survey on absolute levels of satisfaction, but on the effects resulting from the exposure to and participation in firm-sponsored customer satisfaction survey activity in the theoretical context of the Question-Behaviour Effect (QBE) and the Mere-Measurement Effect (MME) discussed in the next sections.

Conclusion

The literature review performed in this section has showed that customer satisfaction has been one of the most important theoretical constructs in the field of marketing. Google Scholar reports more than 1.300.000 articles in customer satisfaction (Google, 2020). The theoretical interest is also followed in practice. For example, a study reports that 82 percent of high performance companies in the US mention customer satisfaction in their mission statement against 61 percent of low performance companies (Karami, 2016). However, despite the extensive literature on customer satisfaction, it is possible to observe that, besides the general consensus about its existence, there are few topics where there is consensus, including the customer satisfaction definition, theories, consequences. In particular, this literature review has allowed to identify the challenges around the measurement. Customer satisfaction is a complex phenomenon and the measurement is influenced by an extensive set of issues, confounded with other variables, subject to considerable conceptual and methodological different options, and reflecting several context-dependent factors. Thus, customer satisfaction should not be viewed as an absolute measure (Grigoroudis & Siskos, 2009). Some authors go even further and conclude that it is not clear what customer satisfaction ratings are measuring, since customer satisfaction measurement is influenced by both intrapersonal characteristics and methodological issues that it may never be possible to disentangle them (Peterson, R. A. & Wilson, W. R., 1992). In any case, regardless of the scientific purity and accuracy of the interpretation of the customer satisfaction measurement, from this literature review is also possible to anticipate that the procedure of measurement of customer satisfaction is not a neutral act and it is an intervention that affects potentially subsequent customers' behaviour and company performance (Mccoll-Kennedy & Schneider, 2000). In the next sections, this research investigates the practical and theoretical consequences of this phenomenon in the context of QBE.

3.3. Question Behaviour Effect
3.3.1. Relevance

In physics, the term observer effect refers to changes that the act of observation will produce on a phenomenon that is being observed (Bridgman, 1927). This idea has also been studied by other fields of knowledge, namely in by the research labelled as Question-Behaviour Effect (QBE), which is also used to incorporate the research around Mere-Measurement Effect (MME) and Self-Prophecy Effect (SPE) (Dholakia, U. M., 2010; Rodrigues et al., 2014; Sherman, 1980; Spangenberg, E. R. & Sprott, 2006; Spangenberg, E. R. et al., 2003; Sprott, Spangenberg, E. R., Block et al., 2006; Wilding et al., 2016; Wood, C. et al., 2016). In its broad sense, the QBE tries

to explain the influence of questions (related to, for example, intentions, predictions and attitudes) on subsequent behaviour of the respondent. In fact, several studies and meta-analyses have found that answering questions influences respondents in a variety of ways and through different psychological processes (Bergmann & Barth, 2018; Dholakia, U. M., 2010; Sprott, Spangenberg, E. R., Knuff et al., 2006; Wilding et al., 2016).

Sherman's study on the self-erasing nature of errors of prediction (Sherman, 1980) is considered to be the genesis of the different streams of QBE research (Dholakia, U. M., 2010). In that study, Sherman conducted a series of experiments on the respondents' ability to predict their actions on social desirable actions (in the case, volunteer work) and he concluded that the results demonstrated the influence of pre-behavioural cognitive work on engaging in the behaviour itself (Sherman, 1980). In that study, it was observed that participants who had given responses to the behavioural question (overestimating their willingness to perform the volunteer work) would later adapt their behaviour in accordance with their response. In summary, in a laboratory experiment, people were invited to volunteer 3 hours of their time for the American Cancer Society. However, before that, the persons in a test group were asked about their willingness to volunteer and 48% reported that they would volunteer. A parallel control group was not asked in advance about their willingness and it was observed that only 4% of the persons of the control group agreed to volunteer when asked. Interestingly, regarding the test group, in the end, 31% of the participants actually agreed to volunteer. Thus, Sherman (1980) concluded that the act of asking participants to predict future behaviour not only led to a biased response but also to a substantial change in behaviour (control group 4% vs. test group 31%). Since then, a lot of research has been conducted around the QBE for different types of behaviours, namely: helping a charity (Liu & Aaker, J., 2008); voting (Gerber & Green, D. P., 2001; Gerber & Green, D. P., 2005; Greenwald et al., 1988; Smith, J. K. et al., 2003); cheating in college (Spangenberg, E. & Obermiller, 1996); risky behaviours among adolescents (Fitzsimons & Moore, 2008; Sherman, 2008); exercise and health-related behaviours (Sandberg & Conner, 2009; Spangenberg, E. R., 1997); recycling (Sprott et al., 1999); consumer intentions (Chandon, P. et al., 2005; Fitzsimons & Williams, P., 2000; Janiszewski & Chandon, E., 2007; Kerckhove, Van et al., 2012; McKnight, 2015; Morwitz, V. G. & Fitzsimons, 2004; Morwitz, V. G. et al., 1993; Perkins, A. & Forehand, 2010; Rodrigues et al., 2014) and customer satisfaction (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. & Morwitz, V., 2002; Flynn et al., 2017)

Within the QBE phenomenon, two different research streams were formed. On the one hand, the SPE stream (e.g. Greenwald, Spangenberg, Sprott) focusses on observing the impact of self-predictions to influence socially normative behaviours (i.e. acting or not acting will have socially desirable or undesirable elements). On the other hand, the MME (e.g. Dholakia,

Morwitz, Fitzsimons, Williams) stream focusses on observing the impact of questions on neutral normative behaviours (i.e., acting or not acting does not have socially desirable or undesirable elements, focusing in consumer behaviours). With time, authors from both streams recognized that there are methodological similarities despite the two distinct approaches. From there on, some authors defend the integration of the two streams under the QBE label (Spangenberg, E. R. et al., 2016; Sprott, Spangenberg, E. R., Block et al., 2006). In a different direction, Dholakia argues that there are fundamental differences between the two streams and he recommends researchers to specify which one they are exploring instead of using the generic label QBE (Dholakia, U. M., 2010).

In fact, based on current knowledge, there are important differences between the two research streams (and even within each one) that need to be taken in consideration. Firstly, there is a fundamental difference between behaviours: SPE focusses on socially normative behaviours while MME focusses on neutral normative behaviours. Secondly, in underlying processes, many of the boundary conditions and the practical implications are unique. Thirdly, the moderators of the effects are also different (Dholakia, U. M., 2010). All these arguments help to support the differences that can be found in terms of the theoretical support between and even within each research stream. In fact, the theoretical explanation for the QBE (in the broad sense) has been under intense discussion (Dholakia, U. M., 2010; Wilding et al., 2016; Wood, C. et al., 2016). Given its importance, the different QBE theoretical explanations are next summarised, including recent meta-analyses, and this study will conclude on the justification for separating the SPE and MME research streams.

3.3.2. Theoretical explanation for the QBE (in the broad sense)

The different theoretical explanations for QBE can be grouped into five different categories: attitudes, consistency, fluency, motivations and inferences (Dholakia, U. M., 2010; Spangenberg, E. R. et al., 2016; Wilding et al., 2016; Wood, C. et al., 2016).

Attitude-based explanations

Attitude-based explanations support the QBE in the fact that questioning activates attitudes which in turn influence future performance of the behaviour that the questions focuses on Within this broad explanation is possible to identify different approaches, namely the attitude accessibility that has become one of the main theories both for SPE and MME. Based on Self-Generated Validity Theory (Feldman & Lynch, 1988), attitude accessibility considers that questions increase an individual's self-awareness of his/her attitudes and that this heightened

attitude accessibility will influence the performance of behaviours typically associated with those attitudes. After being asked, the respondent performs cognitive work that increase the accessibility of the attitudes that will influence the behaviour during the time of accessibility. Thus, the effects of the increased attitude accessibility are considered to result from an automatic rather than an effortful process and the duration of those effects are considered to be short-term. (Chapman, 2001; Morwitz, V. G. et al., 1993; Spangenberg, E. R. et al., 2016).

Consistency-based explanation

The consistency-based theories share as a common element some form of consistency between the question about a behaviour and the performance of the behaviour after the survey. In these theories, the differences observed between control (no survey) and test (survey) groups result from a mechanism of eliminating cognitive dissonance, where the respondent will tend to behave in line with the answer given before in order to avoid the internal conflict of breaking the psychological commitment assumed through the answer Although the theory is closely related to social norms, some authors have extended it to encompass personal normative behaviours, such as achieving personal goals (Chandon, P. et al., 2004; Spangenberg, E. R. et al., 2016). However, some research has found that the effect can be limited or even overridden when external forces occur. Sprott et al. (2006) observed that the effect may be limited to behaviours that have a physiological component (e.g., nicotine, heroine dependence, etc.) and that inhibits the effect of social norms (e.g., smoking, drug addiction, etc.).This is because the persons can deflect the effect by considering that they are not responsible for that behaviour since it results from an external and uncontrollable force. Also, factors related with the power of the social norms (e.g. perceived nature of obligations, peer pressure, etc.) can intensify or diminish the SPE effect resulting from the cognitive dissonance.

Besides the cognitive dissonance explanation, two other research streams of the consistency-based explanation are important to note. One stream proposes to explain the QBE based on commitment and consistency mechanisms as influencers of behaviour in social settings (Cialdini, R. B. & Goldstein, 2004; Cialdini, R. & Trost, 1998). In this case, the response to the questions creates pressure in terms of behavioural performance due to commitment and consistency of the person providing the answer. Another stream of consistency-based explanation points to self-awareness mechanism as a source of the QBE, stating that when the person answers a question, the person becomes aware of the desired behaviour and the existing discrepancy between that behaviour and their actual behaviour, thus creating an awareness for the need to change behaviour and close the gap between the two (Spangenberg, E. R. & Greenwald, 1999).

Fluency-based explanation

Fluency-based explanations support the QBE on the premise that questioning makes the respondent more fluent on the questioned behaviour and thus more prone to adopt that behaviour (Chapman, 2001; Fitzsimons & Shiv, 2001; Fitzsimons & Williams, P., 2000; Janiszewski & Chandon, E., 2007; Levav & Fitzsimons, 2006). Thus, the fluency-based explanation considers that the QBE effect results not only from the cognitive process of answering a question, but also from the anticipation of the performance of the behaviour. Janiszewski & Chandon (2007) tested and validated this theory in laboratory studies, presenting evidence that intention questioning contributed to the MME beyond attitude and information accessibility. However, those studies were focussed on measuring the impact on planned behaviours and not on actual behaviours. Also, the studies did not present direct evidence for the longer-term existence of processing fluency effects (Dholakia, U. M., 2010).

Another variant of the fluency-based explanation is the Ideomotor theory according to which questioning activates a perceptual image or idea of an associated action being questioned and this image guides future behavioural performance (Janiszewski & Chandon, E., 2007; Spangenberg, E. R. et al., 2008). This explanation also remains empirically untested (Spangenberg, E. R. et al., 2016).

Motivation-based Explanations

More recently, QBE has been explained through motivation-based theory, according to which questioning stimulates intentional concepts (and not attitudes), favouring and guiding the performance of the questioned behaviour (Gollwitzer & Oettingen, 2008; Kerckhove, Van et al., 2012). The dominant motivation-based theory has been proposed by Kerckhove, Van et al. (2012) and suggests that questioning activates an intention that uniquely guides future behavioural performance by a) increasing accessibility of intentional concepts in memory and b) enhancing commitment to perform a certain action.

In the context of motivational-based theories, two alternative approaches have been proposed. One considers the impact of intentions implementation as a self-regulatory mechanism that people use when deploying conditional planning (if-then) to achieve a personal goal. In this case, questioning is considered to facilitate planning and to guide the performance of the behaviour (Bargh et al., 2001; Gollwitzer & Oettingen, 2008). However, it is important to note that while in other QBE explanations the effect results from one single question, the intentions implementation is based on more elaborated questioning, using several questions for the

intention planning (e.g. where, when and how). Another stream is labelled as normative social identity (Perkins, A. W. et al., 2007), according to which questioning may activate social identities (i.e., self-definitions of group identification) that motivate behaviour consistent with activated identities. In a laboratory-based study, authors found that asking respondents if they would recycle in the future activated self-knowledge related to recycling, thereby boosting self-esteem (Perkins, A. W. et al., 2007). It is important to note that, in this paradigm, social identity serves as a goal guidance inspiring future behaviour. Giving the central position of social normative behaviours, the social identities explanation is limited to SPE (Spangenberg, E. R. et al., 2016) and not applicable to MME.

Inferences-based Explanations

Inference-based explanations have been proposed in particular in the case of customer satisfaction surveys and consumer intention surveys. This suggests that questioning leads respondents to draw inferences that will shape their future behaviour. In this case, the changes in the respondents' behaviour go beyond the questions and it also includes the context in which the question is made, the person or entity that performs the questions, the previous experience replying to that question, etc (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Flynn et al., 2017; Lusk et al., 2007). The inference-based explanation integrates two main streams. One, proposed for the case of firm-sponsored customer satisfaction surveys, considers that those surveys influence respondents' behaviours in a positive way towards the firm, considering the surveys as a manifestation of the importance that the firm gives to the customer feedback (Dholakia, U. M. et al., 2004). This explanation is supported in the Self-Generated Validity Theory (Feldman & Lynch, 1988) and in other research findings about positive inference processes resulting from the service encounters. Further, it is congruent with the theory of selective hypothesis testing (Sanbonmatsu et al., 1998), which suggests that persons form hypotheses regarding a firm that are based on their initial encounter. Later, those inferences will guide those persons in their behaviour towards that firm. In comparison to increased attitude accessibility, the positive inference stream offers a better explanation why it is possible to observe that, in firm-sponsored surveys, dissatisfied customers have more positive behaviour than customers that did not receive the survey. Also, contrary to attitude accessibility, the positive inference approach on firm-sponsored customer satisfaction surveys offers an explanation for the fact that the positive effects persist up to a year after the survey (Dholakia, U. M., 2010).

The other inference explanation stream considers that the inferences are broader than the positive effect and can involve negative effects. This theory also has been proposed in the context of firm-sponsored customer satisfaction surveys. Considering that customers have a

broad base of knowledge and a high degree of interest in the questioning, they possess both the motivation and the ability to generate a wide range of positive and negative inferences (Flynn et al., 2017). This explanation is also influenced by Self-Generated Validity Theory (Feldman & Lynch, 1988) and it is consistent with recent social psychological research showing that individuals can spontaneously infer goals from verbal stimuli such as goal-implying sentences, which can then affect behaviour (Aarts et al., 2004; Hassin et al., 2005). One important study to support this explanation provided evidence that when customers were informed in advance that, after the service, they would evaluate their satisfaction, those respondents presented a negative tendency in terms of their satisfaction and behaviours (Ofir & Simonson, 2001; 2007). This was explained based on an inference made by those customers that the service provider wanted them to offer negative comments and/or constructive criticisms, which is why they tended to focus on weaker or underperforming aspects of the service.

Later research (Bone et al., 2017; Dholakia, U. M. et al., 2010; Flynn et al., 2017; Sharad Borle et al., 2007) has found broader inferences from the participation in firm-sponsored customer satisfaction surveys, presenting positive and negative effects, moderated in particular by the experience of the customer with the firm. In addition, in the context of consumer intention surveys, Lusk et al. (2007) demonstrated that survey respondents act in their own self-interest, responding to purchase intentions questions strategically by making inferences about how their responses will influence the product's future price and also the marketer's decision of whether to offer or not the product. Finally, the broader inference explanation can also be supported by the mechanism of ease of representation proposed by Levav & Fitzsimons (2006). According to this, respondents infer the likelihood of performing a behaviour based on the easiness of the representation of that behaviour and this process reinforces the intention of the performance of the behaviour.

3.3.3. Discussion and Justification of Theoretical Foundations Adopted

As described above, most of the different theoretical explanations have empirical support. However, none of those explanations can fully explain the QBE phenomenon in broader terms, including SPE and MME. Spangenberg et al. (2016) advances three possible reasons for this: i) dependence on boundary conditions with lack of systematic replications; ii) reduced number of comparative theory tests; and iii) complexity of the QBE, given that it can be driven by different mechanisms. Given this situation, several meta-analysis studies on QBE have been recently performed and they provide us relevant information to move the discussion forward. Based on a random-effects analysis on 116 published studies on QBE, Wood et al. (2016) concluded that

intention/prediction questions have a small positive effect on behaviour. However, univariate analyses on theoretical mechanisms showed moderating effects of attitude accessibility and ease of representation but no significant effects for cognitive dissonance or measurement correspondence. In addition, univariate and multivariate analysis revealed the importance of taking into consideration the differences related to the question, behaviour and methodology (Wood, C. et al., 2016). Based on these results and considering the differences of mediators and moderators of QBE, the study suggests that future research should try to disaggregate the mechanisms behind the different forms of the QBE according to the questions and behaviours involved (Wood, C. et al., 2016).

Spangenberg at al. (2016) concluded for the heterogeneity of explanations within the broad concept of QBE, which does not allow a unified theory. However, in a different direction than Wood et al (2016), the meta-analysis favours the motivation and consistency explanations, and it shows less support to fluency and attitudes explanations. In addition, the study underlines the importance of taking into consideration the different moderators and it concludes that future research should try to test different theoretical explanations for specific QBE phenomenon (Spangenberg, E. R. et al., 2016).

Finally, in their meta-analysis, Wilding et al. (2016) also confirmed that questions have a significant effect on behaviour, being stronger for intention and self-prediction questions. As with Spangenberg at al. (2016), this study highlights the importance of taking in consideration the impact of moderators, and in particular the differences among questions and behaviours, calling out for the need of additional research to explore those differences (Wilding et al., 2016).

In conclusion, the above mentioned differences between SPE and MME, together with the findings of the mentioned meta-analysis studies, support the thesis that "one size does not fit all" and that, at this stage, it is preferable to differentiate the two effects (Dholakia, U. M., 2010). Furthermore, as suggested by Dholakia (2010), within the MME research stream, it is important to distinguish the different approaches, in particular between customer satisfaction surveys and purchase intention measurement, since satisfaction questions focus in client welfare towards the company (past), whereas intention questions focus on future behaviours towards the company (Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004). Taking these arguments in consideration, this study will focus on the theoretical foundations of MME concerning customer satisfaction surveys and their impact on respondents' behaviour. In fact, as discussed below, this research will focus on a specific kind of survey, the firm-sponsored customer satisfaction survey (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010). In the following section, an overview on the research of MME on customer satisfaction measurement will be presented and this research will be framed considering the relevant findings of those studies. In

particular, this study will discuss the statistical relevance of the MME; the possible different types of MME (impact of receiving the survey, replying to the survey and receiving feedback on the reply to the survey); the nature of the theoretical explanation for MME in customer satisfaction surveys; and the consideration of relevant MME moderators.

3.4. Mere Measurement Effect
3.4.1. Relevance

The "Mere-Measurement Effect" (MME) research traditionally investigates the impact of respondents' participation in terms of behaviours that are normatively neutral from a social standpoint, in particular customer intention and customer satisfaction (Bergmann & Barth, 2018; Bone et al., 2017; Chandon, P. et al., 2004; Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Dholakia, U. & Morwitz, V., 2002; Morwitz, V. G. et al., 1993; Ofir & Simonson, 2007; Sharad Borle et al., 2007). As will be discussed in detail below, this definition implies the same explanation for effects arising from the participation in surveys related to customer intention and customer satisfaction, although from a structural point of view, the surveys require different evaluations: the intentions are looking forward and do not necessarily involve a previous transaction by the respondent, while customer satisfaction involves a past judgment and previous transaction (even when there is assessment of general satisfaction with the provider). This has created some difficulties in terms of the theoretical explanation given to MME in the context of customer satisfaction and, in particular, in the case of firm-sponsored customer satisfaction surveys (Bone et al., 2017; Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010). This research supports the need to separate the study of the impacts of the impact of respondents' participation in firm-sponsored customer satisfaction surveys from other normatively neutral social intentions or attitudes. With that purpose, the research will address the evolution of MME Theories, identify the different types of MME phenomenon and then focus on MME in terms of customer satisfaction, including theoretical explanations and moderators.

Before moving into the overview of the evolution of MME research, it is important to note that despite the existence of several studies documenting the MME (and other QBE manifestations), there are some critics arguing that MME is an expression of a normal cognitive process of respondents and it would not be possible to extrapolate any conclusions to an entire/relevant population. In this sense, the survey respondents would manifest the behaviour (e.g. example, purchase, loyalty) more than the control group even in the absence of the survey (Dholakia, U. M., 2010; Voorhees, C. M. . et al., 2006). Thus, the MME would be irrelevant from a statistical

point of view and it would emerge from a self-selection bias of the sample, meaning that the persons that respond to the survey are also the persons more likely to perform the positive behaviours toward the company than the control group (that do not receive the survey). In a specific study on self-selection bias on MME research, Anderson et. al (2007) concluded that the MME was reduced to insignificance for both purchase frequency and spending behaviours of customers after controlling for the targeting and self-selection biases. In the same direction, Algesheimer et. al (2010) concluded that when self-selection is controlled for, the positive behavioural effects of joining a customer community became insignificant for a majority of behaviours studied. Earlier research on QBE did not pay specific attention to this issue (Dholakia, U. M., 2010) but more recent investigation has taken this aspect in consideration through sampling and survey administration procedures and, in particular, controlling for high response rates in order to assure solid evidence of QBE from a statistic point of view (Bone et al., 2017; Flynn et al., 2017).

It is important to determine to which extent the results of a survey and the impact of its influence on customers' behaviours can be generalised. In an academic setting, Adams & Umbach (2012) stress the importance of considering non-responses, since they increase the potential for error and undermine external validity. In most cases, non-responses are not random and affect the possibility to generalise the sample results for the population. If there is a relationship between the customer characteristics and the likelihood to reply, it is necessary to interpret the results of the survey and the influence on consumers' behaviour with caution. These considerations will have special relevance when discussing the methodology and design of this research.

3.4.2. Evolution

Annex 2 is a summary of studies on the MME considered for this literature review. As mentioned before, MME has evolved around two different streams, one focused in the impact of questions about consumer intentions and the other focused on the impact of customer satisfaction surveys. In line with the position assumed by this research that it is necessary to separate the two streams, we will start with an overview of the evolution of MME on consumer intentions, and after an overview of the evolution of MME on customer satisfaction will be discussed.

The genesis of MME focused on the impact of questions about consumer intentions. Although sharing some theoretical findings, while in the SPE explanations the impact of intention

questions is traced primarily to the theory on the self-erasing nature of errors of prediction (Sherman, 1980), the MME explanation on intention questions has been developed based on findings from cognitive psychology and behavioural decision theory, labelled as Self-Generated Validity, according to which the measurement of beliefs, attitudes, intentions and behaviours affects correlations among them and subsequent behaviours of the respondents (Feldman & Lynch, 1988). According to this theory act of measurement can create beliefs, attitudes or intentions if those constructs do not exist in long-term memory. In addition, when those constructs already exist in memory, the act of measurement can affect not only the correlation between belief, attitude or intention, but also influence the behaviour of the respondent. In that sense, the theory supports that "momentarily activated cognitions have disproportionate influence over judgments made about an object or on related behaviours performed shortly after their activation. Human beings are usually quite rational, and make systematic use of the information available to them" (Feldman & Lynch, 1988, p. 421). Therefore, this theory also suggests that a survey on beliefs, attitudes, intentions and behaviours can function as an automatic but conscious trigger to influence behaviours.

The findings of the Self-Generated Validity were used to support the MME based on the research of Morwitz et al. (1993) that used for the first time that theoretical construct to define the phenomenon through which the simple measurement of purchase intentions increases the respondents' purchasing behaviour. In fact, the study highlighted that answering an attitude question makes that attitude more accessible and promotes the behaviour consistent with the attitude. In addition, answering to an intention question can change behaviour in two ways: by making attitudes more accessible and by changing the attitude itself (Morwitz, V. G. et al., 1993). To validate this theory, Morwitz et al. (1993) organized two quasi experiments using consumer panels, where the test groups were exposed to surveys on their intentions to buy a car and to buy a personal computers. In the car experiment, 3,3% of consumers who were asked a purchase intent question regarding the automobile category made an automobile purchase within the next 6 months, versus a purchase rate of 2,4% in a control group which was not asked about intent. In the personal computer experiment, 4,5% of consumers who were asked a purchase intent question made a purchase within the next 6 months, versus a purchase rate of 3,8% in a control group which was not asked about intent. Morwitz et al. (1993) concluded that the aggregate increase in sales when comparing test and control groups resulted from the measurement act that reinforced the cognition related with the purchase of the products. After this, additional studies were performed in order to validate those findings and extend the reach of MME. Fitzsimons&Morwitz (1996) explored and found also evidences of MME in the case of surveys performed at the brand level, in particular intention purchase surveys about cars to car owners increase the probability of repurchase of the brand of the car they were owning at the

time of the survey. In that study, they also found that the first-time car buyers are more likely to purchase brands that have large market shares when asked intent questions. In a follow-up study, Morwitz&Fitzsimons (2004) conducted four experiments regarding purchase intentions regarding candy bars that supported the conclusion that MME can be the result of the activation of pre-existing brand attitudes rather than other cognitive structures, pointing to an increase in the accessibility as an explanation for the changes in the behaviour. Another study explored the MME and it supported the conclusion that the persons that were required to answer behavioural intention surveys were more likely to choose those options compared to persons that were not asked, and that difference was due to an automatic mechanism without cognitive processing effort (Fitzsimons & Williams, P., 2000).

Although sharing references in terms of the theoretical framework, within the MME research there was an autonomous development of the study of the impact of surveys in terms of customer satisfaction. The first known study on MME concerning customer satisfaction surveys and its impact on business outcomes was done by Ofir&Simonson (2001). However, the study was not focused on the impact of the customer satisfaction itself but actually focused on the combination of those surveys with the previous information given to customers that they would be required to evaluate their satisfaction with the service afterwards. Thus, the study conducted five different field-experiments across different business settings to test the post-service effects of telling consumers that their satisfaction with a service provided will later be evaluated. Based on those experiments, they concluded that informing the customers about later customer satisfaction survey lowers satisfaction evaluations and reduces their willingness to purchase and recommend the evaluated service (Ofir & Simonson, 2001). This study was followed by two other studies that reinforced these findings (Ofir & Simonson, 2007; Ofir et al., 2009).

The first specific study on the impact of customer satisfaction surveys on the respondents behaviour was conducted by Dholakia and Morwitz (2002). Expanding the finding on MME concerning intentions and using the theoretical framework of the Self-Generated Validity, the study was focused on the persistence of the MME examining the scope and persistence of measurement-induced satisfaction judgments on subsequent behaviour, based on a field experiment by a financial services firm. The test group was submitted to a telephone-based satisfaction survey regarding the firm and its products. The control group did not receive the survey. After the experiment, both groups were withheld from customer satisfaction surveys and marketing activities for a period of a year and their behaviours were tracked during this time. The results showed that the test group (considering only respondents to the survey) owned significantly more accounts (5.45 vs. 3.39), had a defection rate that was less than half (6.6% vs. 16.4%), and were significantly more profitable ($107.8 per month vs. $97.2 per month) than the

control group. Thus, the study concluded that performing post-service customer satisfaction surveys had positive impact on business outcomes. In addition, it showed that those effects persist over time, influencing the behaviour of customers over an extended period of time (Dholakia, U. & Morwitz, V., 2002). Using a similar experiment approach on an automotive service provider, Dholakia et al. (2004) concluded that customers subject to a firm-sponsored customer satisfaction survey had a subsequent positive behaviour compared to customers not surveyed in terms of service visits, number of services purchased in each visit and coupon redemption. However, this study presented findings that questioned the previous approach on MME, in particular using the attitude-accessibility explanation in the case of firm-sponsored customer satisfaction surveys. One particular aspect of this study was the consideration of the level of satisfaction and the tenure of the customer with the company. Considering the level of satisfaction, the study revealed that even lower satisfaction customers presented a subsequent positive behaviour compared to customers not surveyed, which seemed contradictory with accessibility explanation and supported a positivity effect based on inference mechanism. Regarding the tenure, it was possible to observe that more experienced customers had a positive behaviour lower than less experienced customers, which rise the hypothesis that maybe the explanation about MME on firm-sponsored customer satisfaction surveys had a dual nature, i.e., in the case of more experienced customers the effect was due to increase of accessibility and in the case of less experienced customers the effect was due to positive inferences.

Expanding the understanding about the MME in firm-sponsored customer satisfaction surveys, Sharad Borle et al. (2007) performed also a field experiment with an automobile services company, considering the role of customer characteristics and store-specific variables in moderating the effects of survey participation. The study concluded that, compared to the control group (that did not receive the customer satisfaction survey), the test group (that received the survey) presented a positive impact on subsequent purchase behaviour in terms of the number of services purchased, number of promotions redeemed and reduction in inter-purchase time over the period of one year. In addition, the study observed that the effects of survey participation to be moderated by customer characteristics as well as store-specific variables. Considering customer characteristics, the study concluded that newness of the customer's vehicle, household income and household size increased the impact of participating in surveys on customer behaviour, but the customer's age and his or her tenure with the firm were generally found to reduce the impact of survey participation concerning business outcomes. Regarding store-specific variables, the study observed that the survey effects were more visible in company-owned stores than at franchisee-owned stores.

Following the findings of MME on firm-sponsored customer satisfaction surveys, Dholakia et. al (2010) decided to explore some previous evidences that MME in those surveys was supported by an inference process that would influence the subsequent customer behaviour, exploring the shorter and longer term influences of customer participation in those satisfaction surveys. For that purpose, they set two field experiments and a laboratory experiment regarding an automotive services company. The field experiments showed persistence of MME on the test group (that received the survey) over the period of nine months, since the participants delayed the next service visit but accelerated the following service visits when compared to control group (that did not receive the survey). Also, test group showed that the participants were more likely to redeem coupons on all post-survey service visits when compared to control group. In addition, the laboratory experiment demonstrated that customer satisfaction survey participants recalled more service elements and had greater service thoroughness when compared to control group. Based on the findings of those studies, Dholakia et. al (2010) concluded that MME arises not just from the informational content of responses given to survey questions, but also from customers' inferences about the survey and its questions. Those inferences can influence the participants behaviour towards the service provider with positive or negative effects in terms of business outcomes. In fact, the study showed that the survey participation can lead the respondents to assume behaviours contrasting with their response but consistent with the inferences made by them. Another important conclusion was drawn from the evidence that survey participants were more likely than non-participants to redeem coupons for discounts on service visits over the course of a year following the survey, showing synergy between survey-based marketing research and subsequent promotional programs directed at the same customers. Finally, the study alerted for the effect of survey repetition because that can backfire in terms of customer behaviour and, therefore, it is necessary to have a deeper understanding of the net benefit of performing firm-sponsored customer satisfaction surveys.

Looking to extend the MME, Bone et al. (2017) aimed to measure the impact on customer behaviour (purchase behaviour) of starting a customer satisfaction survey with an open-ended positive question, compared to the situations where the customer satisfaction survey did not include the open-ended positive question and to not performing the customer satisfaction survey. In one field experiment in the context of a portrait studio retail chain (business-to-consumer), it was possible to observe that, over the period of one year, open-ended positive question group had done more 8,79% more purchases and the average spending has 8.25% higher than the normal customer satisfaction survey group, and both groups presented more purchases and higher spending than control group (no survey). These results were consistent with the other field experiment done in the context of software sales (business-to-business) where participants in the open-ended positive question group showed a 32.88% increase in

customer spending relative to the group with no open-ended positive solicitation, and both groups presented higher spending than control group (no survey). In addition, this study measured for the first time the impact of "mere-solicitation effect" (customers that were invited to participate in the survey but did not answer to it) showing that in this case the average spending was higher than the spending from the control group. Thus, according to the authors this study demonstrated that customer satisfaction surveys can impact customers behaviours in 3 incremental ways: mere solicitation effect, a traditional mere measurement effect and an additional "mere measurement plus" effect of an open-ended positive solicitation (Bone et al., 2017).

Finally, Flynn et al. (2017) studied the impact of recurring post-service satisfaction surveys at individual-level customer purchase behaviour in response to recurring surveys, considering the long term impact of those surveys considering their potential dual purpose of providing valuable customer feedback and incorporating bidirectional communication into relational marketing strategies. The study reinforced the previous MME research with evidence of the positive impact of the surveys on the purchase behaviour and the moderator effect of customer experience with the company, showing that the MME effect is weaker considering customers with longer experience with the company when compared to customers with shorter experience. Nonetheless, the study presented new and interesting findings. First, the study observed that repeatedly soliciting a customer for satisfaction feedback may have detrimental cumulative effects on purchase amount and inter-purchase time. Second, the study highlights that, contrary to most research done up to that moment, the impact of the surveys is not always positive. On one hand, as survey frequency increases there is a diminishing marginal increase in spending from an additional survey and customers with higher survey frequency exhibit a smaller purchase amount increase after a survey compared to those with lower survey frequency. On the other hand, the study observes that the customer satisfaction surveys tend to not only delay time to the next service transaction, but also the lengthening of time between transactions is amplified for customers with higher survey frequency. Third, the study observed that satisfaction surveys seem to diminish the impact of other marketing communications, noticing that, although purchase amount increases when surveys are used together with direct marketing, this increase is lower when compared to the effect of the survey alone or the direct marketing alone. The authors concluded that customer satisfaction surveys MME can result from positive inferences from customers considering the effort of the company to offer a better service. However, if customers sense that the surveys are not a sincere solicitation of customer input or believe that the firm fails to sufficiently acknowledge or reward customer input, the survey can have diminished or even negative effects that can be worsen by the repetition and burnout of customers with additional customer satisfaction surveys (Flynn et al., 2017).

3.4.3. Different types of MME

The literature review on MME allows to identify different types of MME which require consideration moving forward to discuss the theoretical explanation of its occurrence, as it will be done in the next section. As stated and justified before, following the recommendation of Dholakia (2010), this study will focus on the specific phenomenon of MME on firm-sponsored customer satisfaction surveys and this implies the exclusion of other types of MME.

The first distinction to highlight is that MME has been used to study two different types of surveys: intention and customer satisfaction. Considering the structural differences between them, it is important to separate the study in terms of the theoretical explanation (Dholakia, U. M., 2010). Intention is defined as an action-directing goal representation in memory, involving concrete set of actions or abstract commitments to behaviours to reach a goal (Chapman, 2001). Thus, replying to an intention question involves a mental representation of actions or commitments to perform in the future (taking or not in consideration past events or experiences). Customer satisfaction can be defined as a fulfilment response, involving a judgment that a product/service feature, or the product or service itself, provided or is providing a pleasurable level of consumption-related fulfilment, including levels of under- or over fulfilment (Oliver, 2010). Differently from intention, answering a customer satisfaction involves mainly a retrospective evaluation of a consumer experience, without regard any concrete set of actions or abstract commitments to behaviours for the future. Thus, this research supports the need to separate the study of the two in terms of MME, focusing on customer satisfaction.

The second important distinction to make within MME research if between field-based studies and laboratory-based studies (Dholakia, U. M., 2010). Field-based studies use research methods in order to observe, interact and understand people while they are in a natural environment. Taking in consideration the nature and scope of those studies, the existing research on MME concerning customer satisfaction has been supported in field-based studies and they measure the influence of customer satisfaction surveys on actual behaviours and performance metrics such as customers' defection rates, profitability, frequency of repeat purchase, purchase value, number of items purchased per visit and coupon redemption. MME laboratory-based studies are typically conducted via controlled experiments in the laboratory, using hypothetical situations even when considering real products or services and measuring the impact of questions on participants' behaviour within minutes or hours. Up to now it is possible to observe that all MME laboratory-based studies have been performed only on intentions, measuring the impact of questions mainly in self-reported behaviours or intentions and choices. It has not been

identified any MME laboratory-based study on customer satisfaction. In fact, Dholakia (2010) supports that the MME phenomenon studied in the laboratory is essentially different from the effects observed in the field, supporting that the theoretical explanation for MME on field-based studies, including its boundary conditions, the means of attenuation and practical implications are different from the laboratory-based MME. Thus, this study will focus on MME field-based study on customer satisfaction surveys.

Finally, it is important to distinguish between MME effects resulting from firm-sponsored customer satisfaction surveys and from independent customer satisfaction surveys. Firm-sponsored customer satisfaction surveys are conducted directly by the product or service provider or by a third party but with express mention that the survey is conduct on behalf of the provider. These surveys can be performed after a transaction or without direct connection to a transaction (Dholakia, U. M., 2010). Independent customer satisfaction surveys are conducted without direct reference to the product or service provider (Bone et al., 2017; Dholakia, U. M., 2010; Flynn et al., 2017). Up to now, all MME studies on customer satisfaction have been performed based on firm-sponsored customer satisfaction surveys and this study will also focus only in this kind of survey.

In conclusion, and moving forward, this study will focus on the theoretical explanation of MME regarding firm-sponsored customer satisfaction surveys based on field-based studies, without prejudice of mentioning other types of MME when relevant.

3.4.4. Theories for MME in Customer Satisfaction Surveys

When discussing the generic theoretical explanations for the QBE, including SPE and MME, five main types of explanations were supported by different streams of research (attitude, consistency, fluency, motivation, inferences). As it was pointed out to justify the specific scooping of this literature review, when focusing on the impact of customer satisfaction surveys in respondents' behaviour, the theoretical explanations justify a critical analysis. Next, this study will review the theoretical explanations of MME (attitude, consistency, fluency and motivation) and it will conclude that inference-based explanation is the one that shows better fit with the occurrence of MME regarding firm-sponsored customer satisfaction surveys.

Attitude-based Explanation

As discussed before, attitude-based explanation is the prevalent theoretical explanation for QBE, both SPE and MME streams, supporting that an increase on accessibility explains the

effects of measurement on information processing, cognitive structure and behaviour. This explanation was also present in the first MME studies focusing on customer satisfaction (Dholakia, U. M., 2010). According to this theoretical explanation, when survey participants are asked a question about their satisfaction, they are likely to generate their judgment in that moment, engaging in a cognitive process that will support the answer. This process will increase the subsequent accessibility of the judgement and promote behaviours that are consistent with that judgement (Dholakia, U. & Morwitz, V., 2002; Fitzsimons & Williams, P., 2000; Morwitz, V. G. & Fitzsimons, 2004; Ofir & Simonson, 2001; 2007; Ofir et al., 2009). However, additional research about MME on customer satisfaction highlighted several issues of trying to use that explanation (Bergmann & Barth, 2018). First, increased accessibility of information is viewed as an automatic and short-term phenomenon, generally lasting for a few minutes or hours. This contrasts with the fact that MME research on customer satisfaction surveys report effects that can last up to a year (Dholakia, U. M., 2010; Feldman & Lynch, 1988; Spangenberg, E. R. et al., 2016). Second, MME research on customer satisfaction surveys observed that the effects can be opposite to the valence expressed in the survey. In fact, field experiments showed that test group participants that reported dissatisfaction with the service provider reported more positive behaviours towards the company than control group customer (that did not receive the customer satisfaction survey). This contrasts with attitude-based explanation according to which the dissatisfied respondents should report a more negative behaviour than the control group (Dholakia, U. M. et al., 2004; Flynn et al., 2017). Third, according to the accessibility explanation, customers with more experience with the company should present stronger impact due to the customer satisfaction survey in terms of behaviour when compared to newer customers. However, some studies reported that the opposite happened, i.e., newer customers (or with less experience with the company) presented stronger MME in terms of behaviours when compared to older customers (Dholakia, U. M. et al., 2004; Flynn et al., 2017).

Consistency-based Explanation

Consistency-based explanation points out that the change in respondents' behaviour can be explained through the mechanisms of eliminating cognitive dissonance, where the respondent will tend to behave in line with the answer given before in order to avoid the internal conflict of breaking the psychological commitment assumed through the answer. This type of explanation is the dominant theory among SPE researchers (Dholakia, U. M., 2010; Spangenberg, E. R. et al., 2016; Wood, C. et al., 2016) but it has not been used to explain the MME on the customer satisfactions surveys. The main reason is that customer satisfaction surveys are based on a judgement and not an express commitment or an intention to perform any action in the future. In fact, in the customer satisfaction studies the behaviours that are measured after the participation

in the survey (e.g. purchase, visit to store, coupon redemption) are not mentioned in the questions of the survey. Therefore, it is hardly possible to identify the mechanism of elimination of cognitive dissonance in those cases. Another aspect to consider is the fact that consistency-based explanation assumes that the answer of the participant as some normative and social value attached that justifies an overestimation of the answer in terms the real performance of the behaviour (Cialdini, R. & Trost, 1998). In the customer satisfaction survey that normative element is not present, reducing the possibility of cognitive dissonance between the answer and the future behaviours. In addition, the consistency-based explanation suffers from identical difficulties as the ones identified in the accessibility-based explanations, in particular the difficulty to explain the MME regarding the customers who report in the survey mild satisfaction or even dissatisfaction.

Fluency-based Explanation

According to fluency-based explanation the MME is explained by the fact that questioning makes the respondent more fluent on the questioned behaviour and more prone to adopt that behaviour (Chapman, 2001; Fitzsimons & Shiv, 2001; Fitzsimons & Williams, P., 2000; Levav & Fitzsimons, 2006). In this sense, the question influences the person to become aware or more familiar with the questioned behaviour and to engage mentally in the possibility to perform the behaviour. As a variant to this explanation, some authors mention the Ideomotor theory in which questioning activates a perceptual image or idea of an action being questioned and this image guides future behavioural performance (Janiszewski & Chandon, E., 2007; Spangenberg, E. R. et al., 2008). Another variant is Attitude Polarisation, according to which questioning intentions could trigger the node for a behaviour and consequently an attitude (Dholakia, U. M. et al., 2010; Fitzsimons & Morwitz, V. G., 1996; Morwitz, V. G. & Fitzsimons, 2004). Although Fluency-based explanations receive relevant support in MME research concerning intentions (Chapman, 2001; Fitzsimons & Shiv, 2001; Fitzsimons & Williams, P., 2000; Levav & Fitzsimons, 2006; Morwitz, V. G. & Fitzsimons, 2004), no study that supports the MME on satisfaction surveys has yet been identified as based on this theoretical approach. Fluency-based explanations seem more fit for "intention questions", since the activation of the cognitive process associated with the question have a direct connection with the behaviour to be performed by the respondent (Janiszewski & Chandon, E., 2007; Spangenberg, E. R. et al., 2016). In addition, the fluency-based explanation suffers from identical difficulties as the ones identified in the accessibility-based explanations, in particular the difficulty to explain the MME regarding the customers who report in the survey mild satisfaction or even dissatisfaction and to explain why customers with more experience report lower effects in terms of behaviour when

compared to customers with less experience with the company (Dholakia, U. M. et al., 2010; Flynn et al., 2017).

Motivation-based Explanation

Motivation-based explanations supports that questioning stimulates intentional concepts (and not attitudes), favouring and guiding the performance of the questioned behaviour (Gollwitzer & Oettingen, 2008; Kerckhove, Van et al., 2012). Thus, according to this theory, answering to the question motivates the respondent to engage in the behaviour. A variant thesis points out that questioning enhances social identities that promote motivation to perform the questioned behaviour (Perkins, A. W. et al., 2007). In the study of MME on satisfaction surveys no support for Motivation-based explanations has been found. In fact, this theory seems to work better with questions about intentions (Spangenberg, E. R. et al., 2016), favouring and guiding the performance of the questioned future behaviour (Gollwitzer & Oettingen, 2008; Kerckhove, Van et al., 2012). As it happens with other explanations mentioned before, in satisfaction questions the focus is the past experience of the customer and the MME is measured through behaviours that are not mentioned in the question. Thus, the motivation-based explanations do not seem to have a good fit to explain the occurrence of the MME on the customer satisfaction surveys. Finally, this explanation also suffers from identical difficulties as the ones identified in the accessibility-based explanations, in particular the difficulty to explain the MME regarding the customers who report in the survey mild satisfaction or even dissatisfaction.

Inference-based Explanation

In broad terms, Inference-based explanation supports that the change in the respondent's behaviour after the survey results in inferences that go beyond the questions and it also includes the context in which the questions are made, the person or entity that performs the questions, the previous experience replying to that question, etc. The majority of the MME studies on firm-sponsored customer satisfaction surveys tend to support the Inference-based explanations for the impact of the surveys on the subsequent behaviour of customers (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Flynn et al., 2017; Sharad Borle et al., 2007). However, the use of the Inference-based explanation has suffered evolution and changes based on the empirical studies performed since it was first proposed by Dholakia et al. (2004). In fact, this study questioned the previous approach on MME on firm-sponsored customer satisfaction survey (Dholakia, U. & Morwitz, V., 2002) because the study revealed that even lower satisfaction customers presented a subsequent positive behaviours (higher frequency of visits to the shop, greater purchase of services, higher coupon redemption) compared to customers not surveyed, which seemed contradictory with accessibility explanation (that would predict more

negative behaviours compared to the control group) and supported a different explanation based on an inference mechanism called "Positivity Effect", according to which the participation of customers in the satisfaction survey allowed them to infer favourable information about the company. Two different alternatives were proposed for this positive effect. It could result from an improvement of the customer relationship with the company since the customer would value the fact that the company cared about their feedback. In reaction, customers would reciprocate and change behaviour in a more positive way towards the company compared to the customer that were not invited to participate in such surveys. An alternative possibility is that the invitation to participate in the survey affects the perception of quality and the participants consider that the company is committed to provide a superior service and, as a result of their enhanced perceptions and expectations, those customers would display correspondingly stronger relational behaviours toward the company (Dholakia, U. M., 2010). This explanation is also consistent with Self-Generated Validity Theory (Feldman & Lynch, 1988) and other findings of consumer psychology that support that customers can develop positive inferences about companies resulting from single contacts (Folkes & Patrick, 2003; Sanbonmatsu et al., 1998). Also, relative to increased attitude accessibility, the positive inference could explain better the broader and persistent effects of the survey (Dholakia, U. M. et al., 2004; Sharad Borle et al., 2007).

However, the findings from subsequent studies on sponsored-firm customer satisfaction surveys led to an evolution of the explanation to include a broad range of inferences instead of only positive inferences. Considering the field experiment with a car service shop, Dholakia et al. (2010) found that the effects of the customer satisfaction survey included a delay on the visit for oil lube change of the test group (that received the survey) compared to control group (that did not receive the survey). In addition, the study found that test group customers recalled more service elements and had greater service thoroughness when compared to control group. Based on the findings, Dholakia et. al (2010) concluded that MME arises not just from the informational content of responses given to survey questions, but also from customers' inferences about the survey and its questions. Those inferences can influence the participants behaviour towards the service provider with positive or negative effects in terms of business outcomes. Such explanation is still consistent with Self-Generated Validity Theory (Feldman & Lynch, 1988) but also it takes in consideration social psychological research showing that individuals can spontaneously infer goals from verbal stimuli such as goal-implying sentences which can then affect behaviour (Aarts et al., 2004; Hassin et al., 2005). In the identical direction, Lo et al. (2007) observed that the inference mechanism can even explain positive effects and positive consideration about service quality from customers regarding promotions that discriminate negatively against them if the group that receives the promotion is seen as

expert customers. Dholakia et al. (2010) identified that inferences of service thoroughness are likely to be associated with beliefs of higher quality of the service received by the customer and affect his subsequent behaviour toward the company. These findings have support in cognitive research that discovered that answering questions affect the memory of the respondents to the point of being able to change their recall of what happened. Interestingly, this phenomenon has been registered not only in relation to true events such the inflation of the number of coin flips (Goff & Roediger, 1998) but also in relation to fake and fantastic events as kissing a plastic frog (Thomas, A. K. & Loftus, 2002). Thus, answering to the satisfaction survey by itself can affect memory changing the perception of the service and even can create inflated memories about things that did not occur during the service or transaction. The inference-explanation is also consistent with the research on the effects of previous expectation to evaluate the service in terms of satisfaction that pointed out for a negativity enhancement of the answers and behaviours of the customers (Ofir & Simonson, 2001; 2007; 2009). In addition, research has found that the framing of the survey request (the survey's title, topic, stated purpose and sponsor) can affect the respondents' answers based on the inferences that the participants can extract from that information (Galesic & Tourangeau, 2007). The broad range of inferences due to survey participation would also explain better than the accessibility-based explanation the direction and persistence of the effects of the survey (Dholakia, U. M., 2010). Later studies also reinforced this explanation. Bone et al. (2017) found that customer satisfaction surveys can generate different inferences with impact in behaviours and business outcomes, including the fact that the mere solicitation of customer satisfaction produced positive effects when compared to the control group (which did not receive the survey) although lower effects than the ones registered in the test group that replied to the "normal" customer satisfaction survey or to the customer satisfaction survey that had an open-ended positive solicitation in the beginning. Finally, Flynn et al. (2017) also supported the MME on the inference-based explanation, presenting additional findings, including the fact that repeatedly soliciting a customer for satisfaction feedback may have detrimental cumulative effects on purchase amount and inter-purchase time. More importantly, the study observed that satisfaction surveys seem to diminish the impact of other marketing communications. The authors concluded that customer satisfaction surveys MME can result from positive inferences from customers considering the effort of the company to offer a better service (Folkes & Patrick, 2003; Gustafsson et al., 2003; Johnson, M. D. et al., 1995; Johnson, M. D. & Nilsson, 2003). However, if customers sense that the surveys are not a sincere solicitation of customer input or believe that the firm fails to sufficiently acknowledge or reward customer input, the survey can have diminished or even negative effects that can be worsen by the repetition and burnout of customers with additional customer satisfaction surveys (Flynn et al., 2017). In fact, it is possible to suggest that firm-

sponsored customer satisfaction surveys generate inferences that can be seen in persuasion initiatives like advertisement, promotional materials or sales speech. According to the Persuasion Knowledge Model (PKM) people adapt their attitudes and behaviours according to their knowledge about the attempt of persuasion from a company and they also will develop strategies and tactics to react to those attempts as soon as they recognize them (Friestad & Wright, 1994). This also can help to explain the fact that the positive MME effects are lower for the customer with greater experience with the company than the customers with less experience and also why MME can lead to negative effects when customers are submitted to several customer satisfaction surveys from the same provider. For example, research has observed that advertising exposure prior to conducting a customer satisfaction survey can enhance overall customer satisfaction evaluation of the company, but it also can backfire and led to lower assessment by the respondents that had displayed a complaining behaviour towards the company in the past (Lee & Park, 2015).

Conclusion

After reviewing the different possible theoretical explanations of MME concerning the impact of customer satisfaction surveys in respondents' behaviour, it is possible to conclude that inference-based explanation is the one that shows better fit with the occurrence of MME regarding firm-sponsored customer satisfaction surveys. This explanation seems to be more consistent with results from empirical studies, namely the fact that the impact is observed in all respondents (event moderate or low satisfaction) and even in customers that do not reply to the feedback (Bone et al., 2017). In addition, the inference-based explanations have a better fit with the persistence of the MME across time documented on those studies. Finally, this theory also supports better the negative impacts that have been pointed out by some researchers: anticipation of the survey (Ofir & Simonson, 2001; Ofir & Simonson, 2007); overlap with company communications (Flynn et al., 2017). Next, this research will discuss the importance of MME moderators in firm-sponsored customer satisfaction surveys.

3.4.5. MME Moderators in Customer Satisfaction Surveys

An important aspect emerging from the MME research is the need to take in consideration moderators in the analysis of questioning impact on respondents' behaviours (Spangenberg, E. R. et al., 2016). Surprisingly, this was a topic that did not receive special attention from the first MME studies but it has received more attention from more recent research (Bone et al., 2017;

Dholakia, U. M., 2010; Flynn et al., 2017; Sharad Borle et al., 2007; Spangenberg, E. R. et al., 2016; Wilding et al., 2016; Wood, C. et al., 2016).

In a critical review of the QBE research, Dholakia (2010) presented a systematisation of the moderators studied in the MME: i) consumer's experience with product category; ii) customer's experience with the firm; iii) respondent characteristics; iv) firm characteristics; v) behaviour characteristics. On a different approach, and focusing on the study of the nature of the QBE, Spangenberg et. al. (2016) organised the moderators around the characteristics of the questions and the characteristics of the target behaviour. In terms of the former, the following moderators were identified: i) question response modality; ii) type of question; iii) time frame of question; iv) response scale of question; v) question–behaviour overlap; vi) specificity of the question. Concerning the characteristics of the behaviour, the following moderators were identified: i) category of behaviour; ii) reporting of behaviour; iii) timing of behaviour; iv) novelty of behaviour; v) psychological and social risk of non-performance; vi) behavioural effort required. Complementing the previous studies on the moderators and taking in consideration the differences between laboratory-based studies and field-based studies (Dholakia, U. M., 2010), Wood et. al (2016) underline the importance of the research settings on the results.

In MME studies on firm-sponsored customer satisfaction surveys the following moderators have been studied: customer experience with the firm; respondents characteristics, firm characteristics and survey frequency.

The moderator factor of customer experience with the firm has been tested, showing different MME when considering novice and experienced customers (Dholakia, U. M. et al., 2004). In an experience with car service provider, novice and experienced customers showed positive effects of the survey compared to the control group (that did not receive the survey), but novice customers showed more favourable behaviours (annualized frequency of service use, annualized purchase amount, number of services purchased per visit) compared to customers with higher degree of experience with the firm. From this evidence, the study concluded that prior experience with the firm shifted the psychological process through which the MME occurred. In this study, the authors also identified a different approach in terms of moderating effect of MME based on customer qualitative experience, advancing the hypothesis that the type of previous experience with the firm could affect the inferences that customers make about participating in that survey. For example, customers who have had prior negative experiences may infer negative reasons for the survey that are not inferred by customers who have had positive experiences. Dholakia et al. (2004) compared high and low satisfaction test groups and found out that both of them presented positive effects when compared to control group.

However, the amplitude of the MME impact was lower for the low satisfaction customer group compared to the high satisfaction group.

The only MME study on determining the moderator factor of respondents' characteristics in MME resulting from firm-sponsored customer satisfaction surveys has been performed by Borle et al. (2007). In the context of a car service provider, they studied the impact of the customer satisfaction survey on different behaviours (number of promotions redeemed; number of services purchased; time since the last visit in days and amount spent). They considered the following customer characteristics as predictors: gender, age, tenure with the firm, the vehicle's manufacture year, median household income, and household size. The study concluded several interesting moderator effects of MME. The effects of survey participation diminished with increasing age, greater customer tenure, and with increasing age of the customer's vehicle. They argued that both age and tenure are indicative of customer experience and these customers are less likely to gain additional useful information from the survey, or to form measurement-induced judgments. In contrast, younger and newer customers are likely to have uncrystallized opinions regarding the firm, and the survey should impact them to a greater degree. Both household income and size also strengthened the MME for some of the behavioural variables. Interestingly, the customer's gender was the only characteristic studied that did not play a moderating role for any of the behaviours (Sharad Borle et al., 2007).

Parallel to the study of respondents' characteristics, Sharad Borle et al. (2007) also examined the moderating role played by store-specific variables in influencing the MME's strength (company-owned or franchisee-owned store, existence or not of customer lounge, number of service bays and measure of throughput times). The results showed that only the factor company owned or franchisee-owned store presented relevant moderator effect concerning the participation on the customer satisfaction survey, considering that in company-owned store there was a higher number of promotions redeemed and higher purchase value compared to franchisee-owned store. The authors interpreted these results considering that since company-owned store had more services available than franchisee-owned store it affects more positive inferences from the customers. They also noted the possibility that employees at company stores might be more responsive, leading to more positive behaviours.

Flynn et al. (2017) study the impact of the customer satisfaction surveys frequency and they found that the beneficial impacts of satisfaction surveys on purchase behaviour have diminishing marginal returns as survey frequency increases, namely the purchase amount increased with survey (though at a decreasing rate) and frequency and interpurchase time decreased with survey frequency up to a point but then began to increase at higher levels of survey frequency, following a U-shaped pattern. In addition, they found a negative interaction

between survey frequency and a recent satisfaction survey for purchase amount and a positive interaction between survey frequency and receiving a satisfaction survey for interpurchase time. More frequent surveys dampened the positive effect of a satisfaction survey on purchase amount considerably. In contrast, high survey frequency led to a slightly steeper increase in interpurchase time after receiving a satisfaction survey (Flynn et al., 2017).

3.5. Hypotheses Development

In the previous sections the relevant literature has been discussed as this pertains to the research objectives set out at the beginning of this thesis. Next, based relevant findings, research hypotheses development and respective arguments will be presented.

To understand the development of the study hypothesis it is important to highlight some important elements both from the design of the research and its limitations. This thesis is supported by a field-experiment that has been made possible thanks to the collaboration with a Utility. The possibility to perform the experiment in the normal setting of the business is really valuable in the scope of studying the impact of firm-sponsored customer satisfaction surveys. However, it brings also limitations, because it implied the use of the ongoing customer satisfaction survey and to be limited on the data made available by the Utility in order to measure the impact in terms of business outcomes. In general terms, the field-experiment is based in one major independent variable and four main dependant variables. Since those variables are relevant for all the hypothesis formulated, it is important to highlight their meaning and their use in the relevant literature.

Regarding the independent variable, as it will be discussed in greater detail in the next chapter, it is important to highlight that the independent variable is the firm-sponsored customer satisfaction survey and the customer experience around it, not a specific question (Dholakia, U. M., 2010). In fact, in the field-experiment studies on MME concerning firm-sponsored customer satisfaction surveys the option has been to use the ongoing customer survey of the company that collaborates with the researchers (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. & Morwitz, V., 2002; Flynn et al., 2017; Sharad Borle et al., 2007). In any case, as it happens in the business practice, despite the differences, those surveys follow an identical template in terms of questions and content. This study has also adopted the customer satisfaction survey format as it has been adopted by the Utility on their ongoing customer feedback program (**Annex 3**).

Regarding the dependent variables, this thesis was limited to the access of information provided by the Utility and therefore the hypothesis testing had to be adapted. In any case, it is important

to highlight that the core argument of MME theory is that the participation of customers in firm-sponsored customer satisfaction surveys has a general positive impact on the customer behaviour and business outcomes resulting from the interaction of the customer and the company. The specific outcomes can be different from study to study but the main thesis still prevails. Therefore, for this thesis the study of the impact of the firm-sponsored customer satisfaction surveys has been limited to: defection, repurchase, complaints and profitability.

Customer defection can be defined as the cancelation of an existing contract, non-renewal at the termination date of a contract or the cessation of purchase behaviour over a period of time (Briley & Cone, 2004; Kumar, 2017; Reicheld, 1996). The impact of MME on defection resulting from firm-sponsored customer satisfaction surveys has been studied by Dholakia&Morowitz (2002). In that study, customer was defined as having defected from the company if the customer closed all of its accounts related with financial services at any time during the one-year time period of the study (Dholakia, U. & Morwitz, V., 2002). In this present study, defection is considered a termination of an energy supply contract by an existing customer at any time during the twelve-month period of the study.

Repurchase or new purchase of a product or a service from a company by an existing customer represents an additional source of value and it is usually connected (but not necessarily) to a satisfaction state (Dick & Basu, 1994; Francken, 1983; Fullerton, 2003; Mittal, V. & Kamakura, 2001; Oliver, 2010; Yi, 1990). The impact of MME on repurchase has been studied in different studies. Dholakia&Morowitz (2002) studied the impact of the firm-sponsored customer satisfaction survey on the repurchase of financial services, considering as repurchase the opening of new accounts during the one-year time period after the experiment. In a study about car service, Dholakia&al. (2004) considered 3 different repurchase measures: annualized frequency of service use (the number of service visits per year); annualized purchase amount (the total dollar amount of purchases annually) and number of services purchased per visit (the average number of services purchased per visit). Sharad Borle et al (2007) studied the impact of MME of firm-sponsored customer satisfaction surveys on repurchase in an automotive services firm, considering the repurchase the number of automotive services purchased on each visit. Bone&al, (2017) studied the impact of MME of firm-sponsored customer satisfaction surveys on repurchase in two different studies. In the first study, concerning a portrait studio retail chain, repurchase was considered total sales revenue one year after survey. In the second study, concerning a B2B software manufacturer, repurchase was considered the purchase after the free trial. Concerning car service store, Flynn&al, (Flynn et al., 2017) studied the impact of MME of firm-sponsored customer satisfaction surveys on repurchase based on two different metrics: purchase amount (amount of money spent by the customer in the period of the study) and

interpurchase time (number of days between each visit to the car shop during the period of the study). In this present study, repurchase is considered the acquisition (number) of any additional product or service from the Utility by an existing customer during the twelve-month period of the study.

Complaints can be defined as an explicit expression of dissatisfaction, resulting from a process of interaction through which a decision and outcome occurs (Brown et al., 1998; Crie, 2003), thus complaint behaviour is one of the responses to perceived dissatisfaction in the post-purchase phase. It gives an organisation a last chance to retain the customer if the organisation reacts appropriately. It has not been identified any MME study that address the impact of firm-sponsored customer satisfaction surveys on complaints. However, it was decided to include complaints in the study because of its impact as a business outcome of the Utility, with direct impact in terms of cost and also in terms of reputation (Walsh et al., 2006). Thus, in the present study, a complaint is considered a specific interaction or request by the customer in which the client expresses dissatisfaction and it has been registered as such in the CRM of the Utility any time during the twelve-month period of the study.

Profitability of a customer is the overall metric that measures the contribution of that customer to the results of the company. It can be defined as the difference between the revenues earned from and the costs associated with the customer relationship during a specified period (Pfeifer et al., 2005). Dholakia&Morwitz (2002) have studied the impact of MME of firm-sponsored customer satisfaction surveys on customer profitability. In that study, customer profitability was computed using a standard algorithm of financial institutions based on activity-based cost accounting practices, computing the difference between total revenues (including fees, interest income, service charges, etc.) and total costs (including interest expenses, servicing costs, transaction costs, etc.). Similar to that approach, in this study customer profitability is computed using a standard algorithm based on well-accepted activity-based cost accounting practices used by the Utility (normalized for this study). It considers the difference between total revenues (energy bill, other services revenues, etc) and total costs (servicing costs, transaction costs, etc.).

3.5.1. MME and the Power of Inferences

This research aims to contribute to the academic body of knowledge by exploring whether firm-sponsored customer satisfaction surveys have a positive effect on business outcomes. In that sense, this research intends to contribute to assessing conclusions from past MME research on firm-sponsored satisfaction surveys that assumes questioning customers about their satisfaction

will change customers' behaviours and have an impact on business outcomes. Several different positions on the impact of MME in the case of firm-sponsored customers satisfaction surveys were identified, as follows: customer satisfaction survey lowers satisfaction scores and reduces respondents' willingness to purchase and recommend the assessed service (Ofir & Simonson, 2001; Ofir & Simonson, 2007; Ofir et al., 2009); post-service customer satisfaction surveys have a positive impact on business outcomes – they increase of number of accounts (financial products), decrease of defection rate and increase in profitability (Dholakia, U. & Morwitz, V., 2002); post-service customer satisfaction surveys have a positive impact on business outcomes in terms of service visits, number of services purchased in each visit and coupon redemption (Dholakia, U. M. et al., 2004); customer participation with satisfaction surveys has a positive impact on business outcomes measured in terms of the number of services purchased, number of promotions redeemed and reduction in inter-purchase time (Sharad Borle et al., 2007); customer participation in post-service satisfaction surveys delays the next visit to service and has a positive effect on promotions redemption (Dholakia, U. M. et al., 2010); there is a positive effect on purchase (higher number of purchases and higher average spending) when a customer satisfaction survey had an open-ended positive question as its first item (Bone et al., 2017); recurring post-service satisfaction surveys have detrimental cumulative effect on purchase amount and inter-purchase time and diminish the impact of other marketing communications (Flynn et al., 2017).

This thesis adopts the broad position – based on consideration of prior evidence – that firm-sponsored customer satisfaction surveys trigger inferences, causing changes in customers' behaviours that have a beneficial impact on business outcomes (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Flynn et al., 2017; Sharad Borle et al., 2007). Those studies support that broad conclusion, based on the study of different metrics, with particular focus on defection and repurchase. At least one study has measured profitability as a global metrics to determine the net effect in terms of revenues and expenses generated by providing a financial service (Dholakia, U. & Morwitz, V., 2002)

Several authors have pointed out the importance of companies to understand and to explore the impact of customer feedback as a driving force of value creation in the context of a broader concept of value creation and relationship marketing (Challagalla et al., 2009; Griffin & Hauser, 1993; Kumar & Pansari, 2016; Kumar & Reinartz, W., 2016; Liu & Gal, D., 2011; Morrison & Bies, 1991; Pansari & Kumar, 2017; Zaltman, 2011). This thesis explores the impact of MME of firm-sponsored customer satisfaction surveys on the selected business outcomes of a Utility. Since the Utility has a subscription business model (Pauwels & Weiss, 2008) identical to the business model of the financial services company studied by Dholakia&Morwitz (2002), this

thesis will follow closely as possible the methodology of this aforementioned study to understand the MME impact on the business outcomes. However, as also mentioned before, the study is limited by the conditions of the field experiment performed in collaboration with the Utility, in particular in terms of the studied variables. Therefore, considering the findings of previous MME literature based on an inference process, this thesis anticipates that there is a positive impact of the firm-sponsored customer satisfaction surveys in terms of customers behaviours towards the company and the business outcomes, namely: defection, repurchase, complaints and profitability.

The impact of MME on defection resulting from firm-sponsored customer satisfaction surveys has been studied by Dholakia&Morowitz (2002). The study concluded that customers that participated in firm-sponsored customer satisfaction survey presented a lower defection rate than customers in a control group (that do not participate in the customer satisfaction survey). In the same direction, this thesis formulated the hypothesis that the customers of the Utility that participate in the customer satisfaction survey (regardless of receiving any "thank you" message after answering to the survey) will present a lower defection rate than the customers in the control group after twelve-month period counted after participation in the survey.

The impact of MME on repurchase has been studied in different studies and all pointed out in the same direction, supporting the positive impact of firm-sponsored customer satisfaction survey. Dholakia&Morowitz (2002) concluded that customers participating in the customer satisfaction survey presented higher repurchase of financial services than the customers in the control group during the one-year time period after the experiment. Dholakia&al. (2004) concluded that participation in a firm-sponsored survey leads customers to engage in more service visits, purchase more services at each visit when compared to customers that do not participate in the customer satisfaction survey. Sharad Borle et al (2007) also have concluded that the participation in customer satisfaction surveys increased the repurchase of automotive services on each visit (when compared to customers in control group that did not receive the survey). In two different studies, Bone&al, (2017) concluded that customers participating in firm-sponsored customer satisfaction surveys presented a higher repurchase rate when compared to customers not participating in the survey. Concerning car service store, Flynn&al, (Flynn et al., 2017) concluded that soliciting a customer's feedback increases the purchase amount and decreases interpurchase time (although the repetition of the solicitation of customer's feedback may have detrimental cumulative effects on purchase amount and interpurchase time). In the same direction, this thesis formulated the hypothesis that the customers of the Utility that participate in the customer satisfaction survey (regardless of receiving any "thank you" message after answering to the survey) will present a higher repurchase rate when compared to control

group, translated in higher acquisition of product or service from the Utility during the twelve-month period of the study.

It has not been identified any MME study that address the impact of firm-sponsored customer satisfaction surveys on complaints. However, the central argument of the MME is that firm-sponsored customer satisfaction surveys have a general impact in the business outcomes, including concerning customers that present low levels of satisfaction (Dholakia, U. M. et al., 2004). Since complaints are one expression of dissatisfaction with service provider before defection (Walsh et al., 2006) and they have an important impact as a business outcome of the Utility, it has been decided to include complaints in this study. Thus, following the MME position that firm-sponsored customer satisfaction surveys have a general impact in the business outcomes, namely decreasing defection, this thesis formulated the hypothesis that the customers of the Utility that participate in the customer satisfaction survey (regardless of receiving any "thank you" message after answering to the survey) will present a lower complaint rate compared to control group during the twelve-month period of the study.

Finally, Dholakia&Morwitz (2002) have studied the impact of MME of firm-sponsored customer satisfaction surveys on customer profitability as a general metric to capture the net impact of the phenomenon on revenues and expenses of providing the service. In that study, the conclusion pointed out that customers participating in firm-sponsored customer satisfaction surveys presented a higher profitability when compared to customers in control group (that did not receive the survey). In the specific case of the Utility under study, this thesis has formulated the hypothesis that the customers of the Utility that participate in the customer satisfaction survey (regardless of receiving any "thank you" message after answering to the survey) will present a higher profitability compared to control group during the twelve-month period of the study.

In summary, and taking in consideration the abovementioned elements, in the context of MME literature, it is hypothesized:

> **Hypothesis 1.1:** Respondents to firm-sponsored customer satisfaction surveys (and do not receive any "thank you" message after answering to the survey) show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive post-service satisfaction surveys after twelve-month period of the participation in the survey.

> **Hypothesis 1.2:** Respondents to firm-sponsored customer satisfaction surveys (and receive a "thank you" message after answering to the survey) show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c)

lower complaints and d) higher profitability than customers that do not receive post-service satisfaction surveys after twelve-month period of the participation in the survey.

This thesis considers that the occurrence of MME in firm-sponsored customer satisfaction surveys is supported by an inference-based explanation and not by an accessibility-based explanation that is dominant in the case of MME in intention based surveys (e.g. intention to purchase). In addition to the arguments presented before, there is an important difference between those two types of surveys that support the inference-based explanation in the case of the first. While in intention surveys the MME is related to one or more specific questions that address the intention of the respondent to perform (or not) that behaviour, the MME in firm-sponsored customer satisfaction surveys results from the survey and not from one or more questions. In fact, the MME studies on firm-sponsored customer satisfaction surveys address the impact of the survey on outcomes that are not questioned (e.g. purchase, defection, profitability, etc). Another important difference is that firm-sponsored customer satisfaction surveys involve a previous relationship between the customer and the company and the specific experience that is being evaluated. In intention surveys the focus is the intention to perform a new behaviour (even if it is repurchase) and the respondent may or not have a previous relationship with the beneficiary of the performance of the behaviour (Chandon, P. et al., 2004; Fitzsimons & Williams, P., 2000; Morwitz, V. G. & Fitzsimons, 2004). Indeed, in most cases of intention surveys, the respondents are not aware about who is the sponsor of the survey (Williams, P. et al., 2004). Finally, MME studies on firm-sponsored customer satisfaction surveys have concluded that the impact of the survey can last for an extended period (Dholakia, U. M. et al., 2010), which it is consistent with the inference-explanation but not with the accessibility explanation where the effects are short-term (Dholakia, U. M., 2010).

Consistent with the MME explanation based on inference, this thesis will explore evidence suggesting that the effects of firm-sponsored customer satisfaction surveys occurs beyond the direct impact of answering to the survey. That is, it applies to those *receiving* a survey, not just those who respond to a survey. The central aspect of the majority of MME studies is how answering to a survey will affect the respondents' behaviour (Dholakia, U. M., 2010) and these studies do not take into account just the *setting* or *administration* of questions. However, as identified in earlier sections, some authors have explored additional *ex ante* and *ex post* interactions with respondents to understand how it changed the MME. As an *ex ante* interaction with the act of answering a survey, some studies concluded that the simple fact of informing the customers that they will be asked to reply to a firm-sponsored satisfaction survey after the service lowers satisfaction score and it reduces their willingness to purchase and recommend the evaluated service when compared to control group that did not receive that information (Ofir &

Simonson, 2001; Ofir & Simonson, 2007; Ofir et al., 2009). As an *ex post* interaction, Flynn et al. (2017) concluded that satisfaction surveys seem to diminish the impact of other marketing communications such as promotion redemption coupons (when compared to control group that did not receive the survey), which may require special caution with the overlapping of contacts and survey burnout.

Taking in consideration possible ex ante and ex post interactions, some authors have explored how the MME resulting from firm-sponsored customer satisfaction surveys can change due to: i) just receiving the survey and do not reply to it (Bone et al., 2017) and, ii) the fact that the company replies or not to the customer acknowledging the answers to the survey (Becker et al., 2020; Challagalla et al., 2009; Shin et al., 2017). Besides its relevance from a managerial point of view (since the potential impact is relevant to measure the potential value creation or destruction), the study of these two situations can have an important contribution to the theoretical explanation of the occurrence of MME, in particular to support (or not) the inference-based explanation (Dholakia, U. M., 2010).

In fact, general research on survey participation argues that respondents use inferences to reply to surveys, in particular when there are qualitative questions involved (Bradburn et al., 1987; Galesic & Tourangeau, 2007), using and reconstructing information on their memory to answer questions (Sara, 2000; Schacter, 2001; Tversky & Kahneman, 1973; Tversky & Kahneman, 1974). Even more interestingly, some research points out that consumers act based on inferences about information not expressly given to them by companies (Dholakia, U. M. et al., 2010; Friestad & Wright, 1994; Kardes et al., 1993). They evaluate service as more efficacious and state themselves more satisfied when asked to provide feedback (Berry & Leighton, 2004; Morrison & Bies, 1991; Ping Jr., 1993), and they even draw inferences about a company based on a single service encounter with a single employee (Folkes & Patrick, 2003). These inferences can be even counter-intuitive. Lo&al. (2007)showed that "non-professional" customers made more positive quality inferences on the product when the seller discriminated against them in terms of price by offering better deals on the same product to "professional" consumers.

In the context of MME, this research is intended to validate the hypothesize that post-service satisfaction surveys from a company influence positively the customer behaviour toward the company in terms of defection, aggregate purchase value, profitability and complaints and that positive influence occurs due to an inference-based process that the customer does towards the company on its commitment to receive and use feedback. If it is possible to observe MME on business outcomes resulting from receiving (and not replying) the firm-sponsored customer satisfaction survey, it is reasonable to conclude that the impact results from inferences of the customers concerning the survey and the company and not from answering to the questions of

the survey (Bone et al., 2017). In the same direction, if it is possible to observe meaningful differences on MME of firm-sponsored customer satisfaction survey in the cases that the company acknowledges or not the answer to the survey by the customer, it is reasonable to conclude that the impact results from inferences of the customers concerning the survey (and the company) and not just from answering to the questions of the survey (Challagalla et al., 2009).

Thus, the following hypotheses will be tested:

> **Hypothesis 2.** Customers that receive firm-sponsored satisfaction survey (and do not answer to the survey) show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive firm-sponsored satisfaction survey.

> **Hypothesis 3.** Customers that receive an answer from the company after replying to a firm-sponsored satisfaction survey show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that reply and do not receive an answer from the company.

The process of the Utility to react to the answer of the customer satisfaction survey includes two different processes: e-mail and phone call. The decision about which process to adopt follows a cost/benefit approach. Considering that the cost of the phone call is higher than the e-mail, the phone call is only followed when there is a high risk of defection of the customer according to a proprietary algorithm of the Utility. This managerial practice of the Utility has support in the literature that has studied the conditions under which the additional costs of providing proactive post-sales service, including collection of customer feedback, can be justified by the additional value of that service to customers and/or the supplier (Becker et al., 2020; Berry & Leighton, 2004; Shin et al., 2017). Accordingly, some authors have studied how this impact on value creation can change depending on the media means of contact between the supplier and the customer, pointing out that the choice of contact media can influence the efficiency and effectiveness of the contact (Becker et al., 2020). On one hand, personal contact media as phone calls are considered a rich media, high effective but also high cost and high invasiveness. On the other hand, impersonal contact media such as e-mails are comparably much less invasive, low cost but also less rich and effective (Becker et al., 2020).

Although not in the specific context of MME on firm-sponsored customer satisfaction surveys, literature has found evidences that proactive feedback and appreciation messages from service providers influence customers perception and inferences about service quality with impact on business outcomes, namely defection, repurchase, complaints and profitability (Becker et al., 2020; Crie, 2003; Shin et al., 2017), including evidences that phone calls have a higher impact

than e-mails, due to inference of higher investment in the commercial relationship by the customer concerning the service supplier (Challagalla et al., 2009; Froehle, 2006; Murphy & Tan, I., 2003). In particular, some studies observed the positive effect on business outcomes from proactive gratification messages (that offer a benefit to the customer after the beginning of the commercial relationship) and reported the difference between the phone call and e-mail messages, with phone calls presenting higher positive impact (Dimmick et al., 2000; Ramirez et al., 2008).

This thesis supports the inference explanation of MME of firm-sponsored customer satisfaction, according to which the impact on business outcomes results from the inferences that customers extract from the investment that the companies do in obtaining and dealing with customer feedback. Thus, consistently with the above mentioned literature on the impact of proactive feedback and appreciation messages on business outcomes and the differences between the phone call and e-mail communication based on inferences made by customers about investment in the commercial relationship, this thesis formulates the hypothesis that this phenomenon should also be observed in the firm-sponsored customer satisfaction surveys. In particular, it is expected that the "thank you" message (after the completion of the survey) using phone call will have a bigger impact on business outcomes than the "thank you" message e-mail (Barnes & Cumby, 2002; Parasuraman & Colby, 2015; Ramirez et al., 2008; Strauss & Hill, 2001). And e-mail "thank you message" will have bigger impact in business outcomes than no "thank you" message (Challagalla et al., 2009). Thus:

> **Hypothesis 4.** Customers who receive a "thank you" message from the company by phone after replying to a firm-sponsored satisfaction survey show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that receive a "thank you" message by e-mail.

3.5.2. Quantitative and Qualitative Experience with the Company as MME moderators

In the previous section, it was possible to underline the importance of the study of MME's moderator variables both from a theoretical and managerial perspective, since literature points out that the influence of satisfaction surveys can change according to several moderator variables This topic did not receive special attention from the first MME studies but it has

received more attention from more recent research (Anderson, E. et al., 2007; Bone et al., 2017; Dholakia, U. M., 2010; Flynn et al., 2017; Sharad Borle et al., 2007; Spangenberg, E. R. et al., 2016; Wilding et al., 2016; Wood, C. et al., 2016). In addition, the study on moderator variables presents substantial heterogeneity and it requires further study (Dholakia, U. M., 2010; Wood, C. et al., 2016). The investigation of moderator variables by the present research is limited to the data available at the Utility's CRM. Thus, different from the moderator variables identified in previous research (Dholakia, U. M., 2010; Wilding et al., 2016), this study will be limited to the investigation of the influence of the degree of the experience of the consumer with the Utility so as to contribute to a better understanding of the boundary conditions of the MME. As with Dholakia et al. (2004), the customer experience will be evaluated from two different positions: tenure with the company, and satisfaction level at the last prior transaction.

Research has found that customer characteristics moderate the relationship between satisfaction and business outcomes, in particular the tenure of the customer with the company (Cooil et al., 2007; Homburg & Giering, 2001). Tenure represents the length of the commercial relationship between customer and supplier. This relationship represents a continuous and evolutionary involvement. Customers' judgments of recent exchange outcomes are influenced by the cumulative effect of long-term experiences with the supplier. Thus, in the case of relationships that have aged, shifts in satisfaction have a weaker impact on loyalty (Homburg et al., 2003). , The moderator factor of customer tenure has been studied in the context of MME resulting from firm-sponsored customer satisfaction surveys, also showing different MME when considering novice and experienced customers (Dholakia, U. M. et al., 2004). In an experience with car service provider, novice and experienced customers showed positive effects of the survey compared to the control group (that did not receive the survey), but novice customers showed more favourable behaviours (annualized frequency of service use, annualized purchase amount, number of services purchased per visit) compared to customers with higher degree of experience with the firm. From this evidence, the study concluded that prior experience with the firm shifted the psychological process through which the MME occurred. This means that, according to the inference explanation, the MME is stronger with novice customers than with experienced customers because they are more sensitive to inferences as a source of information (as opposed to experienced customers that mitigate new information and inferences with their previous experience) about the supplier. In consequence, the "surprise factor" will determine a bigger change the business outcomes emerging from novice customers than from experienced customers (Dholakia, U. M. et al., 2004). In the same direction, Borle et al. (2007) concluded that tenure in the supplier affected the impact of MME in the business outcomes. In particular, the increase of number of promotions redeemed and number of services purchased resulting from the firm-sponsored customer satisfaction survey was lower among experienced customers

than among novice customers. They argued that tenure was indicative of customer experience and experienced customers are less likely to gain additional useful information from the survey, or to form measurement-induced judgments. In contrast, novice customers are likely to have uncrystallized opinions regarding the firm, and the survey should impact them to a greater degree (Sharad Borle et al., 2007).

Thus, consistent with the literature of MME supported on inference-based explanation, this thesis also expects that the changes in the business outcomes resulting from the MME of firm-sponsored customer satisfaction survey will be stronger among clients with less experience with the Utility than among clients with more experience with Utility (since this last group will have more solid inferences about the company that justify their decision to continue with the company). To operationalize the division, it was followed the methodology by Dholakia et al. (2004), using a median split on customer tenure to classify customers as "Novice" or "Experienced". Therefore, the following hypothesis will be considered:

> **Hypothesis 5.** Novice customer will present stronger MME than experienced customers resulting from firm-sponsored satisfaction survey, showing more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability.

Dholakia et al. (2004) have studied the moderating effect of MME based on customer qualitative experience, advancing the hypothesis that the type of previous experience with the firm could affect the inferences that customers make about participating in that survey and, consequently, moderate the impact in terms of business outcomes (Dholakia, U. M., 2010). For example, customers who have had prior negative experiences may infer negative reasons for the survey that are not inferred by customers who have had positive experiences. Thus, this would impact the business outcomes resulting from the MME of the firm-sponsored customer satisfaction surveys, with satisfied customers generating more positive outcomes than customers unsatisfied (Dholakia, U. M. et al., 2004). In the only known field-study performed to incorporate the study of the moderator effect of the qualitive experience of the customer with the company in terms of MME resulting from firm-sponsored customer satisfaction survey, Dholakia et al. (2004) compared high and low satisfaction test groups. In order to segment the participants, the study used the classification of "low satisfaction", "medium satisfaction" or "high satisfaction" based on their response to the overall satisfaction measure question (scale 1 to 10). Participants responding 1, 2, or 3 on the 10-point scale were classified as "low," those responding 4, 5, 6, or 7 were classified as "medium" and those responding 8, 9, or 10 were

classified as "high" in satisfaction. The study found that all groups presented positive business outcomes when compared to control group (not received the firm-sponsored customer satisfaction survey), measured in terms of annualized frequency of service use, annualized purchase amount, number of services purchased per visit and coupon redemption. However, the amplitude of the MME impact was lower for the low satisfaction customer group compared to the high satisfaction group, supporting the inference-based explanation. This thesis aims to respond to Dholakia (Dholakia, U. M., 2010) challenge and to validate the hypothesis that the previous qualitative experience of the customer with the company moderated the MME and different degrees of expressed satisfaction will be translated in different degrees of impact in the business outcomes. In particular, in the context of firm-sponsored customer satisfaction surveys, customers with more satisfying previous experiences ("high satisfaction customers") will have more positive inferences about the company and more positive business outcomes than customers with less satisfying experiences ("low satisfaction customers"). Therefore, the following hypothesis will be considered:

> **Hypothesis 6.** "High satisfaction customers" will present stronger MME than "low satisfaction customers" resulting from firm-sponsored satisfaction survey, showing more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability.

3.6. Conceptual Model

A conceptual framework for studying MME in firm-sponsored customer satisfaction surveys is developed using marketing theory merged with construction concepts (Adom et al., 2018; Bowden, 2009; Bryman & Bell, E., 2015; Elangovan & Rajendran, 2015). The framework aims to act as a "guide book" for determining how empirical data from the research experiment fits marketing and management theory. To this end, and adapting the theoretical framework of Self-Generated Validity (Feldman & Lynch, 1988), the MME on firm-sponsored customer satisfaction surveys is modelled as an inference of the customer towards the action of the company from sending the survey to the recognition of the effort of the customer answering to the survey. Thus, the MME effect is subdivided in "survey reception" (effect of firm-sponsored customer satisfaction survey when received but not replied by the customer), "survey participation" (effect of firm-sponsored customer satisfaction survey when received and replied by customer without any acknowledgement of the feedback effort by the company) and "thanking survey participation" (effect of firm-sponsored customer satisfaction survey when received and replied by customer and followed by acknowledgement of the feedback effort by

the company). As explained in the development of the hypothesis, the effect is modelled in terms of business outcomes measured according to the information made available by the Utility in terms of defection, repurchase, complaints and profitability. Tenure with the company and satisfaction level from last transaction are moderators of the effect. The conceptual framework is presented below:

Figure 1. Conceptual Framework
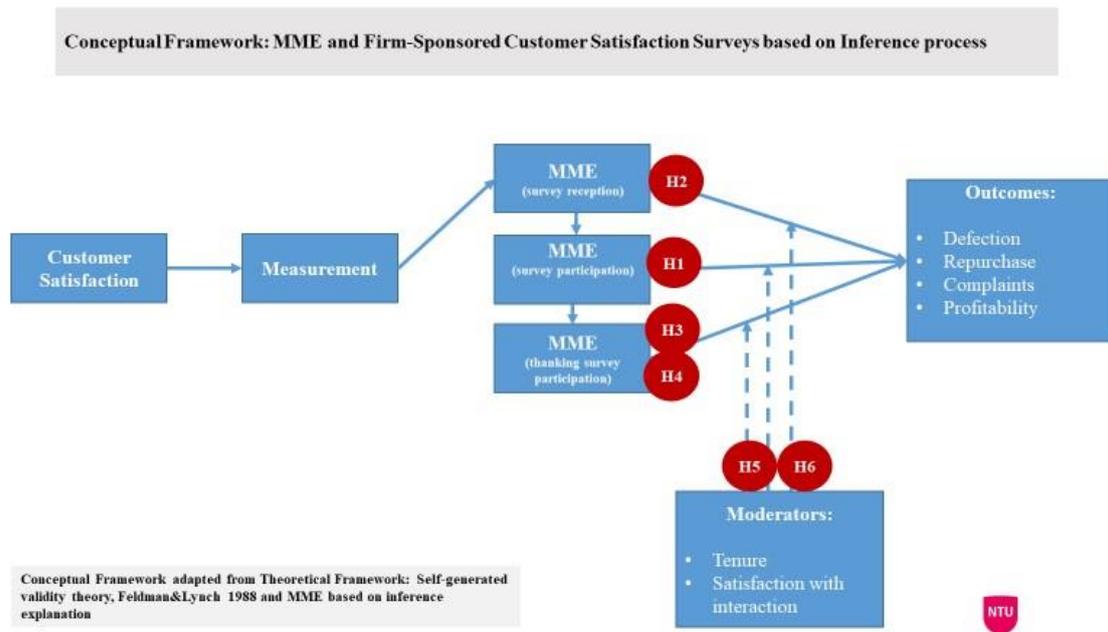
Considering the conceptual framework, research objective, hypothesis and expected outcomes from the research design, it is possible to present a summary (**Table 1**) that will guide the next chapters of this research:

Table 1 – Summary of research plan

Research Objective	Hypothesis	Outcome
RO1- To determine the extent to which firm-sponsored satisfaction surveys have a positive effect or not on business outcomes.	H1; H2; H3; H4	Hypotheses validation through Experimental Design
RO2 – To assess the extent to which the degree of tenure with the company and satisfaction with last transaction may affect the impact of firm-sponsored satisfaction surveys on business outcomes.	H5; H6	Hypotheses validation through Experimental Design
RO3 - To contribute for a better cost/benefit analysis on deciding to carry out firm-sponsored customer satisfaction surveys.	n.a.	Discussion of results and recommendations

RO4 – To present recommendations in order to maximise the value creation resulting from the use of firm-sponsored customer satisfaction surveys platform.	n.a.	Discussion of results and recommendations

CHAPTER 4 - RESEARCH METHODOLOGY

4.1. Introduction

Previous chapters have set up the research context for this thesis, the objectives of which are: 1) To determine the extent to which firm-sponsored satisfaction surveys have a positive effect or not on business outcomes; 2) To assess the extent to which the degree of tenure with the company and satisfaction with last transaction may affect the impact of firm-sponsored satisfaction surveys on business outcomes; 3) To contribute for a better cost/benefit analysis on deciding to carry out firm-sponsored customer satisfaction surveys; 4) To present recommendations in order to maximise the value creation resulting from the use of firm-sponsored customer satisfaction surveys platform. This chapter connects the previous context with the discussion about the theoretical foundations and the methodological issues to design a reliable and valid fieldwork plan to achieve those research goals. This includes a discussion of research philosophies, methodological considerations, research approach, data collection techniques and data analysis techniques.

This thesis aims to investigate if firm-sponsored customer satisfaction surveys have positive effect on business outcome. Following the MME conclusions and findings mentioned in the Literature Review, this thesis investigates the potential consequences in terms of business outcomes of consumers to be exposed and participate in firm-sponsored customer satisfaction surveys in a field study situation in the context of a Utility company in Portugal. Thus, there is a particular focus in determining and quantifying the impact of the survey on the business outcomes selected for the study which influences the options made in terms of research methodology and research methods. As the conceptual framework shows in the previous chapter, there is a set of hypotheses emerging from the MME literature that need to be confirmed or rejected for the purposes of this present study. From a managerial perspective, also as mentioned previously, it also important to the understand if the firm-sponsored customer satisfaction surveys are only a marketing costs or if they influence business outcomes creating value for the company that needs to be considered in a cost-benefit analysis. Therefore, both theoretical testing and practical investigating are conducted to fulfil the research aim and objectives.

This chapter starts by addressing the methodological context in which this research is being done and the different factors that determined that context, from the theories and existing

knowledge, to the assumptions about how research should be conducted (epistemological considerations) and how the nature of social phenomena influences the research process (ontological considerations). Next, the proposed research design, method, sampling, analysis and quality criteria used to assess research are presented, followed by a preliminary reflection on the limitations of the research (Montgomery, 2013). After that, the ethical considerations of both process and purpose of the research are discussed (Anderson, L. et al., 2015).

4.2. Research Philosophy

Research philosophy is a cornerstone of any doctoral study and it reveals the researcher's understanding of how he perceives the world (ontology) and how to obtain the knowledge for understanding the world (epistemology). This then influences the way the researcher designs and conduct their research work (Hughes & Sharrock, 2016). Different positionings from the researcher in terms of ontology and epistemology result in different approaches and research strategies to fulfil their research aims and objectives (Bryman & Bell, E., 2015).

Ontology

Ontology is the study of being and it concerns to the nature of reality. Thus, in the research context, it requires that the researcher takes a position with regards to the realities that are the object of the research (Simons, 2009). In social studies, ontology requires that the researcher takes position whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors (Buchanan & Bryman, 2007; Malhotra et al., 2017). There is a continuum here, with objectivism at one pole and subjectivism at the other. On one hand, objectivism considers that reality exists externally to social actors, meaning that reality is universal and out of the control of any individual (Burrell & Morgan, G., 1979; Miller & Tsang, 2010). Therefore, objectivists believe that social phenomena are independent of consciousness and have an existence separate from people's thoughts about them. An objectivist holds that the concepts people use when talking about management or an organization can be universalised and generalised as part of an objective and external reality (Bryman & Bell, E., 2015). Its antithesis, subjectivism, considers social phenomena as the creations of individual perceptions and experiences through the process of social interactions. The reality perceived by one individual in an organisation is separated from the situations other social actors believe they are at; that is, there is no universal reality (Bryman & Bell, E., 2015). Therefore, subjectivists believe that social phenomena are subjective, mutable

and the understanding of those phenomena is constantly evolving as a result of individual experiences. In fact, subjectivists are interested in different narratives that can help to account for the different social realities of different social actors (McCain, 2016).

Epistemology

Epistemology investigates the origin, nature, methods and limits of human knowledge. Thus, epistemology can be defined as the theory of knowledge underlying the research and thereby the methods adopted, studying what constitutes valid knowledge and how can we obtain it (Bryman & Bell, E., 2015; Stroll & Martinich, 2013). As with ontology, epistemology is represented by a continuum, the extremes of which are positivism and interpretivism (Burrell & Morgan, G., 1979; McCain, 2016; Porpora, 2015). As it is explained in this section, this research adopts a positivist position.

Positivism postulates that reality exists externally and it can be measured using objective methods typical of the natural sciences. In social sciences, the researcher should test theories against observations of social phenomena, which need to be quantified and analysed using quantitative methods (Harrison & Reilly, 2011). Positivism is associated with objectivism in regards that reality exists independent of human observations or knowledge and individuals are only following the natural laws when acting (Stockemer, 2019). A research takes a positivist approach if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing and the drawing of inferences about a phenomenon from the sample to a stated population (Bryman & Bell, E., 2015). The main benefits associated to positivism result from the fact that theories are tested and validated in a way that results can be generalised to a larger population, since data collection and analysis are structured using quantitative methods. Thus, positivism research is associated with high reliability resulting from the use of mathematical tools and statistical techniques (Stockemer, 2019). However, positivism is target of different critics concerning the knowledge that it generates. Positivism can predict only the average behaviour and not the behaviour of individuals, and in the business field, understanding particularities can be significant. In addition, those who argue against positivism stress the importance of language, culture and history in the shaping of interpretations and experiences of organizational and social worlds (Bryman & Bell, E., 2015). Another additional two critics are that positivism is limited to what is observable and that it focus on hypothesis testing rather than theory generating (Burrell & Morgan, G., 1979; Gaeta, 2012).

Interpretivism advocates that social sciences require a different approach from natural sciences, capturing the subjective meaning of social action, because reality is multiple and depends upon individual situations and understandings of meanings (Bryman & Bell, E., 2015; Weber, 1947). Interpretivism is associated with subjectivism in that if reality exists only when humans

perceive it, the best way of learning it is to collect data from those who have deep insights into the reality or have experienced that reality (Malhotra et al., 2017). Interpretivists avoid rigid research structures and adopt more flexible research settings. They try to make sense of what is perceived, by the research subjects, as part of their reality (Clarke, 2009). An interpretivist researcher needs to have prior insights of the research context but remains open to new knowledge with the assistance from informants. Thus, the goal of an interpretivist research is to understand the meanings in human behaviour rather than testing hypotheses of relationships between causes and effects (Malhotra et al., 2017). The main benefits associated to interpretivism result from rich understandings and interpretations of social phenomena and social organization, since it allows consideration of different perspectives of different groups of people (Bryman & Bell, E., 2015). In addition, interpretivism allows to go beyond observation which is very important when it comes to human behaviour, giving the impact of the observation itself in the change of the behaviour (Williams, M., 2000). However, interpretivism is target of different critics concerning the knowledge that it generates. Since interpretivism employs qualitative data collection, it lacks the ability to generalize these findings to larger populations (Malhotra et al., 2017). This is also related to the critics in terms of reliability because outcomes are based upon data that have been deliberately altered by people (Clarke, 2009).

Somewhere between the two extremes of positivism and interpretivism is realism which in general terms considers that natural and social sciences can and should apply the same approach to data collection and explanation, supporting the view that reality can be separated from its description (Bhaskar, 2011; Porpora, 2015). In particular, critical realism focuses on offering a robust research framework in order to gain a better understanding of the meanings provided by a variety of research methods (Downward et al., 2002). It offers attractive solutions to the research problems associated with both positivist and interpretivist philosophies of science, particularly in areas focusing on social change (Bhaskar, 2011). Critical realists insist on the possibility of employing rival theories to develop their understanding of reality (Archer et al., 2016). Thus, between the rival theories, the one which can explain a wider range of phenomena has higher explanatory power, or the rival theories need the assistance of that more fundamental theory to generate the largest explanatory power (Porpora, 2015). Thus, under the label of critical realism it is possible to find a high heterogeneity of positions (Easton, 2010).

In general, selection of the study approach should be based on the research questions, the nature of the study and the beliefs of the researcher (Bryman & Bell, E., 2015). Considering the research scope and Research Objectives stated above, it was considered adequate to assume an objectivist and positivist position, using formal propositions, quantifiable measures of variables,

hypothesis testing and the drawing of inferences about a phenomenon from a sample of observations (Malhotra et al., 2017; Patomaki & Wight, 2000). In addition, as mentioned in the Literature Review section, this study follows several other positivist studies on this topic, building up on those findings and expanding to the specific setting of this study. As consequence, in order to answer the Research Objectives, this study is supported in the development of a conceptual framework and testable hypotheses emerging from previous literature. In this sense, this study focus is the relationship between the firm-sponsored customer satisfaction surveys (independent variable) and the business outcomes (dependent variables). To achieve that purpose, this study has adopted a quantitative research based on an experimental design that will be expanded in the next sections.

4.3. Research Approach

The considerations on the research positioning from an epistemology and an ontology perspectives are consistent with a functionalist paradigm (Burrell & Morgan, G., 1979), which guides the approach to the "research problem", including how research should be done and how the results should be interpreted (Bryman & Bell, E., 2015).

Focusing on the contribution of this study to the common body of knowledge, it is important to reflect on how this research can create valuable knowledge and anticipate how much the relevant stakeholders will appreciate that knowledge (Hunt, 2010; Janiszewski et al., 2016). Thus, considering the Research Objectives, it is in this context that the research project will follow a deductive and a testing approach to the relationship between theory and research (French, S., 2009; Janiszewski et al., 2016; Lynch et al., 2012; Monsen et al., 2009; Popper, 1959; Svensson, 2009; Woiceshyn & Daellenbach, 2018). Following a deductive approach it is possible to aim for the creation of conceptual knowledge about construct-to-construct relationships (deductive-conceptual approach) or to the creation of substantive knowledge about construct-to-phenomena relationships (deductive-substantive approach). In addition, this position is aligned with the previous research on this field, thus it will be possible to compare and contrast the results with those of other, prior, research studies.

Despite the theoretical contribution that this research is expected to have, taking in consideration the Research Objectives, this project will follow a deductive-substantive approach because the contribution is primarily aimed to demonstrate and explain the MME and its substantive impact in real world consumers' behaviours (Lynch et al., 2012). At its core, this research will follow the deduction that combines substance and concepts to form hypothesis that

need to be tested following appropriate methods, explaining substantive phenomena using theoretic constructs and reconciling theoretical conflicts or gaps founded in literature (Queirós de Almeida, 2017). In addition, this research will have also a "theory-based interventions to influence substantive systems" element (Calder et al., 1981; Lynch et al., 2012), since besides explaining the phenomena, this research has the goal to test ways that can be used by managers to influence real world behaviours (Lynch et al., 2012), in this case, firm-sponsored customer satisfaction surveys, in order to create value (Kumar & Reinartz, W., 2016).

4.4. Research Strategy and Method

As developed in the previous section, guided by the Research Objectives, this research project intends to contribute to the common body of knowledge. This goal is achieved through the testing of the hypothesis and submitting them to empirical scrutiny in order to discuss the results in the context of previous MME research on firm-sponsored customer satisfaction surveys. This allows to assess how questioning customers about their satisfaction post-service changes respondents' behaviours and how it can create value for the company performing those surveys. The research project can be classified as a conclusive and causal research (Huertas-Garcia & Consolación-Segura, 2009; Malhotra et al., 2017), in which independent variables (around the administration of the post-service satisfaction survey) are manipulated in a controlled environment in order to infer causality. The main method of causal research is experimentation (Ryals & Wilson, H., 2005). Thus, the deductive approach is supported by a quantitative research strategy, adopting a functionalist research paradigm (Burrell & Morgan, G., 1979) and an experimental design (Bryman & Bell, E., 2015). The literature review provided support for the overall research strategy, in terms of conducting primary research in the setting of a field experiment with randomised groups: the test groups and the control group (Dholakia, U. M., 2010; Flynn et al., 2017)..

After assuming the research strategy of this project, it is important to state and to clarify the design and research methods to be used. The research design is critical for defining the research process and it involves important choices on the collection and analysis of data. It has also important implications for the assessment of business research quality, which is usually assessed through three main criteria: validity, replication and reliability (Bryman & Bell, E., 2015). Also, the research gives attention to the main preoccupations of quantitative research: measurement, causality, generalisation and replication (Bryman & Bell, E., 2015).

The core research is based in setting a field experiment with randomised groups: the control group (that will not receive the firm-sponsored customer satisfaction survey), and several test

groups that will allow to test the different hypothesis above mentioned. The manipulation of the independent variable (receive and not reply to survey; receive and reply to the survey with no follow-up "thank you" message; receive, reply to the survey, followed by a "thank you" message by e-mail or phone) allows to assess the impact on the dependent variables (defection, repurchase, complaints and profitability). The critical aspect is the randomised distribution of the subjects in the groups in order to stablish causality for the manipulation of the independent variables. Thus, the study follows an experimental design and, besides the random assignment to the different groups, it involves a pre-testing of groups, and the post-testing observation. The observed differences (or the absence) between the groups allows to assess the impact of the experiment (Bryman & Bell, E., 2015).

A two-phase pre-test/post-test experimental design (Malhotra et al., 2017) is used. This design has two important advantages over the post-test-only design: i) it permits error variance caused by consistent individual differences to be removed, thereby increasing statistical power; and ii) it permits to minimise the groups' differences during the experience, increasing the internal validity of the design and the conclusions about causal relations.

4.5. Research Design
4.5.1. Data Collection Instruments and Process

The experiment in this research project took place using the Utility's customer feedback platform, which is used to assess customer satisfaction of a client after completion of any service requested by the same client. Details of what constitutes a service are given towards the end of the following section. The completion of the service is determined according to the rules of the CRM system of the Utility and it means that the request of the client was answered by the Utility. Thus, post service completion, clients from the Utility were randomly assigned to either test or control groups, using Excel function based on the list of the relevant contacts occurred during the 2 days experiment described below.

Step 1

The experiment was set up in coordination with the Utility's Customer Service team, using a voice of customer software platform (provided by Medallia, Inc., hereinafter referred to as VoC Platform). In general, the VoC Platform assures that after any contact with a client, a customer satisfaction survey will be triggered and sent to the client in the following 24-48 hours. For the experiment, this operation rule was adapted to allow the different treatment among test and control groups. The customer satisfaction survey can be sent in two different forms: via e-mail or IVR

(Interactive Voice Response). In the e-mail version, the Utility sends a message to the Client acknowledging the contact and asking feedback through the satisfaction survey (**Annex 3**). The first question is present in the email ("Based on your recent interaction with our call centre, how likely are you to recommend [COMPANY_NAME] to a friend, family member or colleague?"), with a scale of 0-10 (0 – Not likely; 10 – Very likely). If the Client answers to this question, immediately a new web page is open with a full satisfaction survey, with 10 additional questions, and one space for "Other comments". In the IVR version, The Company will try to reach the Client through their phone contact, using a shorter version of the e-mail survey (only questions 1, 3, 7 and 11 - **Annex 3**). The trigger to decide between the e-mail version or the IVR version is the existence or not of a valid e-mail contact of the client, i.e., if in the CRM there is a valid e-mail contact, the e-mail version survey is the default option. Only if the Client does not have a valid e-mail contact, will the company send IVR version. For the purpose of this Experiment, only the e-mail customer satisfaction survey was used, so those without an email contact were excluded from the experiment.

Utility clients are divided into two major segments: B2C (business-to-consumer, services directly between the Utility and its residential consumers) and B2B (Business-to-business refers to business that is conducted between the Utility and other businesses). For the purpose of this Experiment, only B2C clients were included because B2B clients are not included in the VoC Platform by the Utility

As mentioned in section 2.2. and Annex 1, between 2020 and 2021 the Utility's product portfolio for the business-to-consumer (B2C) segment included: i) electricity contract; ii) natural gas contract, iii) invoice insurance; iv) health insurance, v) appliances repair service; vi) solar panels; vii) e-mobility.

In terms of channels, the Company uses physical stores, contact centre (inbound phone contacts), telemarketing (outbound phone contacts), website, door-to-door sales force. For the purpose of this Experiment and due to operational restrictions, it was only the interactions that occurred through physical stores and the contact centre were considered eligible (which represented 85% of all contacts occurred during the experiment). The exclusion was performed before the randomization of the relevant contacts between test and control groups.

In summary, over 2 days (14-15 January 2020), all interactions between clients and the Utility through physical stores and contact centre were included in the Experiment. The only filter applied was the existence of a valid e-mail contact of the client (given the purpose of studying the effects of the reception of the e-mail). Thus, clients without e-mail were not considered eligible for the purpose of this experiment. After this filter, the eligible interactions were randomized

using Excel function to allocate the clients either to the control group (CG) or the test groups. Customers assigned to CG were identified as not receiving the customer satisfaction survey and to be excluded from receiving any customer satisfaction survey during a subsequent twelve months period. Except for this exclusion, the CG customers received the same treatment as any other clients of the Utility, in particular commercial campaigns information and newsletters. All other clients not included in CG were identified as receiving the e-mail customer satisfaction survey (**Annex 3**) within 24-48 hours and clients would have seven days to reply to the survey (rule defined by Utility). After that period, the surveys would be inactive and clients would not be able to answer to them. Clients that had opened the e-mail but had not answered to survey were included in test group 1 (TG1). Clients that had opened the email and had answered the survey were included in test group 2 (TG2). All TG1 clients were excluded from receiving any customer satisfaction survey during a subsequent 12 months period. As described in Step 2 below, TG2 Clients were divided in different sub-groups and subject to additional testing. Except for the respective testing treatment, all TG2 Clients received the same treatment as any other clients of the Utility, in particular in particular commercial campaigns information and newsletters.

Step 2

The clients that had opened the email and had answered the survey (TG2) were randomly assigned using Excel function to 3 different test sub-groups: TG3 (clients that did not receive any additional contact from the Utility following completion of the customer survey); TG4 (clients that received an additional e-mail from the Utility acknowledging their participation in the satisfaction survey - hereinafter designated as "Thank You e-mail", **Annex 4**); TG5 (clients that received a phone contact call from the Utility acknowledging the participation in the satisfaction survey - hereinafter designated as "Thank You phone call", **Annex 4**).

All clients involved in the Experiment were tracked through the Utility's CRM system according to their experiment status group, using the clients' identification number (account number uniquely allocated by the Utility when a client contracts the first service). This CRM information will allow performance of the two-phase pre-test/post-test experimental design as well to measure the impact of completing the survey on the dependent variables. Key customer performance metrics (dependent variables) were collected from the Utility's CRM database at the beginning of the study (referred to as baseline measures) and at the end of a twelve-month period:

   a) Defection - whenever the client defected from the electricity contract during the twelve-month period of the study. A client is defined as having defected from the Utility if the energy contract is terminated at any time during the twelve-month period of the study. As mentioned before, according to Portuguese Law, electricity consumers can exercise their

right to "choose" the electricity supplier at any time, terminating the existing contract without any penalty or disruption of physical supply of electricity (the switching between different suppliers is a "seamless" process for the customer).

b) Repurchase - whenever the client subscribed any other service during the twelve-month period of the study, considering the portfolio of products made available by the Utility: natural gas contract; invoice insurance; health insurance; appliances repair service; solar panels; e-mobility. Thus, this variable is given by total the number of services that the client has contracted during the period of the study.

c) Complaints - whenever the client presented a complaint to the Utility. A client is defined to have presented a complaint if such request is registered in the CRM any time during the twelve-month period of the study and it is registered as the total number of complaints. Thus, this variable is given by total the number of complaints that the client has submitted during the period of the study (if any).

d) Profitability – this corresponds to the client contribution margin to the Utility. This variable is computed using a standard algorithm based on well-accepted activity-based cost accounting practices defined by the Utility and normalized (for confidentiality reasons). With this algorithm, the client's monthly contribution is computed as the difference between total revenues - energy bill and other services revenues - and total costs - servicing costs and transaction costs. Thus, for each client that participated in this study, the Utility has provided a normalized and anonymised value of profitability in the beginning of the study and then an update of the same value twelve months later.

Following the conclusion of the experiment, all clients involved in the experiment were withheld from any direct marketing activity for a period of 12 months. This was done to prevent specific marketing activities or programs from confounding the results of the study. The research was performed under a research agreement between the researcher and the Utility (**Annex 5**). With full compliance of applicable legal framework, in particular General Data Protection Regulation (EU 2016/679), the Utility's internal procedures and ethical research principles, the data was collected from Utility's customer systems and the customer surveys were administered directly by the Utility. The information was anonymised by the Utility before the transference of the data files to the researcher, meaning that all personal data was excluded from the data files used by the researcher. The Utility did not offer customers any rewards or financial incentives for responding to the survey.

4.5.2. Time Horizon

Initially, this study was designed to have a longitudinal design (Bryman & Bell, E., 2015). In fact, one of the main benefits of a longitudinal study is that it allows the detection of developments or changes in the characteristics of the target population at both the group and the individual levels, going beyond a single moment in time (cross-sectional study), providing stronger support to establish cause-and-effect relationships than a cross-sectional study (Ployhart & Ward, 2011).

Similarly to the research methodology used by Dholakia&Morwitz (2002), this research project will measure the results of the experiment through a one-year period, reinforcing the analysis of the variables across time and reducing bias concerns about causal relationship (Conway & Lance, 2010; Ployhart & Vandenberg, 2010; Ployhart & Ward, 2011). Longitudinal research tends to have smaller residual or error terms relative to cross-sectional designs (Ployhart & Ward, 2011). In experimental designs, the smaller residual error reduces the amount of unexplained variance and hence it increases the F test results, all else equal. It is also worth emphasizing that more repeated measurements increase reliability (Willett, 1989). However, due to restriction imposed later by the Utility, in the present Experiment it was only possible to use two observations which makes this study to have a limited longitudinal design and be closer to a cross-section design (Chen, G. et al., 2011; Locascio & Atri, 2011).

4.5.3. Sampling Design

Taking in consideration the experimental design of this research project, sampling plays an important role in order to allow to infer relevant conclusions between the experiment and control groups (Cassady, Ralph, 1945; Semon et al., 1959; Tarka, 2017). Attending to the Research Objectives and research experiment design, the random sampling was considered to allocate eligible clients to the control group (CG) and all test groups (TG1, TG2, TG3, TG4 and TG5). In order to determine the equivalence of all Groups (CG, TG1, TG2, TG3, TG4 and TG5), in the pre-test, the following variables were considered: Repurchase/number of products (Dholakia, U. M. et al., 2004); Complaints (Dholakia, U. M. et al., 2004), Profitability (Dholakia, U. M. et al., 2004).

4.5.4. Sample Size

In this experiment, the sample size was given by the operational limitation of having only 2 days of activity to perform the Experiment. Thus, considering the average number of contacts of

the Utility, it has been estimated that between 350-400 would be a reasonable minimum number of each group (Tabachnick & Fidell, 2020). Applying the filters mentioned before, the initial list of eligible contacts for the Experiment was 2.232. Thus, for the first operation to separate between the contacts that would not receive the survey (CG) it was consider the number of 400. Then, using Excel randomization function, two list were created: CG (400), remaining contacts (1.832) would receive the customer satisfaction survey. From all surveys sent, it was possible to confirm the reception of 1.659, meaning that 173 clients were excluded from the Experiment. The Utility received 1.342 answers, meaning that the reply rate was 81%, considered a comfortable result to address the non-response bias (Dholakia, U. M. et al., 2004; Morwitz, V. G. et al., 1993; Sharad Borle et al., 2007). The 378 clients that received but did not reply were included in TG1. All the other (1.342 clients) were included in TG2. Then, using again the Excel randomization function, the list of clients that replied to the survey (TG2) were distributed between even groups: 671 clients in TG3 (clients that would not receive any "Thank you" message from the Utility) and 671 clients that would receive the "Thank you" message. Again, using Excel randomization function, the last group was then divided in 335 clients in TG4 (e-mail "Thank you" message) and 336 clients in TG5 (phone "Thank you" message). The pre-test analysis was performed with these groups.

For the post-test analysis, it was necessary to perform small adjustments in order to reflect the design of the experiment and formulated hypothesis. Considering the clients contacted by e-mail (TG4), it was not possible to confirm the reception of the e-mail by 3 clients and those clients were excluded from TG4, meaning that 332 were considered valid. Considering clients contacted by phone (TG5), it was not possible to contact 6 and those clients were excluded from TG5.

Table 2 - Composition of Control and Test Groups

Group	Characterization	Sample Size
CG	No survey	400
	Surveys sent	1832
	Surveys not received (no confirmation of opening)	173
	Surveys received	1659 (94,4%)
TG1	Survey received, no answer	378
TG2	Survey received, answer	1.342
TG3	No "Thank You" message	671

	Thank you (e-mail) - sent	335
	Thank you (e-mail) not received (no confirmation of opening)	3
TG4	Thank you (e-mail) - received	332
	Thank you (phone) - attempt	336
	Thank you (phone) – contact not possible	6
TG5	Thank you (phone) - success	330

4.5.5. Methods of Analysis

Data preparation

Before analysis the gathered data was prepared. The Utility provided the data in Excel files. The data was extracted from VoC Platform and CRM system. Before the date was made available to research, some important operations were performed by the Utility:

- The information about participants was anonymized, not allowing the research to have access to any personal data that could allow to identify individual customers.
- Considering the commercial sensitiveness nature of the information, all monetary values were "masked", in particular the values concerning "profitability" keeping the proportionality of the differences between the original values and the "masked values".

The dataset was checked for missing data and outliers and no gap was identified. The data was then analyzed using statistical software SAS and R.

Statistical analysis

Considering the different alternatives of statistical methods of experiment designs (Box et al., 2005; Montgomery, 2013; Ramsey & Schafer, 2013), next it is identified the statistic tests used to validate the hypotheses of the present study.

It is important to note that the selection of the methods of statistical analysis need to be adequate to the nature and characteristics of the data (Tabachnick & Fidell, 2020). Initially, this study intended to test the differences among control group and test groups using MANOVA (for continuous dependent variables, Repurchase, Complaints and Profitability) and Chi-square (for categorical dependent variable, Defection). For the hypothesis testing concerning moderators (Tenure and Satisfaction), the study intended to use MANCOVA. However, when testing for normality as an assumption of MANOVA and MANCOVA, it was concluded that the data did not have a normal distribution (**Annex 6**). Next, the researcher tried to transform the information using log transformation – **Annex 7** (Tabachnick & Fidell, 2020), but the results showed that the assumption of normality was not verified and that it would be necessary to use a non-parametric analysis. Thus, it was necessary to adapt the statistical analysis to the nature and characteristics of the data and the following decision were taken to proceed to hypothesis testing.

Pre-test and Post-test of dependent variables repurchase, complaints and profitability

For the Pre-test and Post-test of dependent variables repurchase, complaints and profitability, it was decided to use the Kruskal-Wallis H test, since it is a rank-based nonparametric test that can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable (Tabachnick & Fidell, 2020). Again, as a first step, it was necessary to test the assumptions of Kruskal-Wallis H test. First assumption is that the dependent variables should be measured at the ordinal or continuous level. The assumption is verified for repurchase, complaints and profitability. Second assumption is that the independent variables should consist of two or more categorical, independent groups. The assumption is also met in this Experiment, since in each test the independent variable assumes two categorical and independent groups (example, receive and not receive survey). Third assumption requires independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves. Again, the assumption is met since in each test, the participants are only in one of the groups. Finally, although Kruskal-Wallis H test does not require normal distribution, the fourth assumption requires that the distribution in each group have the same shape (which also means the same variability). As shown in **Annex 6,** this assumption is also met in the experiment.

To determine whether any of the differences between the group results are statistically significant, the   p-value of results will be compared to 1%, 5% and 10% significance level to assess the null hypothesis (Fisher, 1992). The null hypothesis states that the population results are all equal. If P-value ≤ 0,1 it means that the differences are statistically significant, thus the null hypothesis is rejected and it will be concluded that group results are not equal.

If P-value > 0,1 it means that the differences between the groups results are not statistically significant, thus there is not enough evidence to reject the null hypothesis that the group results are all equal.

To compute the effect size for Kruskal-Wallis test as the eta squared based on the H-statistic: $eta2[H] = (H - k + 1)/(n - k)$; where H is the value obtained in the Kruskal-Wallis test; k is the number of groups; n is the total number of observations (Tomczak, M. & Tomczak, E., 2014). The eta-squared estimate assumes values from 0 to 1 and multiplied by 100 indicates the percentage of variance in the dependent variable explained by the independent variable. The interpretation values commonly in published literature (Tomczak, M. & Tomczak, E., 2014) are: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Post-test of Dependent Variable Defection

Considering the categorical nature of the independent variables and of the dependent variable defection, for the post-test analysis of the impact of the manipulation of independent variables on the dependent variable defection it was decided to follow the Chi-Square test that is adequate to discover if there is a relationship between two categorical variables (Tabachnick & Fidell, 2020). The two assumptions were met:

- The two variables should be measured at an ordinal or nominal level (i.e., categorical data). This is met by the different independent variables and the dependent variable Defection (categorical data).
- The two variables should consist of two or more categorical, independent groups. Again, the assumption is met in the study, because the comparison between groups assures thar a participant of one group is not included in the other group used for the test.

To determine whether any of the differences between the groups results are statistically significant, the p-value of results will be compared to 1%, 5% and 10% significance level to assess the null hypothesis (Fisher, 1992). The null hypothesis of the Chi-Square test is that no relationship exists on the categorical variables in the population, they are independent. If P-value ≤ 0,1 it means the variables are not independent of each other and that there is a statistical relationship between the categorical variables. If P-value > 0,1 it means that there is not enough evidence to reject the null that states that there is no relationship between the categorical variables.

To compute the effect size for Chi-Square test it was used Cramer's V approach, where the effect is calculated as where df* = min(r − 1, c − 1) and r = the number of rows and c = the number of columns in the contingency table. The Cohen test guidelines are V√df* = .1 represents a small effect, = .3 represents a medium effect and = .5 represents a large effect (Tomczak, M. & Tomczak, E., 2014).

Testing concerning moderators (Tenure and Satisfaction)

Moderation analysis in the behavioral sciences involves the use of linear multiple regression analysis or causal modelling (Cohen, J. et al., 2003). To quantify the effect of a moderating variable in multiple regression analyses, regressing random variable Y on X, an additional term is added to the model. This term is the interaction between X and the proposed moderating variable (Cohen, J. et al., 2003).

As mentioned before, this research intended to use MANCOVA to study the interaction moderator effects of tenure and level of satisfaction but that was not possible given the non-parametric nature of the data (Tabachnick & Fidell, 2020). Next, it was explored other regression analysis that could be adequate to study the interaction effect of tenure and level of satisfaction concerning the direction and/or strength of the relation between dependent and independent variables, considering the above-mentioned limitations of the data.

As **Annex 8**, this study performed several attempts of using a regression approach, did not render any meaningful interaction. For defection (dichotomous categorical dependent variable) the selected method was logistic regression (Hayes, A. F. & Rockwood, 2017; Hess et al., 2014). For repurchase, complaints and profitability (continuous dependent variables) the selected method was linear regression (Fairchild & MacKinnon, 2008; Hayes, A. F. & Rockwood, 2017). However, it was not possible to use this method because the assumptions of homoscedasticity was not met and it was not possible to overcome it (Tabachnick & Fidell, 2020). Other approaches were also considered, namely to perform weighted least squares regression equation or transformation of dependent variables. However, considering the limitations of the data, it was decided to abandon this approach.

However, considering previous studies with identical limitations (Amos et al., 2008), instead of investigating directly the moderator effect from a regression analysis perspective, it was decided to try to identify potential impacts of tenure and level of satisfaction on the relationship between independent variables and dependent variables, using the methods identified above (Kruskal-Wallis and Chi-Square), creating sub-groups considering tenure ("Novice", "Experienced") and level of satisfaction ("High satisfaction", "Medium satisfaction" and "Low satisfaction". Thus, the analysis cannot be considered an investigation on the moderator effect, but it allows to identify potential impacts that later research can explore with different data settings (Amos et al., 2008). Also here, it was used the same approach in terms of the measurement of the effects size.

4.5.6. Reliability and Validity Issues

In order to evaluate the quality of this research project in the context of quantitative research with an experimental design, it is necessary to discuss its reliability, validity and replication (Bryman & Bell, E., 2015; Malhotra et al., 2017). Reliability is associated with the ability to repeat the results of the study and, in quantitative research, it is linked to the consistency of the measurements used. Validity represents the integrity of the conclusions emerging from the

study. And replication is concerned with the possibility of repeating the procedures of the study (Bryman & Bell, E., 2015).

Considering reliability, it is important to reflect on the three different dimensions it can assume in quantitative research. The first dimension, stability, is relative to the fact whether the measurement is stable over time. Given the longitudinal nature of the study, the stability test is not relevant, since the scope of the research is to identify change of behaviours across time and its correlates (Bryman & Bell, E., 2015). The second dimension is internal reliability, that is associated with the consistency of indicators that make up a scale or index. Since this research does not use scales or index, it will not be necessary to run internal reliability tests. The third dimension is inter-rater reliability and it is connected to subjective judgements that can be involved in the data collection process, which does not occur in this research project.

Since this research project is supported by a field experimental design, it is important to discuss the validity issues that can assume different perspectives. Considering the different types of experiments, it is important to mention that laboratory experiments are better for internal validity (where possible variations between respondents are known and/or can be controlled), but field experiments are better for external validity (Bryman & Bell, E., 2015). Internal validity is the extent to which a causal conclusion based on a study is warranted, defeating other rival causal explanations. The presence of a control group and the random assignment of subjects to the experimental and control group are critical to eliminate rival explanations and to eliminate threats to internal validity, such as testing, history, maturation, selection and ambiguity about the direction of causal influence (Bryman & Bell, E., 2015). A different question is related to measurement validity (Bryman & Bell, E., 2015; Nielsen & Randall, 2010) that concerns the fact of whether or not an am indicator that is considered to measure a concept really measures that concept. Given the design of this research project, it is not necessary to define specific measure to control for measurement validity.

Besides being internally valid, the research needs to be externally valid, i.e, the extent to which the results of a study can be generalised to other situations and to other people (Aronson et al., 2007; Bryman & Bell, E., 2015). There are several sources of threats to external validity (Aronson et al., 2007; Campbell, 1957; Cook & Campbell, 1979): i) interaction of selection and treatment (i.e., to what groups can the conclusions be generalised); ii) interaction of setting and treatment (i.e., how the results of the study can be applied to other settings); iii) interaction of history and treatment (i.e., how the results of the study can be applied to past and future realities); iv) interaction effects of pre-testing (i.e., how can the results of a study with pre-test can be generalised to groups without pre-test); v) reactive effects of experimental arrangements (i.e. how the awareness of participation in the experiment affects the generalisation of

conclusions to reality). The three first threats to external validity are considered to be relevant to the present research project and they are considered in the perceived limitations of the research. The interaction effects of pre-testing are not relevant because the pre-test that was performed was supported by secondary data from Utility's CRM, without direct interaction with clients participating in the study. Since the experiment was run within the existing Utility's customer feedback platform, legal framework and clients' data authorisations, no threats from reactive effects of experimental arrangements were expected.

Additionally, reflecting on the ecological validity that is associated with the concern that the methods, materials and setting of the study are close to the real world situation that is being studied (Bryman & Bell, E., 2015), this is an issue that affects more laboratory experiments than field experiments such as this research project. In fact, besides using the existing Utility's customer feedback platform, this study will use randomisation in the distribution of clients between the experiment and control groups, which is considered an important reinforcement measure of the ecological validity of an experiment design study (Bryman & Bell, E., 2015).

The last dimension to assess the quality of the research is replication (Bryman & Bell, E., 2015), in the sense of assuring the conditions for future researchers to replicate the study in identical setting or in different contextual setting (for example, in a different company). This is an important concern of the present research project and this thesis intends to clearly lay out the design and procedures of the experiment in order to allow and even to promote its replication by future research on this topic.

4.5.7. Limitations to Research Design

Discussing specific perceived limitations of this research, it seems important to reflect on the three threats to external validity mentioned above. The first limitation results from the interaction of selection and treatment, since this research will be supported by Utility's CRM, which gives limited access to information about the clients in order to assure that the conclusions of the study can be generalised to other groups. Given the design of the experience, which was integrated in the normal operations of the Utility, "ex-ante" it is not possible to assure to what extent the conclusions could be generalised to other groups. Only "ex-post" it was possible to determine the statistical relevance of the results using the common accepted methods (Fisher, 1992). In any case, the size of the experimental and control groups and the randomization assignment of the clients to those groups give confidence that the conclusions are robust enough to generalise the results to the context of the Utility.

Regarding the external validity threat emerging from the interaction of setting and treatment, it is assumed that a structural limitation resulting from the research design exists. In fact, it is necessary to take into account that the results of the study can be influenced by economic, political and cultural factors (Dholakia, U. M., 2010; Doorn, van et al., 2013; Haan, De et al., 2015; Morgan, N. A. & Rego, 2006). In the case of this study, it is also necessary to take in consideration the impact of Covid-19. Therefore, it is not possible to generalize the result of this study to other settings. However, this is a limitation that can stimulate further research on this topic in different settings. In fact, despite this limitation to external validity, it is believed that the results can reinforce the interest of exploring it beyond the specific context of the primary research (the Utility in Portugal). It is admitted that the findings of this research can be relevant for other utilities, in particular in the EU, and even for other companies, regardless of the industry, for which customer satisfaction is a value-creation driver.

Finally, concerning the external validity related to the interaction of history and treatment, it also recognised that the research cannot assure its valid application of the findings to past and future realities. This is a common limitation of quantitative and experimental research and the way to overcome this limitation is trough replication (Bryman & Bell, E., 2015). As stated before, this justifies a special focus on assuring that the procedures of this research are explicit and suitable to replication. Thus, it is expected that future research can replicate this setting across time in order to reinforce the external validity of this study.

4.5.8. Ethical Considerations

The role of ethical considerations in business research has been subjected to intense debate and its importance requires a special attention in every aspect of the research process (Bryman & Bell, E., 2015). This research was developed in accordance to the highest standards of ethics. Besides complying with the NTU Code of Practice for Research (2015) and Research Councils' UK Policy and Guidelines on Governance of Good Research Conduct (2013), it took into consideration other ethical standards, including: i) Chartered Association of Business Schools Ethics Guide (2015); ii) Market Research Society Code of Conduct (2014); iii) Academy of Management Code of Ethics (2006); iv) Utility's Code of Ethics (2013) and v) Utility's Code of Ethics Regulations (2015).

Despite the differences and arguments around ethical consideration in social research, there is a consensus around the existence of four major ethical issues (Bryman & Bell, E., 2015): harm to participants, lack of informed consent, invasion of privacy and deception. The concept of

harming participants is not limited to physical or moral damages. Given the configuration of the research, some specific issues deserved special attention:

- Utility - Since the experiment took place within the Utility's organisation and using anonymised information about clients, it was necessary to sign a research agreement.
- Clients – The research used anonymised information, which will prevent the identification of clients and their personal information.
- Data management and security was an important aspect in order to comply with General Data Protection Regulation (Council Regulation 2016/679, 2016).

As stated before, consent was obtained from the Utility in order to develop the research and the publication of the results (**Annex 5**). At the client's level, both for the experimental and control groups, consent was verified in accordance to Portuguese law and General Data Protection Regulation. Since information was anonymised, there was not material risk of privacy invasion. Also, the research did not involve any form of deception. Furthermore, considering that the study was performed within Utility's customer feedback platform, using its procedures and survey templates, it seems reasonable to conclude that the impact of the experiment on the participants and on the organisation was minimal or even inexistent. In fact, even considering the control group that will be withheld from receiving firm-sponsored customer satisfaction survey, it should be noted that the Utility has in place quarantine rules that, for commercial reasons, can withhold groups of clients from receiving the surveys.

In addition to the abovementioned four main issues, Bryman & Bell (2015) also refer three additional ethical issues: the impact of data legislation, the role of reciprocity in the relationship between the researcher and research participants; the need to declare the sources of funding and support. The research was developed in order to comply to the General Data Protection Regulation (and other legislation applicable). Also, as stated before, although there was no direct funding, Utility assured the necessary conditions to develop this research project in terms of data access and conditions to perform the research. Finally, and as established by NTU rules, the researcher submitted and obtained approval from the Research Ethics Committee prior to begin the research work. The researcher received approval from NTU Professional Doctorate Research Ethics Committee (PDREC) previously to develop the experiment (**Annex 9**).

CHAPTER 5: RESULTS AND ANALYSIS

5.1. Introduction

This chapter presents the findings from the study data collected as described in the research methodology chapter. First, the pre-test results of the control group and test groups of the experiment will be presented. Next, the post-test results in terms of the measurements occurred 12 months after the experiment will be presented. Finally, the conceptual model proposed in this study is examined to test whether the hypotheses are accepted or rejected.

5.2. Pre-test Results

Based on the data preparation above, it was necessary to perform a pre-test in order to conclude that the groups involved in the experiment did not present any statistically relevant difference in the studied variables on the moment of the experiment. Soon after the assignment of all groups to the control group and test groups, an analysis on the differences between the groups was run based on the number of products contracted, complaints and profitability, the same variables used for the post-test. Therefore, the groups were compared in the same order by which later they will be compared for the differences, meaning that if in the initial moment they were not statistically different, then any difference in the post-test analysis can be validated as not only statistically relevant but also with a high degree of trust in the causality of the independent variable on the variation of the dependent variables. For logic reasons, defection cannot be pre-tested, because in the moment of the performance of the experiment all clients (assigned to a control group or test groups) were active.

Table 3 – Histogram Pre-Test (2020)

Group	N Obs	Variable	Label	N	Mean	Median	Std Dev	Minimum	Maximum
CG	400	Repurchase	Repurchase	400	2.1	2.0	1.3	0.0	11.0
		Complaints	Complaints	400	0.1	0.0	0.4	0.0	6.0
		Profitability	Profitability	400	0.7	0.7	0.3	0.6	6.9
TG1	378	Repurchase	Repurchase	378	2.1	2.0	1.3	0.0	11.0
		Complaints	Complaints	378	0.1	0.0	0.4	0.0	6.0
		Profitability	Profitability	378	0.7	0.7	0.0	0.6	0.7
TG2	1342	Repurchase	Repurchase	1342	1.9	2.0	1.1	0.0	9.0
		Complaints	Complaints	1342	0.0	0.0	0.4	0.0	8.0
		Profitability	Profitability	1342	0.7	0.7	0.0	0.7	0.8
TG3	671	Repurchase	Repurchase	671	2.0	2.0	1.1	0.0	9.0
		Complaints	Complaints	671	0.0	0.0	0.2	0.0	3.0
		Profitability	Profitability	671	0.7	0.7	0.0	0.7	0.8
TG4	335	Repurchase	Repurchase	335	1.9	2.0	1.0	1.0	7.0
		Complaints	Complaints	335	0.1	0.0	0.5	0.0	8.0
		Profitability	Profitability	335	0.7	0.7	0.0	0.7	0.8
TG5	336	Repurchase	Repurchase	336	2.0	2.0	1.1	0.0	7.0
		Complaints	Complaints	336	0.1	0.0	0.4	0.0	5.0
		Profitability	Profitability	336	0.7	0.7	0.0	0.7	0.8

The values, as shown in **Table 3**, are generally close to each other. Next, the summary of the Kruskal-Wallis H test result for differences between the groups that are subject to evaluation for hypothesis validation on the post-test analysis is presented (the details of the analysis are presented in **Annex 10**).

Table 4 – Pre-test 2020 – Repurchase – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (services per customer)	Difference	KW Value	P-value
H1.1 CG vs TG3	**CG**	400	2.08	0.1247	1.6894	0.19
	TG3	671	1.9552			
H5.1 CG vs TG3	**CG Novice**	261	2.0351	0.1639	0.9038	0.37
	TG3 Novice	404	1.8712			
	CG Experienced	139	2.1244	0.0858	0.9192	0.36
	TG3 Experienced	267	2.0386			
H1.2 CG vs TG2	**CG**	400	2.08	0.1358	2.3595	0.12
	TG2	1342	1.9441			
H5.2 CG vs TG2	**CG Novice**	261	2.0351	0.1146	0.7477	0.45
	TG2 Novice	808	1.9205			
	CG Experienced	139	2.1244	0.157	1.4231	0.15
	TG2 Experienced	534	1.9674			
H2 CG vs TG1	**CG**	400	2.08	-0.0179	0.0896	0.76
	TG1	378	2.0988			
H5.3 CG vs TG1	**CG Novice**	261	2.0351	-0.0187	0.2267	0.82
	TG1 Novice	248	2.0538			
	CG Experienced	139	2.1244	-0.0162	0.1905	0.85
	TG1 Experienced	130	2.1406			
	TG3	671	1.9552	0.0223	0.0353	0.85

Hypothesis	Group	Sample Size	Value	Difference	KW Value	P-value
H3 TG3 vs (TG4 + TG5)	TG4+TG5	661	1.9329			
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	1.8712	-0.0786	0.4001	0.69
	TG4+TG5 Novice	396	1.9498			
	TG3 Experienced	267	2.0386	0.1115	0.5925	0.55
	TG4+TG5 Experienced	265	1.9271			
H6.1 TG3 vs (TG4 + TG5)	TG3 High Sat	467	2.0236	0.0889	0.8568	0.39
	TG4+TG5 High Sat	474	1.9347			
	TG3 Medium Sat	135	1.8862	-0.1638	0.9761	0.33
	TG4+TG5 Medium Sat	128	2.0545			
	TG3 Low Sat	69	1.6667	-0.1255	0.47	0.64
	TG4+TG5 Low Sat	59	1.7922			
H4 TG4 vs TG5	TG4	335	1.8805	-0. 1045	1.3907	0.24
	TG5	336	1.9851			
H5.5 TG4 vs TG5	TG4 Novice	195	1.8976	-0.1213	0.9306	0.35
	TG5 Novice	201	2.0189			
	TG4 Experienced	140	1.8614	-0.1152	0.8663	0.39
	TG5 Experienced	135	1.9766			
H6.2 TG4 vs TG5	TG4 High Sat	237	1.8945	-0.0551	0.7334	0.46
	TG5 High Sat	238	1.9496			
	TG4 Medium Sat	67	1.8929	-0.3293	1.0627	0.29
	TG5 Medium Sat	61	2.2222			
	TG4 Low Sat	28	1.7692	-0.2045	0.6412	0.52
	TG5 Low Sat	31	1.9737			

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Taking in consideration **Table 4**, it is possible to conclude that there is no statistically relevant difference between the groups and subgroups in terms of Repurchase, based on the Kruskal-Wallis test.

Table 5 – Pre-test 2020 – Complaints – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (complaints per customer)	Difference	KW Value	P-value
H1.1 CG vs TG3	CG	400	0.0625	0.0312	1.8358	0.18
	TG3	671	0.0312			
H5.1 CG vs TG3	CG Novice	261	0.0553	0.0104	1.1014	0.27
	TG3 Novice	404	0.0449			
	CG Experienced	139	0.0697	0.0519	0.8160	0.41
	TG3 Experienced	267	0.0178			
H1.2 CG vs TG2	CG	400	0.0625	0.0193	1.6407	0.20
	TG2	1342	0.0432			
H5.2 CG vs TG2	CG Novice	261	0.0449	-0.0106	1.1181	0.26
	TG2 Novice	808	0.0555			
	CG Experienced	139	0.0697	0.0386	0.6933	0.49
	TG2 Experienced	534	0.0311			
H2 CG vs TG1	CG	400	0.0625	-0.0009	0.0004	0.98
	TG1	378	0.0634			
H5.3 CG vs TG1	CG Novice	261	0.0449	-0.0104	0.0915	0.93
	TG1 Novice	248	0.0553			

Hypothesis	Group	Sample Size	Value	Difference	KW Value	P-value
	CG Experienced	139	0.0697	-0.0032	0.0718	0.94
	TG1 Experienced	130	0.0729			
H3 TG3 vs (TG4 + TG5)	TG3	671	0.0312	-0.0238	0.2547	0.61
	TG4+TG5	661	0.0551			
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	0.0449	0.0136	0.6448	0.52
	TG4+TG5 Novice	396	0.0313			
	TG3 Experienced	267	0.0178	-0.0288	0.7015	0.48
	TG4+TG5 Experienced	265	0.0466			
H6.1 TG3 vs (TG4 + TG5)	TG3 High Sat	467	0.0278	-0.0122	0.034	0.97
	TG4+TG5 High Sat	474	0.04			
	TG3 Medium Sat	135	0.0488	0.0124	0.2155	0.83
	TG4+TG5 Medium Sat	128	0.0364			
	TG3 Low Sat	69	0.0247	-0.0142	0.5663	0.57
	TG4+TG5 Low Sat	59	0.0389			
H4 TG4 vs TG5	TG4	335	0.0507	-0.0087	0.8013	0.37
	TG5	336	0.0595			
H5.5 TG4 vs TG5	TG4 Novice	195	0.0241	-0.0199	0.4258	0.67
	TG5 Novice	201	0.044			
	TG4 Experienced	140	0.0723	0.0548	0.7364	0.46
	TG5 Experienced	135	0.0175			
H6.2 TG4 vs TG5	TG4 High Sat	237	0.0084	-0.0042	0.2859	0.77
	TG5 High Sat	238	0.0126			
	TG4 Medium Sat	67	0.0714	0.0344	1.1356	0.26
	TG5 Medium Sat	61	0.037			
	TG4 Low Sat	28	0.2564	0.1248	0.0542	0.96
	TG5 Low Sat	31	0.1316			

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Taking in consideration **Table 5**, it is possible to conclude that there is no statistically relevant difference between the groups and subgroups in terms of Complaints, based on the Kruskal-Wallis test.

Table 6 – Pre-test 2020 – Profitability – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (profit per customer)	Difference	KW Value	P-value
H1.1 CG vs TG3	CG	400	0.7092	0.0145	2.0693	0.15
	TG3	671	0.6946			
H5.1 CG vs TG3	CG Novice	261	0.6922	-0.0015	0.8254	0.41
	TG3 Novice	404	0.6937			
	CG Experienced	139	0.7260	0.0305	1.1228	0.26
	TG3 Experienced	267	0.6955			
H1.2 CG vs TG2	CG	400	0.7092	0.0145	2.6985	0.12
	TG2	1342	0.6946			
H5.2 CG vs TG2	CG Novice	261	0.6922	-0.0019	1.2431	0.21
	TG2 Novice	808	0.6941			
	CG Experienced	139	0.7260	0.0307	1.0782	0.28
	TG2 Experienced	534	0.6953			
	CG	400	0.7092	0.0159	0.0549	0.81

H2 CG vs TG1	TG1	378	0.6933			
H5.3 CG vs TG1	CG Novice	261	0.6922	0.0001	0.1656	0.87
	TG1 Novice	248	0.6921			
	CG Experienced	139	0.7260	0.0314	0.5108	0.61
	TG1 Experienced	130	0.6946			
H3 TG3 vs (TG4 + TG5)	TG3	671	0.6946	-0.0001	0.0195	0.89
	TG4+TG5	661	0.6947			
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	0.6937	-0.0008	0.3527	0.72
	TG4+TG5 Novice	396	0.6945			
	TG3 Experienced	267	0.6955	0.0005	0.7124	0.48
	TG4+TG5 Experienced	265	0.6950			
H6.1 TG3 vs (TG4 + TG5)	TG3 High Sat	467	0.6946	0	0.7505	0.45
	TG4+TG5 High Sat	474	0.6946			
	TG3 Medium Sat	135	0.6946	-0.0008	0.4208	0.67
	TG4+TG5 Medium Sat	128	0.6954			
	TG3 Low Sat	69	0.6946	-0.0003	0.3729	0.71
	TG4+TG5 Low Sat	59	0.6949			
H4 TG4 vs TG5	TG4	335	0.6944	-0.0006	1.6936	0.19
	TG5	336	0.6950			
H5.5 TG4 vs TG5	TG4 Novice	195	0.6942	-0.0006	0.9926	0.32
	TG5 Novice	201	0.6948			
	TG4 Experienced	140	0.6950	-0.0001	0.9978	0.32
	TG5 Experienced	135	0.6951			
H6.2 TG4 vs TG5	TG4 High Sat	237	0.6945	-0.0007	0.1251	0.90
	TG5 High Sat	238	0.6952			
	TG4 Medium Sat	67	0.6951	0.0002	0.9316	0.35
	TG5 Medium Sat	61	0.6949			
	TG4 Low Sat	28	0.6946	0.0007	0.2558	0.80
	TG5 Low Sat	31	0.6939			

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Taking in consideration **Table 6**, it is possible to conclude that there is no statistically relevant difference between the groups and subgroups in terms of Profitability, based on the Kruskal-Wallis test.

In summary, considering the results of Kruskal-Wallis H test, it is possible to observe that all p-values are above the significance level of 10%, meaning that there is not enough evidence to reject the null hypothesis. Thus, in 2020, there were no differences, on average, between the groups regarding the variables Repurchase, Complaints and Profitability.

Since it has not identified any case of statistically relevant difference using the p-value analysis, it was decided that it was not necessary to perform effect size test (Tabachnick & Fidell, 2020).

5.3. Post-test Results

After proving that the similarity between the groups for 2020 is statistically significant, it is possible to proceed with the analysis of the groups for the year 2021. Considering the hypothesis formulated, the comparisons between the groups is presented in accordance to the dependent variables: defection, repurchase, complaints and profitability.

Starting with defection, **Table 7** presents the value for each group.

Table 7 – Post-test 2021 – Results Defection

Variable	CG	TG1	TG2	TG3	TG4	TG5
Defection *(defection/N)*	0.0900	0.061	0.0425	0.0655	0.0151	0.0242
N	400	378	1342	671	332	330

Looking to the results in terms of defection (**Table 7**), it is possible to observe that CG is the one that presents the higher defection (9%), while TG4 is the one with the lowest defection (1,5%), followed by TG5 (2,4%).

Regarding the evolution over time (2020-2021) of the variables used for the pre-test (**Tables 8** and **9**), it is possible to observe that:

a) The average number of products (repurchase) dropped for all groups with the most significant decrease in CG (-0.0965), followed by TG1 (-0.081).

b) The average number of complaints presents a mixed evolution among the groups, having decreased in CG (-0.0104), TG1 (-0.0125) and TG5 (0.0315), but increased in TG2 (0.0082), TG3 (0.0071) and TG4 (0.0196).

c) Profitability also presents mixed results, remaining unchanged for TG4, decreasing for CG (-0.0156) and TG2 (-0.0006), but increasing for TG3 (0.0005) and TG5 (0.0011).

Table 8 – Post-Test 2021 – Results Repurchase, Complaints and Profitability

Variable	CG	TG1	TG2	TG3	TG4	TG5
Repurchase *(services per customer)*	1.9835	2,0170	1.9043	1.9219	1.8165	1.9728
Complaints *(complaints per customer)*	0.0521	0.0510	0.0514	0.0383	0.0703	0.0280
Profitability *(profit per customer)*	0.6936	0.6952	0.6953	0.6951	0.6944	0.6961

	N	400	378	1342	671	332	330

Table 9 – Difference between 2020-2021 – Results Repurchase, Complaints and Profitability

Variable	CG	TG1	TG2	TG3	TG4	TG5
Repurchase *(services per customer)*	-0.0965	-0.081	-0.0397	-0.0331	-0.0635	-0.0122
Complaints *(complaints per customer)*	-0.0104	-0.0125	0.0082	0.0071	0.0196	-0.0315
Profitability *(profit per customer)*	-0.0156	0.0019	-0.0006	0.0005	0	0.0011

5.3.1. Hypotheses H1 to H4

After this first analysis, where it was established that, in 2020, there was no relevant difference among the groups of the experiment (CG, TG1, TG2, TG3, TG4 or TG5), it is possible to proceed to the hypotheses' validation. As explained, for the defection variable a Chi-Square test was used. For all the other dependent variables a Kruskal-Wallis H test was used. First, the tables of the results are presented and then each hypothesis is assessed.

Table 10 - Hypotheses testing results of H1 to H4 – Defection – using Chi-Square test

Hypothesis	Group	Sample Size	Value *(defection/N)*	Difference	Chi-sq Value	P-value	Effect Size
H1.1: CG vs TG3	**CG** **TG3**	400 671	0.0900 0.0655	0.0245	2.1633	0.14	0.001
H1.2: CG vs TG2	**CG** **TG2**	400 1342	0.0900 0.0425	0.0475	13.7728	**0.0002*****	0.002
H2: CG vs TG1	**CG** **TG1**	400 378	0.0900 0.0610	0.029	1.5315	0.21	0.001
H3: TG3 vs (TG4 + TG5)	**TG3** **TG4+TG5**	671 662	0.0655 0.0196	0.0459	17.6075	**0.0001*****	0.003
H4: TG4 vs TG5	**TG4** **TG5**	332 330	0.0151 0.0242	-0.0091	0.7336	0.39	0.0001

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size: $V\sqrt{df^*}$ = .1 represents a small effect, = .3 represents a medium effect and = .5 represents a large effect.

Table 11 - Hypotheses testing results of H1 to H4 – Repurchase – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value *(services per customer)*	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	1.9835	0.0617	0.0588	0.81	0.0002
	TG3	671	1.9218				
H1.2 CG vs TG2	CG	400	1.9835	0.0792	0.2995	0.58	0.0003
	TG2	1342	1.9043				
H2 CG vs TG1	CG	400	1.9835	-0.0335	0.3081	0.58	0.0007
	TG1	378	2.017				
H3 TG3 vs (TG4 + TG5)	TG3	671	1.9218	0.0281	0.3567	0.55	0.0004
	TG4+TG5	662	1.8937				
H4 TG4 vs TG5	TG4	332	1.8165	-0.1555	3.5185	**0.06***	0.003
	TG5	330	1.9720				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Table 12 - Hypotheses testing results of H1 to H4 – Complaints – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value *(complaints per customer)*	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	0.0522	0.0139	0.0023	0.96	0.00004
	TG3	671	0.0383				
H1.2 CG vs TG2	CG	400	0.0522	0.0008	0.0705	0.79	0.0001
	TG2	1342	0.0514				
H2 CG vs TG1	CG	400	0.0522	0.0012	0.0020	0.96	0.00005
	TG1	378	0.051				
H3 TG3 vs (TG4 + TG5)	TG3	671	0.0383	-0.0110	0.1966	0.66	0.0003
	TG4+TG5	662	0.0493				
H4 TG4 vs TG5	TG4	332	0.0703	0.0424	0.9261	0.34	0.001
	TG5	330	0.0279				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Table 13 - Hypotheses testing results of H1 to H4 – Profitability – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value *(profit per client)*	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	0.6936	-0.0015	3.8273	**0.05***	0.002
	TG3	671	0.6951				
H1.2 CG vs TG2	CG	400	0.6936	-0.0017	4.5340	**0.03****	0.001
	TG2	1342	0.6953				
H2 CG vs TG1	CG	400	0.6936	-0.0016	3.1028	**0.07***	0.002
	TG1	378	0.6952				
	TG3	671	0.6951	-0.0001	0.0159	0.9	0.00009

H3 TG3 vs (TG4 + TG5)	**TG4+TG5**	662	0.6952				
H4 TG4 vs TG5	**TG4**	332	0.6945	-0.0016	4.0869	**0.04****	0.003
	TG5	330	0.6961				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Hypothesis 1.1: Respondents to firm-sponsored customer satisfaction surveys (and that do not receive any "thank you" message after completing the survey) show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive post-service satisfaction surveys after twelve-month period of the participation in the survey.

Based on the results presented on **Tables 10-13**, we can observe that respondents to firm-sponsored customer satisfaction surveys TG3 (that did not receive any "thank you" message after completing the survey) show: a) lower defection, b) lower repurchase, c) higher complaint and d) higher profitability than customers that do not receive post-service satisfaction surveys (CG) after twelve-month period of the participation in the survey. However, only the difference on profitability has statistical relevance at 10% (p-value = 0.05). All other variations on the dependent variables do not have statistical relevance at 1%, 5% or 10%.

In this sense, hypothesis H1.1 holds valid for the variable profitability with a significance level of 10% (with a small size effect), but it is not validated for defection, repurchase and complaints.

Hypothesis 1.2: Respondents to firm-sponsored customer satisfaction surveys (and that did receive a "thank you" message after completing the survey by e-mail or phone) show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive post-service satisfaction surveys after twelve-month period of the participation in the survey.

Based on the results presented on **Tables 10-13**, we can observe that respondents to firm-sponsored customer satisfaction surveys TG2 (and did receive a "thank you" message after completing the survey by e-mail or phone) show: a) lower defection, b) lower repurchase, c) higher complaints, and d) higher profitability than customers that do not receive post-service satisfaction surveys (CG) after twelve-month period of the participation in the survey. However, only the differences on defection (p-value = 0.002) and profitability (p-value = 0.03) have statistical relevance at 1% and 5%, respectively. All other variations on the dependent variables do not have statistical relevance at 1%, 5% or 10%.

In this sense, hypothesis H1.2 holds valid for the variable defection with a significance level of 1% and for the variable profitability with a significance level of 5% (both with a small effect size), but it is not validated for repurchase and complaints.

Hypothesis 2. Customers that receive firm-sponsored satisfaction survey (and that do not answer show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive firm-sponsored satisfaction survey.

Based on the results presented on **Tables 10-13**, we can observe that customers that receive firm-sponsored satisfaction survey TG1 (and did not answer) show: a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that do not receive firm-sponsored satisfaction survey (CG). However, only the difference on profitability (p-value = 0.07) has statistical relevance at 10%, respectively. All other variations on the dependent variables do not have statistical relevance at 1%, 5% or 10%.

In this sense, hypothesis H2 holds valid for the variable profitability with a significance level of 10% (with small effect size), but it is not validated for defection, repurchase and complaints.

Hypothesis 3. Customers that receive an answer from the company after replying to a firm-sponsored satisfaction survey show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that reply and do not receive an answer from the company.

Based on the results presented on **Tables 10-13**, we can observe that customers that receive an answer from the company after replying to a firm-sponsored satisfaction survey (TG4+TG5) show: a) lower defection, b) lower repurchase, c) higher complaints, and d) lower profitability than customers that reply and do not receive an answer from the company (TG3). However, only the difference on defection has statistical relevance at 1% (p-value = 0.001). All other variations on the dependent variables do not have statistical relevance at 1%, 5% or 10% or lower.

In this sense, hypothesis H3 holds valid for the variable defection with a significance level of 1% (with small effect size), but it is not validated for repurchase, complaints and profitability.

Hypothesis 4. Customers who receive a "thank you" message from the company by phone after replying to a firm-sponsored satisfaction survey show more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that receive a "thank you" message by e-mail.

Based on the results presented on **Tables 10-13**, we can observe that customers who receive a "thank you" message from the company by phone after replying to a firm-sponsored satisfaction survey (TG5) show: a) higher defection, b) higher repurchase, c) lower complaints and d) higher profitability than customers that receive a "thank you" message by e-mail (TG4). However, only the differences on repurchase (p-value = 0.06) and profitability (p-value = 0.04) have statistical relevance at 10% and 5%, respectively. All other variations on the dependent variables do not have statistical relevance at 1%, 5% or 10%.

In this sense, hypothesis H4 holds valid for the variable repurchase with a significance level of 10% and for the variable profitability with a significance level of 5% (both with a small effect size), but it is not validated for defection and complaints.

Table 14 – Hypotheses H1-H4 Results Summary

Hypothesis	Defection	Repurchase	Complaints	Profitability
H1.1: CG vs TG3	Unsupported	Unsupported	Unsupported	**Supported**
H1.2: CG vs TG2	**Supported**	Unsupported	Unsupported	**Supported**
H2: CG vs TG1	Unsupported	Unsupported	Unsupported	**Supported**
H3: TG3 vs (TG4 + TG5)	**Supported**	Unsupported	Unsupported	Unsupported
H4: TG4 vs TG5	Unsupported	**Supported**	Unsupported	**Supported**
H1.1: CG vs TG3	**Partially supported**			
H1.2: CG vs TG2	**Partially supported**			
H2: CG vs TG1	**Partially supported**			
H3: TG3 vs (TG4 + TG5)	**Partially supported**			
H4: TG4 vs TG5	**Partially supported**			

5.3.2. Hypotheses H5 and H6

As explained before, since it was not possible to use a regression approach to investigate the eventual moderator effects of tenure and level of satisfaction, it was decided to adapt the investigation and search for potential differences among the groups, dividing them in sub-groups and performing an analysis on the differences using Chi-Square (defection) and Kruskal-Wallis (repurchase, complaints and profitability).

Considering H5, it is possible to compare the variables defection, repurchase, complaints and profitability while considering the experiment groups (CG, TG1, TG2, TG3, TG4 or TG5) divided

into sub-groups according to their tenure. To operationalise the division, the methodology by Dholakia et al. (2004) was followed, using a median split on customer tenure to classify customers as "Novice" or "Experienced". The median at the time of the experiment was 60 months, thus the "Novice" category included all customers with a tenure up to 60 months (inclusive), the "Experienced" category included all customers with a tenure of 61 months or more.

Considering H6, in order to study the potential impact of satisfaction, an identical methodology to the one used by Dholakia et al. (2004) was followed, segmenting participants: "Low Satisfaction", "Medium Satisfaction" or "High Satisfaction" based on their responses to the overall satisfaction question (scale 0 to 10). Participants responding 0, 1, 2, or 3 on the 10-point scale were classified as "Low," those responding 4, 5, 6, or 7 were classified as "Medium" and those responding 8, 9, or 10 were classified as "High" in satisfaction. Since there is no information about customer satisfaction concerning CG, TG1, hence only among TG2 participants was it possible to study the potential moderator effect. For that purpose, TG3, TG4 and TG5 were compared.

Tables 15 to **18** present the results for H5 and H6 (detailed analysis – **Annex 13 and 14**), which will be discussed separately below.

Table 15 – Hypotheses testing results H5 and H6 - Defection – using Chi-Square test

Hypothesis	Group	Sample Size	Value (defection/n)	Difference	Chi-sq Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	0.0900	0.0245	2.1633	0.14	0.001
	TG3	671	0.0655				
H5.1 CG vs TG3	CG Novice	261	0.1066	0.0179	0.7551	0.45	0.002
	TG3 Novice	404	0.0887				
	CG Experienced	139	0.0739	0.0303	1.301	0.19	0.002
	TG3 Experienced	267	0.0436				
H1.2 CG vs TG2	CG	400	0.0900	0.0475	13.7728	**0.0002***	0.002
	TG2	1342	0.0425				
H5.2 CG vs TG2	CG Novice	261	0.1066	0.053	2.8995	**0.004***	0.002
	TG2 Novice	808	0.0536				
	CG Experienced	139	0.0739	0.042	2.3367	**0.02**	0.002
	TG2 Experienced	534	0.0319				
H2 CG vs TG1	CG	400	0.0900	0.029	1.5315	0.22	0.002
	TG1	378	0.0610				
H5.3 CG vs TG1	CG Novice	261	0.1066	0.0314	1.1393	0.25	0.003
	TG1 Novice	248	0.0752				
	CG Experienced	139	0.0739	0.0167	0.613	0.54	0.002
	TG1 Experienced	130	0.0572				
H3 TG3 vs (TG4 + TG5)	TG3	671	0.0655	0.0459	17.6075	**0.0001***	0.003
	TG4+TG5	661	0.0196				
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	0.0887	0.0672	4.2430	**0.00004***	0.003
	TG4+TG5 Novice	396	0.0215				
	TG3 Experienced	267	0.0436	0.0257	1.6586	**0.097***	0.002
	TG4+TG5 Experienced	265	0.0179				

Hypothesis	Group	Sample Size	Value	Difference	Value	P-value	Effect Size
H6.1 TG3 vs (TG4 + TG5)	**TG3 High Sat**	467	0.0385	0.028	2.1243	**0.04****	0.002
	TG4+TG5 High Sat	474	0.0105				
	TG3 Medium Sat	135	0.0244	-0.012	4.5108	0.65	0.009
	TG4+TG5 Medium Sat	128	0.0364				
	TG3 Low Sat	69	0.2839	0.232	7.2020	**5.9E-13*****	0.02
	TG4+TG5 Low Sat	59	0.0519				
H4 TG4 vs TG5	**TG4**	332	0.0151	-0.0091	0.7336	0.39	0.001
	TG5	330	0.0242				
H5.5 TG4 vs TG5	**TG4 Novice**	192	0.0245	0.0061	0.3989	0.69	0.002
	TG5 Novice	200	0.0184				
	TG4 Experienced	140	0.0059	-0.024	1.5856	0.11	0.004
	TG5 Experienced	130	0.0299				
H6.2 TG4 vs TG5	**TG4 High Sat**	237	0.0084	-0.0042	0.3269	0.74	0.001
	TG5 High Sat	238	0.0126				
	TG4 Medium Sat	67	0.0357	0.0016	0.0499	0.96	0.002
	TG5 Medium Sat	61	0.0373				
	TG4 Low Sat	28	0.0256	-0.0533	1.6842	**0.09***	0.02
	TG5 Low Sat	31	0.0789				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size: $V\sqrt{df^*}$ = .1 represents a small effect, = .3 represents a medium effect and = .5 represents a large effect.

Table 16 – Hypotheses testing results H5 and H6 – Repurchase – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (services per client)	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	**CG**	400	1.9835	0.0617	0.0588	0.81	0.0002
	TG3	671	1.9219				
H5.1 CG vs TG3	**CG Novice**	261	1.8883	0.0565	0.2482	0.8	0.0009
	TG3 Novice	404	1.8318				
	CG Experienced	139	2.064	0.0582	0.5964	0.55	0.001
	TG3 Experienced	267	2.0058				
H1.2 CG vs TG2	**CG**	400	1.9835	0.0792	0.3	0.58	0.0003
	TG2	1342	1.9043				
H5.2 CG vs TG2	**CG Novice**	261	1.8883	0.0353	0.2563	0.79	0.0006
	TG2 Novice	808	1.853				
	CG Experienced	139	2.064	0.1105	1.0312	0.3	0.001
	TG2 Experienced	534	1.9535				
H2 CG vs TG1	**CG**	400	1.9835	-0.0334	0.31	0.58	0.0007
	TG1	378	2.017				
H5.3 CG vs TG1	**CG Novice**	261	1.8883	-0.0472	0.5482	0.58	0.002
	TG1 Novice	248	1.9355				
	CG Experienced	139	2.064	-0.0298	0.2378	0.81	0.001
	TG1 Experienced	130	2.0938				
	TG3	671	1.9219	0.0282	0.36	0.55	0.0005

Hypothesis	Group	Sample Size	Value	Difference	Value	P-value	Effect Size
H3 TG3 vs (TG4 + TG5)	TG4+TG5	661	1.8936				
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	1.8318	-0.0516	0.0645	0.95	0.0004
	TG4+TG5 Novice	396	1.8834				
	TG3 Experienced	267	2.0058	0.101	0.7404	0.46	0.001
	TG4+TG5 Experienced	265	1.9048				
H6.1 TG3 vs (TG4 + TG5)	TG3 High Sat	467	1.9229	0.0492	9.7534	0.33	0.003
	TG4+TG5 High Sat	474	1.8737				
	TG3 Medium Sat	135	2.0243	0.0698	9.6237	0.92	0.01
	TG4+TG5 Medium Sat	128	1.9545				
	TG3 Low Sat	69	1.8737	-0.0613	1.1546	0.25	0.007
	TG4+TG5 Low Sat	59	1.9350				
H4 TG4 vs TG5	TG4	332	1.8165	-0.1555	3.519	**0.06***	0.003
	TG5	330	1.9720				
H5.5 TG4 vs TG5	TG4 Novice	192	1.7607	-0.2454	2.3198	**0.02****	0.005
	TG5 Novice	200	2.0061				
	TG4 Experienced	140	1.8698	-0.0798	0.2846	0.77	0.002
	TG5 Experienced	130	1.9401				
H6.2 TG4 vs TG5	TG4 High Sat	237	1.7975	-0.1521	1.4002	0.16	0.002
	TG5 High Sat	238	1.9496				
	TG4 Medium Sat	67	1.8929	-0.1256	0.4509	0.65	0.006
	TG5 Medium Sat	61	2.0185				
	TG4 Low Sat	28	1,8205	-0.2321	1.3752	0.17	0.02
	TG5 Low Sat	31	2.0526				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Table 17 – Hypotheses testing results H5 and H6 - Complaints – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (complaints per customer)	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	0.0522	0.0139	0.0023	0.96	0.00004
	TG3	671	0.0383				
H5.1 CG vs TG3	CG Novice	261	0.0711	0.0313	1.3399	0.18	0.002
	TG3 Novice	404	0.0398				
	CG Experienced	139	0.0246	-0.0161	1.3893	0.17	0.002
	TG3 Experienced	267	0,0407				
H1.2 CG vs TG2	CG	400	0.0522	0.0008	0.0705	0.79	0.0002
	TG2	1342	0.0514				

H5.2 CG vs TG2	**CG Novice**	261	0.0711	0.0114	0.8502	0.4	0.001
	TG2 Novice	808	0.0597				
	CG Experienced	139	0.0246	-0.0204	1.2205	0.22	0.001
	TG2 Experienced	534	0.045				
H2 CG vs TG1	**CG**	400	0.0522	0.0012	0.0020	0.96	0.00005
	TG1	378	0.051				
H5.3 CG vs TG1	**CG Novice**	261	0.0711	-0.0042	0.1081	0.91	0.0009
	TG1 Novice	248	0.0753				
	CG Experienced	139	0.0246	-0.0327	0.0461	0.96	0.0005
	TG1 Experienced	130	0.0573				
H3 TG3 vs (TG4 + TG5)	**TG3**	671	0.0383	-0.0110	0.1966	0.66	0.0003
	TG4+TG5	661	0.0493				
H5.4 TG3 vs (TG4 + TG5)	**TG3 Novice**	404	0.0398	-0.0093	0.8279	0.41	0.001
	TG4+TG5 Novice	396	0.0491				
	TG3 Experienced	267	0,0407	-0.0099	0.5370	0.59	0.001
	TG4+TG5 Experienced	265	0.0506				
H6.1 TG3 vs (TG4 + TG5)	**TG3 High Sat**	467	0.0214	-0.0207	6.6735	0.51	0.003
	TG4+TG5 High Sat	474	0.0421				
	TG3 Medium Sat	135	0.0407	0.0043	1.7385	0.86	0.006
	TG4+TG5 Medium Sat	128	0.0364				
	TG3 Low Sat	69	0.1481	0.0312	6.8413	0.49	0.02
	TG4+TG5 Low Sat	59	0.1169				
H4 TG4 vs TG5	**TG4**	332	0.0703	0.0424	0.9261	0.34	0.001
	TG5	330	0.0279				
H5.5 TG4 vs TG5	**TG4 Novice**	192	0.0674	0.0367	1.4532	0.15	0.004
	TG5 Novice	200	0.0307				
	TG4 Experienced	140	0.0769	0.0529	0.5841	0.56	0.002
	TG5 Experienced	130	0.024				
H6.2 TG4 vs TG5	**TG4 High Sat**	237	0.0591	0.0339	0.5041	0.61	0.001
	TG5 High Sat	238	0.0252				
	TG4 Medium Sat	67	0.0357	-0.0013	0.0361	0.97	0.002
	TG5 Medium Sat	61	0.037				
	TG4 Low Sat	28	0.2051	0.1788	2.9575	0.31	0.02
	TG5 Low Sat	31	0.0263				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Table 18 – Hypotheses testing results H5 and H6 - Profitability – using Kruskal-Wallis (KW) test

Hypothesis	Group	Sample Size	Value (profit per customer)	Difference	KW Value	P-value	Effect Size
H1.1 CG vs TG3	CG	400	0.6936	-0.0015	3.8273	**0.05***	0.002
	TG3	671	0.6951				
H5.1 CG vs TG3	CG Novice	261	0.691	-0.0019	1.4092	0.16	0.002
	TG3 Novice	404	0.6929				
	CG Experienced	139	0.6956	0.001	1.3393	0.18	0.002
	TG3 Experienced	267	0.6966				
H1.2 CG vs TG2	CG	400	0.6936	-0.0017	4.5340	**0.03****	0.001
	TG2	1342	0.6953				
H5.2 CG vs TG2	CG Novice	261	0.691	-0.0024	1.6177	0.11	0.001
	TG2 Novice	808	0.6934				
	CG Experienced	139	0.6956	-0.0009	1.3033	0.19	0.001
	TG2 Experienced	534	0.6965				
H2 CG vs TG1	CG	400	0.6936	-0.0016	3.1028	**0.07***	0.002
	TG1	378	0.6952				
H5.3 CG vs TG1	CG Novice	261	0.691	-0.0018	1.4173	0.11	0.003
	TG1 Novice	248	0.6928				
	CG Experienced	139	0.6956	-0.0007	0.9033	0.39	0.002
	TG1 Experienced	130	0.6963				
H3 TG3 vs (TG4 + TG5)	TG3	671	0.6951	-0.0001	0.0159	0.9	0.00009
	TG4+TG5	661	0.6952				
H5.4 TG3 vs (TG4 + TG5)	TG3 Novice	404	0.6929	-0.0001	0.0614	0.95	0.0004
	TG4+TG5 Novice	396	0.6931				
	TG3 Experienced	267	0.6966	0.0012	0.3068	0.76	0.0008
	TG4+TG5 Experienced	265	0.6954				
H6.1 TG3 vs (TG4 + TG5)	TG3 High Sat	467	0.6948	-0.0003	5.5072	0.58	0.002
	TG4+TG5 High Sat	474	0.6951				
	TG3 Medium Sat	135	0.6963	0.0007	7.9035	0.99	0.01
	TG4+TG5 Medium Sat	128	0.6956				
	TG3 Low Sat	69	0.6925	-0.0012	9.6431	0.34	0.02
	TG4+TG5 Low Sat	59	0.6937				
H4 TG4 vs TG5	TG4	332	0.6945	-0.0016	4.0869	**0.04****	0.003
	TG5	330	0.6961				
H5.5 TG4 vs TG5	TG4 Novice	192	0.6928	-0.0023	2.0889	**0.04****	0.004
	TG5 Novice	200	0.6951				
	TG4 Experienced	140	0.696	-0.0011	0.7015	0.48	0.002
	TG5 Experienced	130	0.6971				

H6.2 TG4 vs TG5	TG4 High Sat	237	0.6942	-0.0018	1.6632	**0.09***	0.002
	TG5 High Sat	238	0.6960				
	TG4 Medium Sat	67	0.695	-0.0013	0.7032	0.48	0.008
	TG5 Medium Sat	61	0.6963				
	TG4 Low Sat	28	0.6949	-0.0016	0.82	0.41	0.01
	TG5 Low Sat	31	0.6965				

Note: P-values in parentheses; ***, **, and * denote statistical significance at the 1%, 5%, and 10% level. Effect Size eta2[H]: 0.01- < 0.06 (small effect), 0.06 - < 0.14 (moderate effect) and >= 0.14 (large effect).

Hypothesis 5. Novice customer will present stronger MME than experienced customers resulting from firm-sponsored satisfaction survey, showing more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability.

When considering tenure, the comparison between CG and TG3 shows that:

a) The "Novice" customers of TG3 present lower defection, lower complaints and higher profitability. However, none of these variations have statistical relevance at 10%. Repurchase has a variation opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Experienced" customers of TG3 present lower defection than CG. However, this variation does not have statistical relevance at 10%. In addition, all other dependent variables have a variation opposite to the hypothesis but with no statistical relevance at 10%.

In this sense, hypothesis H5.1 is not validated for any of the variables, meaning that it is not possible to conclude that "Novice" customers have stronger MME than "Experienced" customers.

When considering tenure, the comparison between CG and TG2 shows that:

a) The "Novice" customers of TG2 present lower defection (with statistical relevance at 1%), lower complaints (no statistical relevance at 10%) and higher profitability (no statistical relevance at 10%, however very close, p-value = 0.11). However, repurchase has a variation opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Experienced" customers of TG2 present lower defection (with statistical relevance at 1%), and higher profitability (with no statistical relevance at 10%). Repurchase and complaints have variations opposite to the hypothesis but with no statistical relevance.

In this sense, hypothesis H5.2 is validated for defection (the variation on "Novice" customers is greater than on "Experienced" customers), with a small size effect. However, it is not validated for repurchase, complaints and profitability.

When considering tenure, the comparison between CG and TG1 shows that:

a) The "Novice" customers of TG1 present lower defection (with no statistical relevance at 10%), higher repurchase (with no statistical relevance at 10%) and higher profitability (no statistical relevance at 10%, however very close, p-value = 0.11). However, complaints have a variation opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Experienced" customers of TG1 present lower defection, higher repurchase and higher profitability. However, none of these variations have statistical relevance at 10%. In addition, complaints have a variation opposite to the hypothesis but with no statistical relevance at 10%.

In this sense, hypothesis H5.3 is not validated for any of the variables, meaning that it is not possible to conclude that "Novice" customers have stronger MME than "Experienced" customers.

When considering tenure, the comparison between TG3 and the aggregated TG4 and TG5 shows that:

a) The "Novice" customers of TG4+TG5 present lower defection (with statistical relevance at 1%) and higher profitability (no statistical relevance at 10%). Repurchase and complaints have variations opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Experienced" customers of TG4+TG5 present lower defection (with statistical relevance at 10%), higher repurchase (with no statistical relevance at 10%). Complaints and profitability have variations opposite to the hypothesis but with no statistical relevance at 10%.

In this sense, hypothesis H5.4 is validated for defection (the variation on "Novice" customers is greater than on "Experienced" customers), with a small size effect. However, it is not validated for repurchase, complaints and profitability.

Finally, when considering tenure, the comparison between TG4 and TG5 shows that:

c) The "Novice" customers of TG5 present lower defection (with no statistical relevance at 10%), higher repurchase (with statistical relevance at 5%), lower complaints (with no statistical relevance at 10%) and higher profitability (with statistical relevance at 1%).

However, defection has a variation opposite to the hypothesis but with no statistical relevance at 10%.

a) The "Experienced" customers of TG5 present higher repurchase (with statistical relevance at 5%), lower complaints (with no statistical relevance at 10%) and higher profitability (with no statistical relevance at 10%). Defection has a variation opposite to the hypothesis but with no statistical relevance at 10%.

In this sense, hypothesis H5.5 is validated for repurchase and for profitability, with small size effect. However, it is not validated for defection and complaints.

Table 19 - Hypothesis H5 Results Summary

Hypothesis	Defection	Repurchase	Complaints	Profitability
H5.1. CG vs TG3	Unsupported	Unsupported	Unsupported	Unsupported
H5.2 CG vs TG2	**Supported**	Unsupported	Unsupported	Unsupported
H5.3 CG vs TG1	Unsupported	Unsupported	Unsupported	Unsupported
H5.4 TG3 vs (TG4 + TG5)	**Supported**	Unsupported	Unsupported	Unsupported
H5.5 TG4 vs TG5	Unsupported	**Supported**	Unsupported	**Supported**
H5.1 CG vs TG3	Unsupported			
H5.2 CG vs TG2	**Partially supported**			
H5.3 CG vs TG1	Unsupported			
H5.4 TG3 vs (TG4 +TG5)	**Partially supported**			
H5.5 TG4 vs TG5	**Partially supported**			

Hypothesis 6. "High satisfaction customers" will present stronger MME than "low satisfaction customers" resulting from firm-sponsored satisfaction survey, showing more positive outcomes towards the company in terms of a) lower defection, b) higher repurchase, c) lower complaints and d) higher profitability.

When considering satisfaction, the comparison between TG3 and the aggregated group of TG4 and TG5 shows that:

a) The "High Satisfaction" customers of TG4+TG5 present lower defection (with statistical relevance at 1%) and higher profitability (with no statistical relevance at 10%). Repurchase and complaints have variations opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Medium Satisfaction" customers of TG4+TG5 present lower complaints (with no statistical relevance at 10%). Defection, repurchase and profitability have variations opposite to the hypothesis but with no statistical relevance at 10%.

c) The "Low Satisfaction" customers of TG4+TG5 present lower defection (with statistical relevance at 1%), higher repurchase (with no statistical relevance at 10%), lower complaints (with no statistical relevance at 10%) and higher profitability (with no statistical relevance at 10%).

In this sense, hypothesis H6.1 is not validated. In fact, it presents interesting results since "Low Satisfaction" customers of TG4+TG5 present lower defection than TG3 and with a variation greater than the one verified for "High Satisfaction" customers.

When considering satisfaction, the comparison between TG4 and TG5 shows that:

a) The "High Satisfaction" customers of TG5 present lower complaints (with no statistical relevance at 10%) and higher profitability (with statistical relevance at 10%). Defection and repurchase have variations opposite to the hypothesis but with no statistical relevance at 10%.

b) The "Medium Satisfaction" customers of TG5 present lower defection, higher repurchase and higher profitability, all without statistical relevance at 10% or lower. Defection and repurchase have a variation opposite to the hypothesis but with no statistical relevance at 10%.

c) The "Low Satisfaction" customers of TG5 present lower complaints and higher profitability, all without statistical relevance at 10%. Defection has a variation opposite to the hypothesis and it has statistical relevance at 10%. Repurchase has also a variation opposite to the hypothesis but with no statistical relevance at 10%

In this sense, hypothesis H6.2 is validated for profitability, with small size effect. However, it is not validated for repurchase, complaints and profitability. In addition, it is important to highlight the unexpected result with "Low Satisfaction" customers in terms of defection.

Table 20 - Hypotheses H6 Results Summary

Hypothesis	Defection	Repurchase	Complaints	Profitability	Satisfaction level
H6.1 TG3 vs (TG4 + TG5)	Unsupported	Unsupported	Unsupported	Unsupported	High
H6.2 TG4 vs TG5	Unsupported	Unsupported	Unsupported	**Supported**	High
H6.1 TG3 vs (TG4 + TG5)	Unsupported	Unsupported	Unsupported	Unsupported	Medium

H6.2 TG4 vs TG5	Unsupported	Unsupported	Unsupported	Unsupported	
H6.1 TG3 vs (TG4 + TG5)	Unsupported	Unsupported	Unsupported	Unsupported	Low
H6.2 TG4 vs TG5	Unsupported	Unsupported	Unsupported	Unsupported	
H6.1 TG3 vs (TG4 + TG5)	Unsupported				
H6.2 TG4 vs TG5	**Partially supported**				

CHAPTER 6: DISCUSSION

6.1. Introduction

This Chapter provides a general discussion on the results of this thesis and explores relationships between the research findings and positions explored in the literature review, considering the four research objectives in this thesis. Before that, however, it is important to highlight that this research was performed partially during the Covid-19 pandemic (the experiment started in January 2020 and ended in January 2021). The study of pandemic effects on consumers' behaviours is just starting (Crosta, Di et al., 2021; Loxton et al., 2020; Sheth, J., 2020) but there is little room to doubt on its impact, in particular during the periods of lockdown as it happened in Portugal (from 16th of March 2020 to 15th of May 2020 and from 15th January 2021 to 11th March 2021). The researcher did not have access to information from the Utility that could enable an assessment of such impact on the consumers' behaviour, in particular to determine the influence of the pandemic on the results regarding the dependent variables. Nevertheless, it is important to underline that this study's research design minimized that potential distortion factor on the results since this research focused on the differences of behaviour among control group and test groups considering the independent variables, meaning that the pandemic influenced all groups in the same way and the differences discussed below are valid and meaningful. In any case, this is an aspect that should deserve further research in future studies.

6.2. Research Objective 1 (RO1)

The first research objective, "to determine the extent to which firm-sponsored satisfaction surveys have a positive effect or not on business outcomes" has been achieved. This has been achieved by the formulation of hypotheses based on the literature review, followed by validation through a field experiment study with 2.232 clients of the Utility.

Setting-up the experiment together with the Utility and collecting the data from the experiment were the main methodological challenges of this study. To achieve RO1 it was important to use a setting as close to reality as possible, namely using the Utility's VoC platform, the Utility's customer satisfaction survey and the business metrics that the Utility uses to measure the most important business outcomes. However, this limited the capacity of the researcher to implement

changes that could improve the strength of the conclusions and validate the hypotheses formulated based on the literature review. Reflections and recommendations for further research are provided in **Chapter 7**.

As described in the **Chapter 5**, the analysis of the field experiment's results allows important key findings related to RO1. Based on the literature review, this thesis adopted the broad position that firm-sponsored customer satisfaction surveys trigger inferences, causing changes on customers' behaviours that have a beneficial impact on business outcomes (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010; Flynn et al., 2017; Sharad Borle et al., 2007). Thus, this thesis explored the impact of MME of firm-sponsored customer satisfaction surveys on the selected business outcomes of the Utility, comparing the results 12 months after the experiment on the following outcomes: defection, repurchase, complaints and profitability.

Comparing to a control group - CG (that did not receive a firm-sponsored customer satisfaction survey after the interaction with the Utility), the MME was tested in two different ways: i) comparison to test group involving participants that received and replied to the firm-sponsored customer satisfaction survey and did not receive any "thank you" contact from the Utility following the answer to the survey (TG3); and ii) comparison to test group that, besides TG3, included participants that received and replied to the firm-sponsored customer satisfaction survey and received a "thank you" contact (e-mail and phone) by the Utility following the answer to the survey (TG2).

Considering the comparison between CG and TG3, it is possible to observe:

- In terms of defection, the value of TG3 is lower (-0.0245) than the value of CG. However, this apparent positive outcome in the comparison between TG3 and CG does not present statistical relevance at 10%. Thus, in this test, the study did not offer support on the positive impact of the firm-sponsored customer satisfaction survey on defection (Dholakia, U. M. et al., 2004; Flynn et al., 2017; Sharad Borle et al., 2007).
- In terms of repurchase, in 2020, the repurchase value of TG3 (1.955) was lower than the CG (2.08), but the difference (-0.1247) was not statistically relevant. After twelve months, it is possible to observe that the repurchase value of TG3 decreased (-0.0331), the CG decreased even further (-0.0965) and the difference decreased between TG3 and CG (-0.0617). However, this apparent positive outcome in the comparison between TG3 and CG does not present statistical relevance at 10%. Thus, in this test, the study did not offer support on the positive impact of the firm-sponsored customer satisfaction survey

on repurchase (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. & Morwitz, V., 2002; Flynn et al., 2017; Sharad Borle et al., 2007).

- In terms of complaints, in 2020, the complaint value of TG3 (0.0312) was lower than the CG (0.0625), but the difference (-0.0312) was not statistically relevant. After twelve months, it is possible to observe that the complaint value of TG3 increased slightly (0.0071), while CG value decreased (-0.0104), shortening the difference between TG1 and CG (-0.0139). However, this apparent negative outcome in the comparison between TG3 and CG does not present statistical relevance at 10%. Thus, in this test, the study did not offer support on the positive impact of the firm-sponsored customer satisfaction survey on complaints (Walsh et al., 2006).

- In terms of profitability, in 2020, the profitability value of TG3 (0.6946) was lower than the control group (0.7092), but the difference (-0.0146) was not statistically relevant. After twelve months, it is possible to observe that the profitability value of TG3 increased (0.005) while the CG value decreased (-0.0156) to the point that TG3 presented a higher profitability value than CG (0.0015), with p-value = 0.05 (statistical significance at 10%). Thus, the study offers support to Dholakia & Morwitz (2002), who have studied the impact of MME of firm-sponsored customer satisfaction surveys on customer profitability. This result is important considering the scope of the variable profitability to capture the value of the Utility's client, considering several aspects that are beyond defection, repurchase and complaints and that influence the profitability of the client.

Considering the comparison between CG and TG2, it is possible to observe that:

- In terms of defection, the value of TG2 is lower (-0.0475) than the value of CG, with p-value = 0.0002 (statistical significance at 1%). Thus, in this test, the study offers support on the positive impact of the firm-sponsored customer satisfaction survey on defection (Dholakia, U. M. et al., 2004; Flynn et al., 2017; Sharad Borle et al., 2007).

- In terms of repurchase, in 2020, the repurchase value of TG2 (1.944) was lower than the CG (2.08), but the difference (-0.1359) was not statistically relevant. After twelve months, it is possible to observe that the repurchase value of TG2 decreased (-0.0397), the CG decreased even more (-0.0965) and the difference decreased between TG2 and CG (-0.0792). However, this apparent positive outcome in the comparison between TG2 and CG does not present statistical relevance at 10%. Thus, in this test, the study did not offer support on the positive impact of the firm-sponsored customer satisfaction survey on repurchase (Bone et al., 2017; Dholakia, U. M. et al., 2004; Dholakia, U. & Morwitz, V., 2002; Flynn et al., 2017; Sharad Borle et al., 2007).

- In terms of complaints, in 2020, the complaint value of TG2 (0.0432) was lower than the CG (0.0625), but the difference (-0.0192) was not statistically relevant. After twelve months, it is possible to observe that the complaint value of TG2 slightly increased (0.0082), while CG value decreased (-0.0104), shortening the difference between TG2 and CG (-0.0008). However, this apparent negative outcome in the comparison between TG2 and control group does not present statistical relevance at 10%. Thus, in this test, the study did not offer support on the positive impact of the firm-sponsored customer satisfaction survey on complaints (Walsh et al., 2006).

- In terms of profitability, in 2020, the profitability value of TG2 (0.6947) was lower than the control group (0.7092), but the difference (-0.0145) was not statistically relevant. After twelve months, it is possible to observe that the profitability value of TG2 decreased slightly (0.0006) while the CG value decreased even more (-0.0156) to the point that TG2 presented a higher profitability value than CG (0.0017), with p-value = 0.03 (statistical significance at 5%). Thus, the study offers support to Dholakia & Morwitz (2002) that have studied the impact of MME of firm-sponsored customer satisfaction surveys on customer profitability.

In summary, and taking in consideration the above-mentioned elements, it is possible to conclude that H1 was validated regarding the positive impact of firm-sponsored customer satisfaction surveys on profitability (TG3 and TG2). Additionally, it is possible to conclude that H1 was validated regarding the positive impact of firm-sponsored customer satisfaction surveys on defection (TG2). However, despite the general evolution in line with H1, it was not possible to validate the positive impact of firm-sponsored customer satisfaction surveys on repurchase and complaints.

Next, it is possible to discuss the results of H2 and H3 that were formulated in order to support the position that the occurrence of MME in firm-sponsored customer satisfaction surveys is explained by an inference-based explanation (Dholakia, U. M., 2010). Consistent with the MME explanation based on inference, this thesis explored the hypotheses that the effects occurred beyond the direct impact of answering the survey. In that sense, this thesis formulated the hypotheses that the MME could be impacted by *ex ante* and *ex post* interactions related to the firm-sponsored customer satisfaction survey: i) *ex ante* - receiving the survey (and do not replying to it) – H2 (Bone et al., 2017) and, ii) *ex post* – receiving a "thank you" message after answering to the survey - H3 (Becker et al., 2020; Challagalla et al., 2009; Shin et al., 2017). In summary, in the context of MME, this thesis intended to validate the hypotheses that firm-sponsored customer satisfaction surveys influence positively the customer behaviour towards the company in terms of defection, repurchase, complaints and profitability and that positive

influence occurs due to an inference-based process that the customer does towards the company on its commitment to receive and to use feedback.

Considering the H2 (*ex-ante* effect), comparing TG1 (clients that received but did not reply to the customer satisfaction survey) to the CG, it is possible to observe:

- In terms of defection, the value of TG1 is lower (-0.029) than the defection value of control group (0.0900). However, this apparent positive outcome in the comparison between TG1 and control group does not present statistical relevance at 10%.

- In terms of repurchase, in 2020, the repurchase value of TG1 (2.098) was higher than the CG (2.08), but the difference (0.0179) was not statistically relevant. After twelve months, it is possible to observe that the repurchase value of TG1 decreased (-0.081), the CG decreased even more (-0.0965) and the difference increased between TG1 and CG (0.0335). However, this apparent positive outcome in the comparison between TG1 and CG does not present statistical relevance at 10%.

- In terms of complaints, in 2020, the complaint value of TG1 (0.0635) was higher than the CG (0.0625), but the difference (0.0010) was not statistically relevant. After twelve months, it is possible to observe that the complaint value of TG1 decreased (-0.0125), the same happened with CG with less variation (-0.0104) to the point that, in 2021, TG1 presented a lower complaint value than CG (-0.0012). However, this apparent positive outcome in the comparison between TG1 and CG does not present statistical relevance at 10%.

- In terms of profitability, in 2020, the profitability value of TG1 (0.6933) was lower than the CG (0.7092), but the difference (-0.0159) was not statistically relevant. After twelve months, it is possible to observe that the profitability value of TG1 increased (0.0019) while the CG value decreased (-0.0156) to the point that, in 2021, TG1 presents a higher profitability (0.01016), with p-value = 0.07 (statistical significance at 10%).

Considering the H3 (*ex-post* effect), comparing the aggregated group of TG4 (clients that replied and received a "thank you" email) and TG5 (clients that replied and received a "thank you" phone call) to TG3 (clients that replied and did not receive any "thank you" message from the Utility), it is possible to observe that:

- In terms of defection, it is possible to observe that the defection value of TG4+TG5 (0.02265) is lower than the defection value of TG3 (0.06655), and the difference (-0.459) presents p-value = 0.0001 (statistical significance at 1%). Thus, this is a positive outcome that indicates that the follow-up "thank you" interaction with participants has a positive impact in terms of defection.

- In terms of repurchase, in 2020, the aggregated repurchase value of TG4+TG5 (1.939) was higher than TG3 (1.9219), but the difference was not statistically relevant. After twelve months, it is possible to observe that the repurchase value of TG4+TG5 decreased (-0.0486) and the same happened to TG3 (-0.0324). However, this apparent negative outcome in the comparison between TG4+TG5 and TG3 does not present statistical relevance at 10%.

- In terms of complaints, in 2020, the complaint value of TG4+TG5 (0.0551) was higher than TG3 (0.0313), but the difference was not statistically relevant. After twelve months, it is possible to observe that the complaint value of TG4+TG5 decreased (0.0493) while the value of TG3 increased slightly (0.0383). However, the difference between TG3 and value of TG4+TG5 (-0.0110) does not present statistical relevance at 10%.

- In terms of profitability, in 2020, the profitability value of TG4+TG5 (0.6946) was slightly lower than TG3 (0.6947), but the difference was not statistically relevant. After twelve months, it is possible to observe that the profitability value of TG4+TG5 increased (0.6953) as well of TG3 (0.6951), to the point that, in 2021, TG4+TG5 present a higher aggregated profitability (0.0002). However, the difference does not present statistical significance at 10%.

In summary, and taking in consideration the above-mentioned elements, it is possible to conclude that it was possible to partially validate H2 and H3. In addition to the general evolution in line with H2, it was possible to validate the positive impact of firm-sponsored customer satisfaction surveys on profitability, but not on defection, repurchase and complaints. This is the first time that it is possible to observe *ex-ante* MME. Considering H3, it was possible to validate the positive impact of firm-sponsored customer satisfaction surveys on defection, but not on repurchase, complaints and profitability, reinforcing the findings of previous research (Becker et al., 2020; Challagalla et al., 2009; Shin et al., 2017).

Finally, it is possible to discuss the results of H4 which was formulated to provide additional support to the position that the occurrence of MME in firm-sponsored customer satisfaction surveys is explained by an inference-based explanation. Some authors have studied how value creation can change depending on the media means of contact between the supplier and the customer, pointing out that the choice of contact media can influence the efficiency and effectiveness of the contact (Becker et al., 2020). On one hand, personal contact media as phone calls are considered a rich and highly effective media but also implying high cost and high invasiveness. On the other hand, impersonal contact media such as e-mails are comparably much less invasive, with a low cost but also less rich and effective (Becker et al., 2020). In

particular, some studies observed the positive effect on business outcomes from proactive gratification messages (that offer a benefit to the customer after the beginning of the commercial relationship) and reported the difference between the phone call and e-mail messages, with phone calls presenting higher positive impact (Dimmick et al., 2000; Ramirez et al., 2008).

This thesis searched for support to the inference-based explanation of MME, according to which the impact on business outcomes results from the inferences that customers extract from the investment that the companies do to obtain and to incorporate customer feedback. Thus, this thesis formulated the hypothesis that the "thank you" message (after the completion of the survey) using phone call will have a bigger impact on business outcomes than the "thank you" message e-mail (Barnes & Cumby, 2002; Parasuraman & Colby, 2015; Ramirez et al., 2008; Strauss & Hill, 2001).

Considering the H4, comparing TG4 (clients that replied and received a "thank you" email) to TG5 (clients that replied and received a "thank you" phone call), it is possible to observe that:

- In terms of defection, the value of TG4 (0.0151) was lower than the defection value of TG5 (0.0242), but the difference (-0.0091) does not present statistical significance at 10%.

- In terms of repurchase, in 2020, the value of TG4 (1.880) was lower than TG5 (1.985), but the difference was not statistically relevant. After twelve months, it is possible to observe that the repurchase value of TG4 increased (1.8165) but the repurchase value of TG5 decreased slightly (1.9728), presenting a difference (-0.1575) that does have statistical relevance, with p-value = 0.06 (significance at 10%).

- In terms of complaints, in 2020, the value of TG4 (0.0507) was lower than the TG5 (0.0595), but the difference was not statistically relevant. After twelve months, it is possible to observe that the complaint value of TG4 increased (0.0703) while the value of TG5 decreased (0.0280). However, the difference does not present statistical significance at 10%.

- In terms of profitability, in 2020, the value of TG4 (0.6944) was lower than TG5 (0.6950), but the difference was not statistically relevant. After twelve months, it is possible to observe that the profitability value of TG4 did not change (0.6944) while TG5 increased (0.6961) and this difference (0.0016) has statistical relevance, with p-value = 0.04 (significance at 5%).

In summary, and taking in consideration the above-mentioned elements, it is possible to conclude that H4 has been validated about the positive impact of "thank you" phone call

compared to the "thank you" e-mail concerning repurchase and profitability, but not on defection and complaints.

As stated above, in all aforementioned hypotheses there were several cases in which the experiment did not validate the expected results. It is important to highlight some additional thoughts on these findings. As mentioned before, the limitations of the data available for this study are an incentive to future research that can replicate this study and overcome some aspects of data access and data quality. In addition, although the results were not validated in the cases identified, it is important to note that they were not rejected, i.e., the results did no show differences with statistical relevance that were against the hypotheses formulated in this research. Furthermore, it needs to be highlighted that, except for H3, the positive impact of the customer satisfaction survey was always validated in the dependent variable profitability. As mentioned above, the dependent variable profitability used in this study corresponds to an overall metric that measures the contribution of a customer to the results of the company, computed using a standard algorithm used by financial institutions based on activity-based cost accounting practices, computing the difference between total revenues (including fees, interest income, service charges, etc.) and total costs (including interest expenses, servicing costs, transaction costs, etc.). Thus, the variations on this variable are more meaningful because they are able to capture the overall impact of the customer satisfaction survey on the client's behaviour, going beyond the specific impact of the other dependent variables used in this study, more limited in their scope (defection, repurchase and complaints).

6.3. Research Objective 2 (RO2)

Research Objective 2 is "to assess the extent to which the degree of tenure with the company and satisfaction with last transaction may affect the impact of firm-sponsored satisfaction surveys on business outcomes". Following the MME research on possible moderating effects, in particular Dholakia et al. (2004), this thesis aimed to explore two possible moderators: tenure and level of satisfaction. As mentioned in **section 4.5.5,** the initial plan was to analyse the potential moderator effect of those two variables using regression analysis. Due to the limitations of the data (not fitting to the assumptions required by the planned regression analysis methods), it was decided to abandon this approach. Taking a broader view of the research objective, and considering previous studies with identical limitations (Amos et al., 2008), instead of investigating directly the moderator effect from a regression analysis perspective, it was decided to try to identify potential impacts of tenure and level of satisfaction on the relationship between independent variables and dependent variables. For this purpose, sub-

groups based on tenure ("Novice", "Experienced") and level of satisfaction ("High satisfaction", "Medium satisfaction" and "Low satisfaction") were created. Thus, the analysis cannot be considered an investigation on the moderator effects, but it allows the identification of potential impacts that later research can explore with different data settings (Amos et al., 2008).

The moderator factor of customer tenure has been studied in the context of MME (Dholakia, U. M. et al., 2004). This last study concluded that prior experience with the firm shifted the psychological process through which the MME occurred. The MME is stronger with novice customers than with experienced customers because these are more sensitive to inferences as a source of information (as opposed to experienced customers that mitigate new information and inferences with their previous experience) about the supplier. In consequence, the "surprise factor" will determine a bigger change for the business outcomes emerging from novice customers than from experienced customers (Dholakia, U. M. et al., 2004). Thus, considering the H5, it is possible to compare the variables repurchase, complaints, profitability and defection while considering the experiment groups (CG, TG1, TG2, TG3, TG4 and TG5) divided into "Novice" (tenure below median) and "Experienced" (tenure higher than median):

a) When comparing "Novice" of TG3 to "Novice" of CG, it is possible to observe that TG3 presents lower defection (-0.0179), lower repurchase (-0.0565), lower complaints (-0.0313) and higher profitability (0.0019). When comparing "Experienced" of TG3 to "Experienced" of CG, it is possible to observe that TG3 presents lower defection (-0.0303), lower repurchase (-0.0582), higher complaints (0.0161) and lower profitability (-0.001).

b) When comparing "Novice" of TG2 to "Novice" of CG, it is possible to observe that TG2 presents lower defection (-0.053, with p-value = 0.04), lower repurchase (-0.0353), lower complaints (-0.0114) and higher profitability (0.0024). When comparing "Experienced" of TG2 to "Experienced" of CG, it is possible to observe that TG2 presents lower defection (0.0405, with p-value = 0.02), lower repurchase (-0.1105), higher complaints (0.0204) and higher profitability (0.0009).

c) When comparing "Novice" of TG1 to "Novice" of CG, it is possible to observe that TG1 presents lower defection (-0.0314), higher repurchase (0.0472), lower complaints (-0.0042) and higher profitability (-0.018, with p-value = 0.11). When comparing "Experienced" of TG1 to "Experienced" of CG, it is possible to observe that TG1 presents lower defection (-0.0167), higher repurchase (0.0298), higher complaints (0.0011) and higher profitability (0.0007).

d) When comparing "Novice" of TG4+TG5 to "Novice" of TG3, it is possible to observe that TG4+TG5 presents lower defection (-0.0672, with p-value = 0.00004), higher

repurchase (0.0516), higher complaints (0.0093) and higher profitability (0.0001). When comparing "Experienced" of TG4+TG5 to "Experienced" of CG, it is possible to observe that TG4+TG5 presents lower defection (0.0257, with p-value = 0.1), lower repurchase (-0.101), higher complaints (0.0099) and lower profitability (-0.0012).

e)   When comparing "Novice" of TG5 to "Novice" of TG4, it is possible to observe that TG5 presents lower defection (-0.0061), higher repurchase (0.2454, with p-value = 0.02), lower complaints (-0.0367) and higher profitability (0.0024, with p-value = 0.04). When comparing "Experienced" of TG5 to "Experienced" of TG4, it is possible to observe that TG5 presents higher defection (0.0240), higher repurchase (0.0798), lower complaints (-0.0529) and higher profitability (0.0011).

Considering the results, it is possible to conclude that the following cases are consistent with H5 with statistical significance:

a)   The "Novice" of TG2 manifested a higher positive impact on defection (lower) than the "Experienced" TG2 customers.

b)   The "Novice" of TG4+TG5 manifested a higher positive impact on defection (lower) than the "Experienced" TG2 customers.

c)   The "Novice" of TG5 manifest a positive impact on repurchase (higher) and on profitability (higher) and there are not such positive impacts on "Experienced" TG5.

In conclusion, following the previous investigation on tenure as a moderator effect of MME, this study was able to collect additional findings that highlight the different impact of tenure on MME (considering the dependent variables), between "Novice" customers and "Experienced" customers. This has important consequences from a managerial perspective. In addition, going beyond the limitations of this study, it justifies future research on the potential moderator effect of tenure on MME (as discussed in Chapter 7).

The level of satisfaction has also been studied by research as a possible moderator of MME (Dholakia, U. M. et al., 2004), considering that "high satisfaction customers" have more positive inferences about the company and more positive business outcomes than "low satisfaction customers"). Despite the fact that it has not been able to perform a regression analysis to determine that potential moderator effect, this study searched for evidence of the impact of such variable on the dependent variables, by sub-grouping the experiment groups that replied to the survey, including level of satisfaction (TG3, TG4 and TG5). Thus, customers were divided according to their answer to the overall satisfaction question (0-10-point scale): "Low Satisfaction" (participants responding 0, 1, 2, or 3); "Medium Satisfaction" (participants

responding 4, 5, 6, or 7); "High Satisfaction" (participants responding 8, 9, or 10). With this approach, it is possible to highlight that:

a) When comparing "High Satisfaction" of TG4+TG5 to TG3, it is possible to observe that TG4+TG5 presents lower defection (0.028, with p-value = 0.04), lower repurchase (-0.0492), higher complaints (0.0207) and higher profitability (0.0003). When comparing "Low Satisfaction" of TG4+TG5 to TG3, it is possible to observe that TG4+TG5 presents lower defection (0.232, with p-value = 0.00005), higher repurchase (0.613), lower complaints (-0.0312) and higher profitability (0.0012).

b) When comparing "High Satisfaction" of TG4 to TG5, it is possible to observe that TG5 presents higher defection (-0.0042), higher repurchase (0.1521), lower complaints (0.0339) and higher profitability (0.0018, with p-value = 0.9). When comparing "Low Satisfaction" of TG4 to TG5, it is possible to observe that TG5 presents higher defection (0.0533, with p-value = 0.09), higher repurchase (0.2321), lower complaints (-0.1788) and higher profitability (0.0016).

Considering the results, it is possible to conclude with statistical significance:

a) The "High Satisfaction" customers of TG4+TG5 manifest a positive impact on defection compared to "High Satisfaction" of TG3, but the "Low Satisfaction" of TG4+TG5 manifest an even greater positive impact on defection (lower) than "Low Satisfaction" of TG3.

b) The "High Satisfaction" customers of TG5 manifest a positive impact on profitability compared to "High Satisfaction" of TG4, and such variation does not occur between "Low Satisfaction" of TG5 and "Low Satisfaction" of TG5.

c) In addition, "Low Satisfaction" customers of TG5 manifest a negative impact compared to "Low Satisfaction of TG4, and such variation does not occur between "High Satisfaction" of TG5 and "High Satisfaction" of TG5.

In conclusion, following the previous investigation on satisfaction as a moderator effect of MME, this study was able to collect additional findings that highlight the different impact of satisfaction on MME (considering the dependent variables), between "High Satisfaction" customers and "Low Satisfaction" customers. However, the evolution is not totally aligned with H6, given the result mentioned above concerning the comparison between TG4+TG5 and TG3, where "Low Satisfaction" customers presented a stronger positive impact than the "High Satisfaction". This requires further investigation (as discussed in **Chapter 7**). In any case, this is also an additional support to the inference-based explanation of MME, as opposed to the accessibility-based explanation (since in line with this theory "Low Satisfaction" customers

should act according to their answers, with a negative impact on business outcomes). This will be further discussed in the section dedicated to contributions of this study to theory.

6.4. Research Objective 3 (RO3)

Research Objective 3 is "to contribute for a better cost/benefit analysis on deciding to carry out firm-sponsored customer satisfaction surveys". Based on the literature review as well on the conclusions of the field experiment, it is possible to highlight important key findings concerning the cost and the benefits of firm-sponsored customer satisfaction surveys. Since it was not possible to have access to the financial information of the Utility, it was not possible to quantify the ratio between cost and benefits.

The first important conclusion emerging from this study in terms of cost/benefit analysis is that running firm-sponsored customer satisfaction surveys is not a neutral activity, that customers participating in those surveys present positive behaviours towards the company when compared to the behaviour of customers not participating on those surveys. This study reinforces the findings of previous MME research (Bone et al., 2017; Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004; Dholakia, U. M. et al., 2010) that performing firm-sponsored customer satisfaction surveys have a positive impact on customers behaviours and business outcomes and it is necessary to consider those effects in terms of revenues, costs and, ultimately, in profitability. In this study, it was possible to observe that:

a) Customers that participated in the survey and did not receive a "thank you" message (TG3) presented higher profitability than customers in the CG.

b) Customers that participated in the survey, including customers that received a "thank you" message (TG2) presented lower defection and higher profitability than customers in CG.

These results are important considering the scope of the variable profitability to capture the value of the customers to the Utility, considering several aspects that are beyond defection, repurchase and complaints.

The second important conclusion for a cost/benefit analysis, and as an original contribution of this study to MME research, is that the positive impact is not limited to those customers that do answer. In fact, it was possible to observe that the customers that received the surveys and did not answer to them (TG1) presented a higher profitability than customers in the CG.

The third important conclusion for the cost/benefit analysis, and another original contribution of this study to MME research, is that the configuration of the firm-sponsored customers satisfaction survey in terms of the overall interaction with the company can have a positive impact on the customers' behaviour and on the business outcomes. In this study, it was possible to observe that:

a) Customers that received a "thank you" message following the participation on the firm-sponsored customer satisfaction survey (TG4+TG5) presented lower defection than customers that answered to the survey but did not receive the "thank you" message (TG3).

b) Customers that received a phone "thank you" message following the participation on the firm-sponsored customer satisfaction survey (TG5) presented higher repurchase and higher profitability than customers that received an e-mail "thank you" message following the participation on the firm-sponsored customer satisfaction survey (TG4).

Naturally, the positive outcomes measured in the experiment need to be balanced with the investment and costs necessary to provide additional customer experience (Kumar, 2017). In this case, it is important to note that, while e-mails have a very low marginal cost, running a contact centre involves very high costs (Johnston et al., 2021).

Another important conclusion for the cost/benefit analysis is related to the impact of tenure and satisfaction level on MME. Considering tenure, in this study it was possible to observe that:

a) The "Novice" customers of TG2 manifested a higher positive impact on defection (lower) than the "Experienced" customers of TG2.

b) The "Novice" customers of TG4+TG5 manifested a higher positive impact on defection (lower) than the "Experienced" customers of TG4+TG5.

c) The "Novice" customers of TG5 manifested a positive impact on repurchase (higher) and on profitability (higher) and there were not such positive impacts on "Experienced" customers of TG5.

These results and previous investigation on tenure as MME moderator point out to the importance of managing firm-sponsored customer satisfaction surveys according to the life cycle of the customers. The good news here is that it seems reasonable to assume that MME impact is stronger on "Novice" customers, in particular contributing to the reduction of defection and increase of profitability. This is even more important considering the increasing costs of customer acquisition (Majid, 2020).

Another important contribution resulted from the study of the influence of satisfaction (according to the answer to the survey) on the impact of firm-sponsored customer satisfaction surveys on business outcomes. Although not totally conclusive, it was possible to identify at least one case where the impact of the experience of participating in the survey (including the "thank you" message) on "Low Satisfaction" presented relevant results in terms of defection (lower). However, the case where the impact on "Low Satisfaction" customers that received a "thank you message" by e-mail was worse than the one that received the "thank you" message by e-mail was also reported. Further investigation is required, in particular considering the dynamic environment about the preference of persons in terms of means of contact with companies (Johnston et al., 2021).

Another important conclusion that can have an indirect impact in the cost/benefit analysis of the firm-sponsored customer satisfaction survey (considering possible penalties resulting from violation of GDPR) is to assure that this activity is covered by the consent of the customer to be contacted by the company. The formulation of the consent should be broad enough to consider the business outcomes impact and avoid a one that limits the consent to a mere marketing research purpose. As some authors (Dholakia, U. M., 2010) have pointed out, it does not seem possible to separate firm-sponsored customer satisfaction-related from the commercial activity of the company, in particular in terms of retention and customer service, with impact on profitability. This has implications not only for the company, but also for market research companies and providers of EFM solutions. Several trade and professional associations prohibit their members from trying to influence consumers' behaviours through marketing research (Dholakia, U. M. et al., 2004). In this study it was possible to observe that, in the case of the Utility, there was an impact of the firm-sponsored customer satisfaction survey on consumers' behaviours and business outcomes.

6.5. Research Objective 4 (RO4)

Research Objective 4 is "to present recommendations in order to maximise the value creation resulting from the use of firm-sponsored customer satisfaction surveys platform". Based on the previous discussion, it is now possible to present recommendations in order to maximise the value creation resulting from the use of firm-sponsored customer satisfaction surveys from a managerial perspective.

The conclusions of this study are specific to the Utility and it is not possible to extrapolate them to other companies. However, the conclusions of this study allow recommendations to be made,

which can be relevant not only for the Utility but also for other companies, regardless of the industry, for which customer satisfaction is a value creation driver.

Despite being obvious, the first recommendation is to test the impact of firm-sponsored customer satisfaction surveys on business outcomes. In fact, during the research study, it was possible to observe that the Utility did not run any similar study to determine the potential impact of the surveys on business outcomes. The only analysis known performed by the Utility was focused on the results of the survey, in order to report NPS and CSAT (ex. annual report). Surprisingly, this seems to be the normal practice among companies that run identical firm-sponsored customer satisfaction survey programmes. During this study, the researcher contacted more than 20 companies and none of them had planned to perform a cost/benefit analysis to their programmes. In the case of the Utility, this study showed that the omission does not allow the company to determine and to optimise the value of running such customer satisfaction survey programme.

The second recommendation is that, in order to maximise the value creation, the analysis should not be limited to the participants that answer to the surveys but it should also consider the holistic customer journey concerning the participation (or not) in the survey, including the *ex-ante* and *ex-post* interaction. Considering the experiment of this research, it was possible to observe a positive impact on profitability (higher) concerning customer that received the survey but did not reply (TG1) when compared with CG (that did not receive the survey). In addition, it was possible to observe that the group TG4+TG5 ("thank you" message after the participation in the survey) had lower defection compared to the group that did not receive the message (TG3) and the participants that received a "thank you" message by phone (TG5) showed higher repurchase, lower complaints and higher profitability when compared to participants that received a "thank you" message by e-mail (TG4).

The third recommendation is that the analysis of the impact of firm-sponsored customer satisfaction surveys on business outcomes should have a continuous nature, in order to allow the company to reflect changes in the inferences made by the customers. In fact, this study had a limited scope in terms of analysis and number of observations, thus extrapolations from its results should be considered with caution, also by the Utility. Because it was outside the scope, this study did not analyse the interaction with other aspects that research has shown already that can affect the MME and even generate negative impacts, as is the case of survey fatigue (Pecararo, 2012) and interaction with marketing communications and promotions (Flynn et al., 2017).

The fourth recommendation concerns the adoption of a wider approach in the study of the potential impacts of firm-sponsored customer satisfaction. In this study, the investigation was limited to the experiment manipulation of the independent variables and its impact on the dependent variables' defection, repurchase, complaints and profitability. However, the potential for value optimisation through cost/benefit analysis are almost endless, expanding not only the manipulation of independent variables (example, evaluating if the hour of sending the surveys influences response rates and customers' behaviours (Faught et al., 2004)), but also including the investigation of other dependent variables (example, referrals (Boles et al., 1997) and word-of-mouth (Gildin, 2012)).

The fifth recommendation is related to the investigation around the potential moderators of MME. Several authors have pointed out the need of additional research on this field (Dholakia, U. M., 2010). Although this study was not able to perform a regression analysis on the potential moderating effect of tenure and satisfaction, it was able to identify interesting findings about the impact on business outcomes (namely defection and profitability), when analysing the results, subdividing the customers according to tenure and satisfaction. More than to be aware of these possible effects and to incorporate those findings in their design of the firm-sponsored customer satisfaction survey, managers should invest in exploring the impact of different moderators (Dholakia, U. M., 2010).

The sixth recommendation is related to the importance of using experimental methods, field-based studies, like A/B testing in order to identify actionable opportunities to create value. A/B testing approach is very popular among technology companies, like Google, Amazon. Microsoft and Facebook and recognised as a source of continuous value creation (Savoia, 2019). For example, Kohavi & Thomke (2017) report that a simple A/B testing around the headline of Bing search engine was able to change consumers' behaviour and increase revenues up to 12%, being responsible for more than $100 million revenues/year in the US alone. In the context of this study, and using the same A/B testing approach around manipulation of independent variables and their impact on dependent variables, it was possible to identify sources of value not only by running the firm-sponsored customer satisfaction survey, but also considering the broader process (example, the impact of a "thank you" message after the customer reply to the survey and the different results achieved depending if the "thank you" message was transmitted by e-mail or phone). From this study, it is reasonable to assume that there are endless opportunities for discovering other potential sources of value while running a firm-sponsored customer satisfaction survey (Gallo, 2017; Jenkins, 2014; King et al., 2017).

And the seven and last recommendation is a very important one and it is intrinsically connected to the goals of the NTU DBA programme. The researcher's experience shows how there still

exists a relevant gap between academia and practice, although a great deal of value in closing that gap persists. Considering the managerial perspective, this research project reinforces two important insights: managers and companies should keep a close relationship with academia investigation on relevant business topics; and they should be open to collaborate in studies like this. As mentioned above, the Utility and other companies are still not aware of how they can improve the cost/benefit analysis of running firm-sponsored customer satisfaction surveys and to optimise the value potential. Building on the previous research, the expectation is that this research can create that awareness and motivate managers to take action. In addition, the challenges that the researcher faced during this project, in particular the limitations on data access and analysis, should motivate companies to invest all the more in the internal development of data science resources and skills. Those resources and skills can enable the creation of competitive advantages, exploring and improving statistical analysis of the data available at the company. If, despite all the limitations of this study, it was still possible to reach important conclusions on how to maximise value creation, it is reasonable to assume that ongoing and internal investigations on this field would yield increasing value.

CHAPTER 7: CONCLUSION

7.1. Summary of the Findings

This thesis was organised into seven chapters. In **Chapter 1**, the importance of the study being conducted was explained. Then, the research problem, research gap, research approach were discussed. Potential contributions of this study to practice and research were provided. The chapter finishes with the discussion of the aims, objectives and the structure of the study. **Chapter 2** provided a brief overview of the managerial evolution of customer satisfaction measurement as a component of business activity, highlighting trends and challenges, including the recent emergence of the Enterprise Feedback Management (EFM) industry. It also provides a background of the European energy retail market, in particular the challenges that energy companies face resulting from the liberalisation in terms of customer satisfaction management. **Chapter 3** covered the literature reviewed in order to address the research objective. It started by discussing the QBE theories, as the umbrella label for the MME theory. After reviewing the different possible theoretical explanations of MME concerning the impact of customer satisfaction surveys in respondents' behaviour, it concluded that inference-based explanation is the one that shows better fit with the occurrence of MME regarding firm-sponsored customer satisfaction surveys. Then, the study reflects on the moderators in the analysis of questioning impact on respondents' behaviours in the context of MME, in particular tenure with the company and level of satisfaction. Based on this review, a conceptual framework and research hypotheses are developed. Finally, the chapter concludes with the six hypotheses introduced for the purpose of this study and research model that have been designed to examine the relationship between firm-sponsored customer satisfaction surveys and the selected business outcomes: defection, repurchase, complaints and profitability. **Chapter 4** reflected on the research methodology implemented in this study, beginning with an overview of the research philosophy, approach and strategy. This is followed by the type of investigation and data collection methods used, including questionnaire design and sampling procedures, as well as the research design and a description of how the research was conducted. **Chapter 5** presents the findings from the study data collected, as described in the methodology chapter. It starts with pre-test experience results and analysis. Then, considering the results of the experiment After twelve months its occurrence, it is followed by an analysis of whether the hypotheses are accepted or rejected. **Chapter 6** discusses and explores the results of the extensive research undertaken in this study in the context of the four research objectives set out in Chapter 1. In the current **Chapter 7,** the main conclusions of the study are summarised, highlighting the

contributions made for both managerial practice and theory. Finally, the researcher's reflections on the study and recommendations for future research are presented.

Building on the previous research on MME and within the scope of this research project, the main conclusion of this study is the reinforcement of evidence about the impact of firm-sponsored customer satisfaction surveys on participants' behaviours and business outcomes. From the study conclusions, it is possible to highlight:

i)   customers participating in the surveys present lower defection and higher profitability than the control group (no survey);

ii)   customers that received the survey and did not reply to it present higher profitability than the control group;

iii)   customers that participate in the survey and receive a "thank you message" present lower defection than customers that participated and did not receive a "thank you message";

iv)   customers that received the "thank you message" by phone show higher repurchase and higher profitability than customers that received the "thank you message" by e-mail.

The analysis on the eventual moderator effect of tenure and satisfaction was not able to be performed according to the initial plan. Alternatively, the study investigated the influence of tenure and satisfaction on the impact of firm-sponsored customer satisfaction surveys and provided evidence for the difference between "Novice" and "Experimented" customers, "High Satisfaction" and "Low Satisfaction" customers.

From the conclusions of the experiment, relevant contributions were identified for a better understanding of MME, exploring some gaps in knowledge that have been identified, and presenting original contributions to MME research (in particular, the *"reception of the survey"* and *"thanking survey participation"*). In addition, several recommendations were provided that pay into the managerial perspective. Next, it summarised the main contributions of this study to practice and theory. Finally, it presented a personal reflection of the overall research project experience, as well as identification of limitations of the study and potential future research paths.

7.2. Contributions to Practice

As mentioned further above, customer satisfaction has assumed a central role in managerial practice, being recognised as a key driver of value creation of any business in competitive markets. After the market liberalisation, the Utility had to face the challenges of the competitive

142

environment, electing customer satisfaction as a key driver for value creation. To this end, measurement of customer satisfaction assumed a critical role. However, this study highlights that the measurement of customer satisfaction trough firm-sponsored survey is not a neutral activity. On the contrary, the conclusions of the experiment with the Utility reveal several cases of impact of the survey on customers' behaviour and business outcomes. From a managerial perspective, as explained in detail in previous section, this study has relevant contributions in order to improve the cost/benefit analysis of running such programmes. The most important contribution is to make managers aware that firm-sponsored customer satisfaction surveys may influence the behaviour of their customers and, consequently, the business outcomes. In the study, as previously described and under different scenarios of manipulation of independent variables, the observed effects with statistical significance were positive, in particular on the dependent variable of profitability.

Firstly, from a financial point of view, firm-sponsored customer satisfaction surveys cannot continue to be considered only a cost as it happens with the Utility and other companies worldwide. Namely using A/B experimentation and following adequate research designs, managers should investigate the potential impact (positive and/or negative) of firm-sponsored customer satisfaction surveys on customers' behaviour and on business outcomes.

Secondly, as performed in this study, the investigation of the potential impact of firm-sponsored customer satisfaction surveys should not be limited to the study of the direct action of answering to the survey. It is important to consider the holistic experience around the survey, *ex-ante* and *ex-post*. It is important to highlight that this study points to some hypotheses that can be easily replicated by managers concerning their firm-sponsored customer satisfaction surveys (receiving the survey, receiving a "thank you" message after participation by e-mail or phone) but there are many other variables that can and should be tested.

Thirdly, although inconclusive on this matter, this study states that managers should pursuit the investigation of potential moderators of the MME (Dholakia, U. M., 2010). Like in other areas of marketing, treating all customers in the same way can be a dangerous road and limit the capacity of the company to create value and create sustainable competitive advantages (Kumar, 2017).

Fourth, this study reinforces the conclusion of previous research (Dholakia, U. M., 2010) that points out that is not possible to separate firm-sponsored customer satisfaction-related marketing research and other marketing activities, particularly sales and promotions. This has implications not only for the company (for example, in terms of forecasting and prediction models), but also for market research companies and providers of EFM solutions.

Finally, to avoid repetition, a summary of the seven main recommendations for managers that were developed in the previous Chapter is presented:

1. Test the impact of firm-sponsored customer satisfaction surveys on business outcomes.
2. Implement a holistic approach to the management of the firm-sponsored customer satisfaction surveys, considering the *ex-ante* and *ex-post* interactions.
3. Assure a continuous analysis of the impact of firm-sponsored customer satisfaction surveys on business outcomes.
4. Adopt a wider approach in the investigation of the relevant dependent variables.
5. Investigate and determine the potential moderators of the impact of firm-sponsored customer satisfaction surveys on business outcomes.
6. Explore the potential of A/B testing techniques to fine-tune and optimise the cost/benefit ratio of the firm-sponsored customer satisfaction survey.
7. Assure adequate resources in terms of specific data analytics skills and resources in order to create a competitive advantage through firm-sponsored customer satisfaction surveys.

7.3. Contributions to Theory

From a theoretical point of view, this research contributed to a better understanding of MME as the theorical framework that studies the influence of firm-sponsored customer satisfaction surveys on customers' behaviours and business outcomes. This study offers additional support to validate the occurrence of MME, since it was possible to observe, with statistical significance, the impact of firm-sponsored customer satisfaction surveys on customers' behaviours and business outcomes. In addition, this study also offers additional support to the inference-based explanation about the occurrence of the MME (i.e. the effect occurs due to the inferences made by clients about the motivations underpinning the satisfaction survey process). At the same time, it presents support to reject the accessibility-based explanations (i.e. that questions make attitudes more accessible and that they will influence the performance of the behaviours associated with those attitudes). In fact, an accessibility-based explanation argues that if customers express a positive attitude when answering, such as reporting high levels of satisfaction, they will subsequently show enhanced behaviour. When their attitude is negative, the behaviour will be dampened. However, this study points in a different direction:

i)   As an original contribution of this study, it was possible to observe that, at least, the mere reception of the survey had a positive impact on profitability (which is not compatible with the accessibility explanation, but it is compatible with inference-based explanation);

ii)   As another original contribution, it was possible to observe that, although the group of customers answering to the survey presented higher profitability than control group (no survey), within this group the customers that received a "thank you" message showed lower defection than the ones that did not received the message (which is not explained by accessibility theory but it is compatible with inference-explanation);

iii)   By the same token, the fact that the customers that received a "thank you" message by phone presented higher repurchase, lower complaints and higher profitability than customers that received a "thank you" message by e-mail is hardly explained by accessibility-explanation but can be explained by inference-explanation; iv) customers with "low satisfaction" present mixed results, in some situations they present negative impacts (example, H6.2 – Defection) but in other situations they present meaningful positive results (example, H6.1 – defection).

In conclusion, this study offers additional support to the autonomy of the study of MME (in the QBE context). Furthermore, as suggested by Dholakia (2010), this study also contributes to argue that, within the MME research stream, it is important to distinguish the different approaches, in particular between customer satisfaction surveys and purchase intention measurement (Dholakia, U. M., 2010; Dholakia, U. M. et al., 2004). In that sense, while concerning the purchase intentions surveys, the accessibility-based explanation continues to be the dominant theory (Wilding et al., 2016), concerning the firm-sponsored customer satisfaction surveys, this study is one more contribution to sustain the inference-based explanation (Bone et al., 2017; Flynn et al., 2017).

7.4. Reflections and Limitations

According to the NTU DBA Course Handbook (Nottingham Trent University, 2016, p. 8), the DBA is aimed at improving business and managerial practice. Students should:

- Develop their personal intellectual and academic abilities,
- Study work-based issues or problems,
- Develop their personal managerial practice.

Self-reflecting on the journey started in September 2016, the researcher considers that all those goals were achieved and expanded. In fact, in line with the DBA objectives, this research contributed to bridge the gap between academic knowledge and managerial practice (Anderson, L. et al., 2015; Locke & Spender, 2011; Thorpe & Rawlinson, 2013), fulfilling the 4 functions of scholarship (Boyer et al., 1990): discovery (research); integration (relating the new knowledge with previous knowledge to solve problems), application (putting the knowledge

into practice) and teaching (communicating knowledge). Without entering in the specific debate on the relevance of academic impact versus the managerial practice application (Clegg, 2002; Gummesson, 2000; Hinings & Greenwood, 2002; Reay et al., 2009; Rousseau, 2006; Tranfield & Starkey, 1998), but framing the present research in Mode 2 of knowledge production framework (Gibbons et al., 1994), the research contributed to the body of knowledge, focusing in solving the problem described in this document and considering the knowledge integration through an evidence-based analysis approach and a dialectic process (Reay et al., 2009; Ven, Van de, 2007).

From a managerial standpoint, and as explained above, the results of this study are important because they allow to better assess the value of firm-sponsored customer satisfaction surveys, pointing out several findings with impact on the benefits (in particular, profitability), but also highlighting the costs and investments that are necessary to fully explore the value creation of such programmes (Kumar, 2017). As summarised above, from a theory contribution perspective, the results of this study are also important, since it reinforces the research on MME, supporting the inferenced-based explanation and identifies new streams of academic research.

Every study has its own advantages and limitations (Rahman, 2016). This study is no exception. In fact, it is possible to argue that some of its advantages are only possible with the acceptance of its limitations. Given the research and DBA programme objectives, the research design based on a field-experiment allowed a greater proximity between the findings of the study and the managerial practice and its challenges (Malhotra et al., 2017). However, as mentioned before, one of the biggest challenges of this study was the implementation of the experiment and access to data in the context of changes in the relationship between the researcher and the Utility during the DBA programme which covers more than 5 years, since the start until the submission of the thesis. In the end, this reality influenced the concrete execution of the research plan. In particular, it is important to point out the limitations of the sample, scope and timing of the information that was made available by the Utility. On one hand, it limited the potential analysis of the impact firm-sponsored customer satisfaction surveys on other customers' behaviours and business outcomes. On the other hand, it did not allow to explore more robust solutions in terms of methods of analysis, as it was the case with the moderator variables' investigation, where it was not possible to perform the intended regression analysis.

In any case, the "silver lining" should be highlighted, since the challenges that emerged from the execution of the initial research plan allowed the researcher to challenge himself by searching for solutions. In this sense, the limitations of this study can also offer positive contributions: i) for future researchers aiming to develop identical research design, in particular

field-based research in collaboration with companies; and ii) for the identification of future research opportunities (which will be discuss specifically in the last section of this study).

Discussing specific perceived limitations of this research, it seems important to reflect upon the threats to external validity. The first limitation results from the interaction of selection and treatment, since this research was based on an experiment, with limited access to information about the customers involved in the experiment. However, the size of the experimental and control groups and the randomisation assignment of the clients to those groups give confidence that the conclusions are robust enough to generalise the results to the context of the Utility. Another limitation emerges from the interaction between setting and treatment. In fact, it is necessary to take into account that the results of the study can be influenced by economic, political and cultural factors (Dholakia, U. M., 2010; Doorn, van et al., 2013; Haan, De et al., 2015; Morgan, N. A. & Rego, 2006). Therefore, it is not possible to generalise the result of this study to other settings. However, this is a limitation that can stimulate further research on this topic under different settings.

Finally, concerning the external validity related to the interaction of history and treatment, it also recognised that the research cannot assure its valid application of the findings to past and future realities. This is a common limitation of quantitative and experimental research and the way to overcome this limitation is trough replication (Bryman & Bell, E., 2015). In addition, as mentioned in section 6.1, it is important to highlight that this research was performed partially during the Covid-19 pandemic (the experiment started in January 2020 and ended in January 2021). The researcher did not have access to information from the Utility in order to assess this impact on the consumers' behaviour, in particular to determine the pandemic's influence on the results of the dependent variables. In that sense, this is an aspect that could be studied in future research.

7.5. Suggestions for Future Research

In this section, I offer several recommendations to marketing scholars who may be interested in further pursuing this thesis' conclusions. These recommendations could provide a pathway for encouraging consumer behaviour research in thus far unexplored directions.

Given the limitations of the study, it would be interesting to repeat the analysis in the context of the Utility, with broader access in terms of information, not only in terms of sample size, but also in terms of access to information that could allow extrapolation of the results to the Utility's population. In addition, given the findings of the present study, it is admitted that the findings can be relevant for other utilities, particularly in the EU, and even for other companies, regardless of the industry, for which customer satisfaction is a value-creation driver.

Since it was not possible to have access to the Utility's financial information on the benefits, investments and costs involved in the management of the firm-sponsored customer satisfaction survey programme, it would be interesting to develop future research that could have access to that information. Also, future research is invited to continue to explore moderation effects in MME. In fact, in the present study the initial plan of exploring moderator effects (tenure and satisfaction) through regression analysis was not possible to be executed due to limitations on the data made available by the Utility. However, through this study and using non-parametric methods to measure the impact of tenure and satisfaction on the relationship between the independent and dependent variables, it was possible to collect evidences that reinforce the call to additional research on this field, not only concerning tenure and satisfaction, but also other potential moderator interactions (Dholakia, U. M., 2010). Finally, it would be interesting to study the impact of Covid-19 on the consumers' behaviours when compared to "normal" business context.

In addition, future research could adopt a longitudinal method that facilitates a series of data collection sessions over a period of time. With this research setting, a researcher might be able to collect higher quantity and quality data to investigate the impact of firm-sponsored customer satisfaction survey on customers' behaviour and on business outcomes, including the above-mentioned possible moderators of the MME (Bryman & Bell, E., 2015; Malhotra et al., 2017).

ANNEX 1 – Examples of the Utility Product Portfolio

Electricity contract - https://www.edp.pt/particulares/energia/eletricidade/

Natural gas contract - https://www.edp.pt/particulares/energia/gas-eletricidade/

Invoice insurance - https://www.edp.pt/particulares/servicos/fatura-segura/

	Carência	Pagamentos	Principais Exclusões*
Desemprego involuntário	60 dias	400€ decorridos 30 dias + 400€ decorridos 210 dias	Não renovação do contrato de trabalho a termo
Incapacidade temporária para trabalho	60 dias	400€ decorridos 30 dias + 400€ decorridos 210 dias	Doenças pré-existentes à data de subscrição do seguro
Invalidez absoluta e definitiva acidental Morte acidental	Inexistente	800€ ≤ 65 anos 1200€ > 65 anos	Qualquer situação que não tenha carácter acidental

Health insurance - https://www.edp.pt/particulares/servicos/plano-edp-saude/

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E-mobility - https://www.edp.pt/particulares/servicos/mobilidade-eletrica/

ANNEX 2 – Literature overview – MME on customer satisfaction surveys

Authors	Behavior Tested	Questions	Method	Results	Moderators	Industry	Theoretical explanation
Flynn et al. 2017I8B6:	Purchase (amount and interpurchase time)	Satisfaction with visit (1-5 scale) Open-ended format question for comments	**Field Study:** Posttransaction satisfaction surveys on purchase behavior using field data. No rewards.	Receiving a satisfaction survey after the prior transaction had a significant positive effect on both purchase amount and interpurchase time. Negative interaction between survey frequency and a recent satisfaction survey for purchase amount and a positive interaction between survey frequency and receiving a satisfaction survey for interpurchase time. Negative interaction between satisfaction surveys and other direct contacts	Survey frequency Prior cross purchasing Direct contacts	Auto industry	Inference-based explanation
Bone et al. (2017)	**Study 1:** Purchase (repurchase within one year of the solicitation) **Study 2:** Purchase (repurchase within 30 days of the solicitation)	**Study 1:** Open-ended positive solicitation (condition tested); Net Promoter Score (Overall and Photographer); Customer Confidence; Wait Time Satisfaction; Operational Checks (0-5 scale). Plus "yes or no" service scripts questions. **Study 2:** Questions: Purchase intentions; Willingness to recommend; Defense of the brand; Communal intentions (0-10 scale).	**Study 1 - Field Study:** Survey post-service survey (toll-free number printed on their receipts). For their participation, respondents received a promotion to be applied to their next visit. Customers assigned to one of two experimental conditions: with and without the open-ended positive solicitation. All other survey questions and order were identical to the baseline condition. **Study 2 - Field Study:** Online survey (after a free trial version of the software program). Four customer groups: no survey invitation; survey invitation but no answer; survey completed in open-ended positive condition, and survey completed with no open-ended positive condition. By the end of the trial, all customers were given a promotional code to buy the product.	**Study 1:** Survey completion was a significant predictor of repurchase Using an open-ended positive solicitation at the beginning of the survey contributed additional predictive power to the model **Study 2:** Support for all three effects (solicitation, measurement, and open-ended positive solicitation): smallest lift for the mere solicitation effect; a substantially larger boost for the measurement effect; and those gains can be further extended through the positive solicitation effect.	**Study 1:** Purchase frequency Previous survey completion **Study 2:** Purchase frequency Previous survey completion	**Study 1:** B2C large U.S. portrait studio retail chain **Study 2:** B2B Software Manufacturer	Consistency-based explanation (for the MME+)
Dholakia et al. (2010)	**Study 1:** Purchase (repurchase and interpurchase time) how frequently customers returned for successive quick lube preventive maintenance service visits, and (2) how likely customers were to redeem the firm's coupons. **Study 2:** Inferences of service thoroughness **Study 3:** Inferences of service thoroughness and overall satisfaction with the preventive maintenance service at both four months and nine months following survey participation	**Study 1:** Questions: Customer Satisfaction with service; Service Quality (training, manners, care, speed) (1-10 scale). Plus "yes or no" service scripts questions, time of service and open-ended questions (recommendation). **Study 2:** Same as Study 1 + Seven point scale survey to the service thoroughness (Reported recall of specific service elements +Perceived service thoroughness + Control measures (month in which they purchased their most recent service, age of their vehicle and their own age). **Study 3:** Initial survey was the same as that used in Study 1. The second survey same as in Study 2, with two exceptions (used five-point agree-disagree rating scales, instead of the seven- point scales in the first study).	**Study 1 - Field Study:** Phone survey within seven days after they visited one of the firm's stores for quick lube preventive maintenance service. No rewards. **Study 2 - Laboratory experiment:** Students who received course credit for completing the experiment (students who had recently purchased automotive quick lube service for their vehicle). In the 'survey' condition were administered a post-service experience survey (sames as Study 1). Respondents in the 'no survey' condition read the cover story, recalled their service visit, answered when and from whom they had purchased the automotive quick lube preventive maintenance service, and completed the evaluative measures without any reference to a post-service experience survey. No rewards. **Study 3 - Field Study:** Within seven days after a service visit, customers were randomly chosen by the firm to either participate in a telephone post-service experience survey ("Surveyed" group), or to be withheld from survey participation ("Not Surveyed" group). The survey was the same as that used in Study 1. All customers in both groups were randomly assigned to be re-surveyed either four or nine months after the initial satisfaction survey and focal service visit. The second survey completed by all study participants employed the same measures of service thoroughness perceptions as in Study 2, with two exceptions (used five-point agree-disagree rating scales, instead of the seven- point scales in the first study; respondents were given the specific date of their focal service visit, either four or nine months earlier, and then asked to provide their evaluations).	**Study 1:** Participants delayed their very next service visit for quick lube preventive maintenance even when expressing high satisfaction, but accelerate later service visits when compared to non-participants, and are more likely to redeem coupons on all post-survey service visits. **Study 2:** Participants report: (1) recalling more specific service elements of a quick lube visit, and (2) perceptions of greater service thoroughness, when compared to non-participants. **Study 3:** Greater inferences of service thoroughness persist up through the next service visit, but diminish thereafter.	Not identified	**Study 1, 2 & 3:** Large U.S. automotive services provider	Inference-based explanation

Authors	Behavior Tested	Questions	Method	Results	Moderators	Industry	Theoretical explanation
Ofir et al. (2009)	Study 1, 2 and 3: Satisfaction	**Study 1:** Survey: (1) listing of thoughts that come to mind while shopping at the store; (2) six items pertaining to service, including employee courtesy, employee willingness to help, professionalism of employees, waiting time, convenience in shopping, and quality of service; (3) satisfaction with the shopping trip and satisfaction with the service; and (4) intention to recommend the store to friends. All measures, except for thought listing, used seven-point scales. **Study 2:** Recall of name of the products + Survey same as Study 1 + Respondents were also asked whether, while shopping at the store, they paid more attention to positive (7) or negative (1) aspects. **Study 3:** Same as Study 2	**Study 1 - Field Study:** Survey immediately after shopping at a supermarket and/or 4–5 days after shopping at that supermarket. Four conditions (two experimental groups and two control groups). Shoppers assigned to the two experimental conditions were informed before entering the supermarket that they would later be asked several questions about customer service. In one experimental group (Condition 1), consumers were interviewed immediately after their shopping trip and again, by telephone, 4–5 days later. In the second experimental group (Condition 2), consumers were interviewed by telephone only once, 4–5 days after shopping. Respondents in the control groups (Condition 3 and 4) were not informed about the upcoming evaluation task before entering the store. No rewards. **Study 2 - Field Study:** In addition to the standard expected-evaluation and control groups, some shoppers were asked to recall product names either before entering the store (after being told about the evaluation task) or immediately after shopping (before reporting their evaluations). All were interviewed immediately after they exited the store. No rewards. **Study 3 - Field Study:** Shoppers were randomly assigned to one of five conditions. The expected-evaluation (Condition 1) and control (Condition 2) groups were the same as in the prior studies. Respondents in the known-effect group (Condition 3) were also told of the upcoming evaluation task. However, they were then informed of a previous study that included two groups, one that had been told about the evaluation task and one that had not, which showed that the former group's evaluations were significantly lower than the latter's. Respondents in the predicted-effect group (Condition 4) were also provided with a description of the previous study. However, instead of being told the outcome, they were asked for their opinions as to whether the subsequent satis-faction with the store was the same in both groups or whether one of the two tended (after the store visit) to be more satisfied than the other. Respondents assigned to the feedback-use group (Condition 5) answered (immediately after being told about the subsequent evaluation task) two questions on seven-point scales: (1) "To what extent do you expect the supermarket to listen to customers' feedback?" and (2) "To what extent do you believe that the supermarket's management regards customers' feedback as important and useful?". No rewards.	**Study 1:** The evaluations of participants who expected to evaluate and were interviewed immediately after shopping were significantly lower than the evaluations of those in the control group. The evaluations of those in a second experimental group, who expected to evaluate but were interviewed only 4–5 days after shopping, were statistically indistinguishable from the evaluations of those who expected to evaluate and were interviewed at both times. **Study 2:** The results indicated that cognitive load before entering the store statistically significantly decreased the negative effect of expecting to evaluate, whereas cognitive load after completing the store visit did not. **Study 3:** The results show the robustness of the negative bias created when consumers are told in advance to form evaluations of marketers' performance. The only group who received explicit information regarding that bias did not show it, whereas other procedures that were likely to enhance consumers' task involvement and cause them to consider possible task effects failed to correct the negative bias of expected evaluations.	Not identified	Study 1, 2 & 3: Supermarket - Israel, Korea, and the United States	Inference-based explanation/ Negativity enhancement
Borle et al. (2007)	Services purchases; Responsiveness to promotions; Interpurchase time; Spending across customers.	The survey identified the firm as the survey's sponsor, and then asked, among others, a question regarding the customer's overall satisfaction with the service visit (10 point scale). No additional details were provided about the questions.	**Field Study** Firm survey within 7 days from service. Customers that participate did not receive other survey within a year. Results based on a quarter of activity. A control group did not receive survey. The survey was conducted by telephone; it first identified the firm as the survey's sponsor, and then asked, among others, a question regarding the customer's overall satisfaction with the service visit. No rewards.	Results revealed a substantial positive relationship between satisfaction survey participation and all the customer behaviors studied. Assuming a causal relationship, the study also found that the effects of satisfaction survey participation vary across customers and stores, and over time. The effects of survey participation over time reveal that the increase in both number of services purchased and amount spent postsurvey starts wearing off within a year after the survey, but the increase in number of promotions redeemed and reduction in interpurchase times persists even a year afterward.	Customer characteristics (tenure with the firm and the age of his or her car, demographic variables such as age, gender, household income, and household size). Company Characteristics (whether the store was company owned or franchisee owned, whether it had a customer lounge, the number of service bays in the store, and a measure of throughput times at the store).	U.S. automotive services	Inference-based explanation
Ofir and Simonson (2007)	Study 1, 2, 3 and 4 Satisfaction	**Study 1** (7 point scales): (1) expected service quality, (2) politeness of store employees, (3(employees' willingness to assist shoppers, (4) employees' professionalism, (5) length of wait at the checkout, (6) convenience of product display, (7) level of service, (8) overall satisfaction with the service and (9) overall satisfaction with the shopping visit, (10) likelihood that they would recommend the store to friends. When participants exited the store, those in the stated-expectations group rated the store using the same survey before. Respondents were also asked whether they paid more attention to "positive" (7) or "negative" (1) aspects while shopping at the store. **Study 2:** (7 point scale): Stated expectations pre-survey: expectations with respect to service and overall expected evaluation of the store. General survey: Service (cleanliness, professionalism of employees, product variety, and service quality), overall store evaluation on two items (negative/positive and bad/good), and whether they would recommend the store to friends. Respondents were also asked whether they paid more attention to "positive" (7) or "negative" (1) aspects while shopping at the store. **Study 3:** Open-ended question about what they could recall from shopping experience. Then, evaluated the store visit in terms of service, satisfaction, and likelihood of recommendation (similar to Study 1). Finally, respondents indicated whether they expected to be asked about their shopping experience at the supermarket and whether they paid more attention to "negative" (1) or "positive" (7) aspects while shopping. **Study 4** Those in the stated-expectations group were asked to "indicate your expectations regarding the service that you will receive during your visit today at the supermarket." Then , same questions as in Study 1. There were two groups in which respondents evaluated the store's past performance before entering the store. Groups 1 provided ratings on the same nine items we used in the stated-expectations group. Group 2 evaluated the supermarket's past performance (before they entered the store) (1) the level of service, (2) satisfaction with service, and (3) overall sat- isfaction in previous visits to the store. Respondents in all four groups were asked the same questions after they exited the supermarket (same as Study 3).	**Study 1 - Field study:** Two customer groups: shoppers who state their expectations for a shopping experience before entering a supermarket and shoppers in a control group who are interviewed only when they exit the supermarket. Shoppers were interviewed at the entrance to a supermarket. No rewards. **Study 2 - Laboratory experiment:** The respondents were interviewed at their homes or offices. They were asked to evaluate a new (fictitious) drugstore chain on the basis of a newspaper review of the chain's first store. Respondents were randomly assigned to the stated-expectations or control group. Participants in the stated-expectations group were told in advance that they would be shown a newspaper review of the store. Before reading the article, these respondents stated their expectations with respect to service and overall expected evaluation of the store. Respondents in the control group were given the same introduction but were not asked to state their expectations for the store. No rewards **Study 3 - Field Study:** Included four experimental groups: a control and three different stated-expectations groups. In addition to the standard stated-expectations group, the other two groups stated expectations (also before entering the supermarket) about either the duty-free shop in Israel's main airport (known for favourable evaluations) or a service center of the largest Israeli communication company (known for unfavourable evaluations). After shopping, they were surveyed about the shopping experience. No rewards. **Study 4 - Field Study:** The respondents were told that the study was part of university graduate students' research. Participants were randomly assigned to one of four groups, including a control group, a stated- expectations group, and two groups in which respondents evaluated (before shopping) the supermarket's past performance.	**Study 1:** After the shopping visit, participants in the stated-expectations group evaluated the supermarket more negatively than those in the control group. **Study 2:** The results show that not only do stated expectations lead to a focus on negative aspects, but stating expectations also affects the encoding and interpretation of the same items of information. Participants who stated expectations about the store subsequently rated the same store features lower (i.e., more negative) than the control group. **Study 3** The results suggest that both a contrast effect and a negative effect of stating expectations about the target (supermarket) contributed to the pattern of findings a contrast effect relative to a reference point can affect evaluations of the target experience, a contrast effect cannot account for the robust nega- tive effect of stating expectations about the target on post- experience evaluations. **Study 4** Unlike the (negative) effect of stating expectations, providing past evaluations of the store tended to produce more positive postpurchase evaluations. However, the study also supports the assumption that (prepurchase) past-performance evaluations are indistinguishable from the stated expectations. Process data confirm that the two tasks trigger different evaluation processes, perhaps reflecting the forward-looking perspective of stated expectations and the backward-looking focus of past-performance evaluations.	Not identified	Study 1, 2, 3 and 4: Supermarket - Israel, Korea, and the United States	Attitude-based explanation/ Negativity Enhancement

154

Authors	Behavior Tested	Questions	Method	Results	Moderators	Industry	Theoretical explanation
Dholakia et al. (2004)	Frequency of service use (the number of service visits per year) Purchase amount (the total dollar amount of purchases annual) Number of services purchased per visit Coupon redemption	Respondents were then asked to rate their overall satisfaction with the service visit and ten specific service quality attributes (1-10 scale)	**Field study** The experimental group consisted of randomly selected customers who had participated in the firm's ongoing customer satisfaction survey during a particular quarter; the control group consisted of a matching group of randomly selected customers who did not participate in any firm-sponsored survey. Behavioral measures of these customers from the firm's customer database for a six-year period prior to the survey (presurvey measures), and for a one-year period after the survey (postsurvey measures) to test the research hypotheses. Randomly chosen customers participated in a customer satisfaction survey within seven days after a service visit. Conducted by telephone, interviewers informed the customers that they were calling on behalf of the company. No rewards.	For annualized frequency of service use, the high satisfaction group used the firm's services significantly more times than the control group. The low satisfaction group also engaged in more postsurvey annualized service visits to the firm than the control group. This pattern of results was repeated for two of the remaining three dependent measures: number of services purchased per visit and likelihood of coupon use. The difference for the remaining dependent measure, annualized purchase amount was not statistically significant for the low satisfaction comparison group. Regarding the likelihood of coupon redemption, all three experimental customer groups (low, medium, and high satisfaction) had significantly higher probabilities of coupon redemption postsurvey than the control group. Considering high experience customers first, a planned contrast showed that the low satisfaction group visited fewer times postsurvey than the control group. In contrast, for the firm's newer customers, the contrast showed that the low satisfaction group was significantly higher than the control group.	Customers' experience level with the company	U.S. automotive services	Inference-based explanation
Dholakia and Morwitz (2002)	Defection; Total account ownership; Profitability	The survey was conducted by telephone. 7 point scale on program features (e.g. estate planning services, consolidation and monitoring of accounts, retirement planning services) followed by the general question, "Overall how satisfied are you with the (financial institution name)?"	**Field study** A two-phase pretest-posttest experimental design. The survey was conducted by telephone. To focus exclusively on the influence of satisfaction measurement on subsequent customer behaviors, the study asked no questions pertaining to future behavioral intentions. The two groups were well matched on both age of primary head of household and average monthly profitability. Following completion of the satisfaction study, all of the households in both groups were withheld from any direct marketing activity for a period of one year. No rewards. Duration of measurement effects over a one-year period following satisfaction measurement. Key customer performance metrics were collected from the firm's customer database at the start of the study (referred to as baseline measures) as well as one year later (referred to as one-year measures) for all households in both groups.	The experiment group purchased more than control group, defected less and opened more accounts than control group. The experiment show a better profitability profile than control group (but without statistic relevance). The results show that the positive effect of measuring satisfaction on purchasing increases over the first six months and then, although still large, decreases in magnitude thereafter. The results show that the effect of satisfaction measurement on defection increases for eight months after the survey and then, although still large, reduces in magnitude.	Not identified	Financial Services US	Attitude-based explanation
Ofir and Simonson (2001)	Study 1, 2, 3, 4 and 5: Satisfaction	**Study 1:** Expectations group: (1) "How long do you think it will take the company to contact you and start treat- ing the problem?" and (2) "How long do you think it will take to solve the problem to your satisfaction?" All customers (five-point scales): (1) how well the problem was addressed, (2) response time, (3) the time taken to solve the problem, (4) the technician's courtesy, and (5) the level of assistance provided by the technician, (6) overall satisfaction with the service. Finally, they were asked if the problem had been solved. **Study 2:** Satisfaction questions (7 point scale): (1) "Overall, how satisfied are you with the service provided by the electric utility?" and (2) "Please indicate your overall evaluation of the electric utility" **Study 3:** Questions: (I) employee courtesy, (2) store cleanliness, (3) wait-ing time, (4) product selection, (5) professionalism of the cashier, (6) product display, (7) satisfaction with the store's service and satisfaction for the particular visit to the store (10 point scale) **Study 4:** Questions: "What is your evaluation of the magazine based on the professionalism and quality of the writing, grammar, language, and editing of the article?" (7 point scale). Next, evaluate the magazine on the basis of the views that were expressed in the article (7 point scale). This was followed by : "Assuming you could subscribe to the magazine that published this article, how likely would you be to purchase a subscription?" (7 point scale). **Study 5** Questions: Listing or thoughts that came to mind while respondents shopped at the store. Then: (1) employee courtesy. (2) employee willingness to help. (3) professionalism of employees, (4) waiting time, (5) convenience in shop- ping, and (6) quality of the service, (7) Next: satisfaction with the shopping trip and (2) satisfaction with the service, (8) intention to recommend the store to friends; and (9) whether respondents paid attention mainly to negative or positive aspects of the service while shopping in the store (7 point scale).	**Study 1 - Field Study:** Customers who called the center with a request for service were randomly assigned to one of four conditions in a 2 (evaluations expected or not) x 2 (expectations stated or not). Of these respondents, a group was contacted by the experimenters soon after they called the service center, and the manipulations were applied. In the expected evaluation group, customers were informed that after receiving the service they would be contacted again and asked to evaluate their level of satisfaction with the service. No rewards. **Study 2 - Field Study:** Consumers were randomly assigned to either the expected evaluation or control group. Consumers were contacted by telephone twice, one month apart. Each time, respondents were asked about their levels of satisfaction with the service. In the expected evaluation group, customers were informed at the end of the first call that they would be contacted again one month later to obtain their evaluations of the service. No rewards. **Study 3 - Field Study:** Consumers were randomly assigned to one of five conditions in a 2 (evaluation expected or not) X 2 (positive/negative expectations) between-subjects design, plus a control group. Consumers in the expected evaluation task were informed before entering the supermarket that after completing their shopping they would be asked several questions regarding customer service. No rewards. **Study 4 - Field Study:** Respondents were randomly assigned to one of 2 conditions in a 3 (evaluation task) x 2 (actual quality) x 2 (expectations) between-subjects design. After introductory instructions, respondents read an article and then answered several questions, including manipulation check items and article evaluation measures. The respondents received two dollars each for their participation. **Study 5 - Field Study** Respondents were randomly assigned to one of six groups (5 experimental conditions and 1 control group). Respondents in the experimental groups received instructions before entering the store. After exiting the store, all respondents, including those in the control group, completed a short questionnaire. In two of the experimental conditions, respondents were given information that was designed to create either positive or negative expectations. In the expected evaluations condition, consumers were told that after completing their shopping they would be asked several questions about the store's service. In the two remaining conditions, respondents were asked to pay special attention to either the positive or the negative aspects of the service. No rewards.	**Study 1** Customers who had expected to evaluate the service were significantly less satisfied than those who had not been informed of the subsequent evaluation task **Study 2** When respondents were first contacted, there were no differences in the evaluations of respondents in the two groups. However, when respondents were contacted a month later, those who expected to evaluate provided more negative evaluations than those who had not been informed of the subsequent evaluation task. **Study 3** Positive (manipulated) expectations generated more-positive service evaluations than negative expectations. In the positive expectations group, respondents who expected to evaluate rated the supermarket less favorably, consistent with the results of the preceding studies. However, in the negative expectations group, the average expected evaluation was slightly higher in the group that expected to evaluate. **Study 4** Regarding the evaluation manipulation, respondents in the expected evaluation group were more likely to focus on the writing quality as opposed to the content of the article than both the control and the delayed instructions group. **Study 5** Respondents who had high (low) expectations or were told to focus on positive (negative) aspects tended to evaluate the service more positively (negatively) and to have more-positive (negative) thoughts while shopping. Respondents who expected to evaluate but were not given any instructions on how to evaluate and what to expect were much more similar on all measures to the negative focus and low expectations groups.	**Study 4** article quality, expected evaluation, manipulated expectations, sex, and need for cognition	**Study 1** Software service center of a large computer company. **Study 2** Electric Utility **Study 3** Supermarket **Study 4** Science museum **Study 5** Drugstore	Attitude-based explanation/ Negativity Enhancement

ANNEX 3 – Post-Service Customer Satisfaction Survey of Utility

1	Likelihood to Recommend	Based on your recent interaction with our call centre, how likely are you to recommend [COMPANY_NAME] to a friend, family member or colleague?	*0 – Not likely ... 10 – Very likely*
2	Reason for score comment	What is the primary reason for your score?	
3	Overall satisfaction	How satisfied were you with the services provided by our call centre?	*0 – Not satisfied 10 – Very Satisfied*
	[Effort perception	Based on this recent experience, how would you rate your satisfaction on the following areas?	
4	Overall effort	The amount of effort I was required to put in	*0 – Not satisfied 10 – Very Satisfied*
5	Wait time	Waiting time on the line	
6	Duration of the call	Speed of dealing with enquiry	
	Operator satisfaction	Thinking of your call with [NAME OF CONTACT CENTRE OPERATOR], how would you rate the call operator on the following areas?	
7	Overall satisfaction with operator	Overall satisfaction with the call operator	*0 – Not satisfied 10 – Very Satisfied*
8	Knowledge	Level of knowledge	
9	Empathy	Professionalism & courtesy	
10	Clarity of the information provided by the operator	Quality of information provided	
11	Problem resolution	Was your query resolved at a first try? & IF NOT: Why? - I didn't have the required information with me/I didn't pass the security protocol/the line was cut/Other (OPEN ANSWER)	*Yes, No*
12	Other comments	Do you have any other comments to help us improve?	

ANNEX 4 – Script of the "Thank You" message after customer replied to the customer satisfaction survey (e-mail and phone)

"Dear XXXX,

We are contacting you again because your opinion is really important to us. Thank you for your support and time. Your feedback and your opinion will help us to improve our products and services. We are committed to provide you the best possible service and your feedback is critical for us to know what we do well and the things that we need to improve.

Thank you for the trust.

Signature – CEO of Utility"

ANNEX 5 – Letter of approval of Research by the Utility

EDP Comercial
Conselho de Administração
Av. 24 de Julho, Nº 12
1249-300 LISBOA
PORTUGAL

Nottingham Trent University
Doctorate Business Administration Office
50 Shakespeare Street
Nottingham NG1 4FQ/ England

Lisbon, 22nd October 2018

Subject: Confirmation DBA Research

Dear Sirs,

Hereby, EDP Comercial – Comercialização de Energia, S.A., corporate number 503504564, a Portuguese company with its registered office at Av 24 de Julho, no. 12, in Lisbon (EDP Comercial) confirms the authorization granted to José António Queirós de Almeida (NTU ID: N0717380) to perform and to conclude the Doctor of Business Administration (DBA) research study on the "*Impact of post-service satisfaction surveys in respondents' behaviours*", according to the respective Methodology Research document.

EDP Comercial also confirms authorization granted to José António Queirós de Almeida to publish the thesis or other works resulting from the above mentioned DBA research.

Regards,

Vera Pinto Pereira
(EDP Comercial CEO)

ANNEX 6 – Distribution analysis (Pre-Test 2020)

The MEANS Procedure

group	N Obs	Variable	Label	N	Mean	Median	Std Dev	Minimum	Maximum
0	400	Repurchase	Repurchase	400	2.1	2.0	1.3	0.0	11.0
		Complaints	Complaints	400	0.1	0.0	0.4	0.0	6.0
		Profitability	Profitability	400	0.7	0.7	0.3	0.6	6.9
1	378	Repurchase	Repurchase	378	2.1	2.0	1.3	0.0	11.0
		Complaints	Complaints	378	0.1	0.0	0.4	0.0	6.0
		Profitability	Profitability	378	0.7	0.7	0.0	0.6	0.7
2	1342	Repurchase	Repurchase	1342	1.9	2.0	1.1	0.0	9.0
		Complaints	Complaints	1342	0.0	0.0	0.4	0.0	8.0
		Profitability	Profitability	1342	0.7	0.7	0.0	0.7	0.8
3	671	Repurchase	Repurchase	671	2.0	2.0	1.1	0.0	9.0
		Complaints	Complaints	671	0.0	0.0	0.2	0.0	3.0
		Profitability	Profitability	671	0.7	0.7	0.0	0.7	0.8
4	335	Repurchase	Repurchase	335	1.9	2.0	1.0	1.0	7.0
		Complaints	Complaints	335	0.1	0.0	0.5	0.0	8.0
		Profitability	Profitability	335	0.7	0.7	0.0	0.7	0.8
5	336	Repurchase	Repurchase	336	2.0	2.0	1.1	0.0	7.0
		Complaints	Complaints	336	0.1	0.0	0.4	0.0	5.0
		Profitability	Profitability	336	0.7	0.7	0.0	0.7	0.8
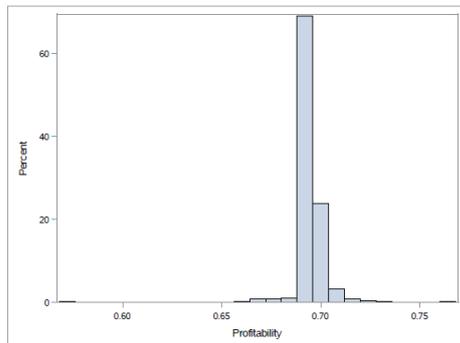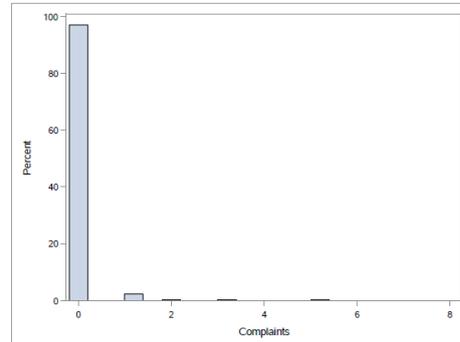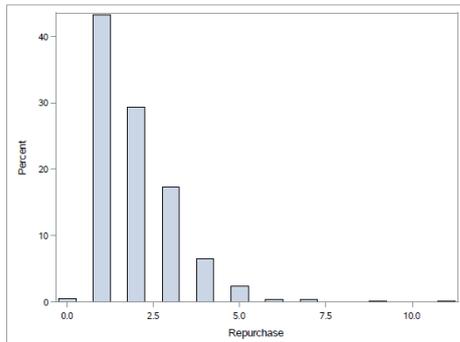
ANNEX 7 – Distribution analysis – Log Transformation (Pre-Test 2020)

The MEANS Procedure

group	N Obs	Variable	N	Mean	Median	Std Dev	Minimum	Maximum
0	400	Repurchase2	399	0.6	0.7	0.5	0.0	2.4
		Complaints2	16	0.3	0.0	0.5	0.0	1.8
		Profitability2	400	-0.4	-0.4	0.1	-0.6	1.9
1	378	Repurchase2	377	0.6	0.7	0.5	0.0	2.4
		Complaints2	15	0.3	0.0	0.5	0.0	1.8
		Profitability2	378	-0.4	-0.4	0.0	-0.6	-0.3
2	1342	Repurchase2	1335	0.5	0.7	0.5	0.0	2.2
		Complaints2	37	0.2	0.0	0.5	0.0	2.1
		Profitability2	1342	-0.4	-0.4	0.0	-0.4	-0.3
3	671	Repurchase2	666	0.5	0.7	0.5	0.0	2.2
		Complaints2	17	0.1	0.0	0.3	0.0	1.1
		Profitability2	671	-0.4	-0.4	0.0	-0.4	-0.3
4	335	Repurchase2	335	0.5	0.7	0.5	0.0	1.9
		Complaints2	10	0.2	0.0	0.7	0.0	2.1
		Profitability2	335	-0.4	-0.4	0.0	-0.4	-0.3
5	336	Repurchase2	334	0.5	0.7	0.5	0.0	1.9
		Complaints2	10	0.4	0.0	0.7	0.0	1.6
		Profitability2	336	-0.4	-0.4	0.0	-0.4	-0.3
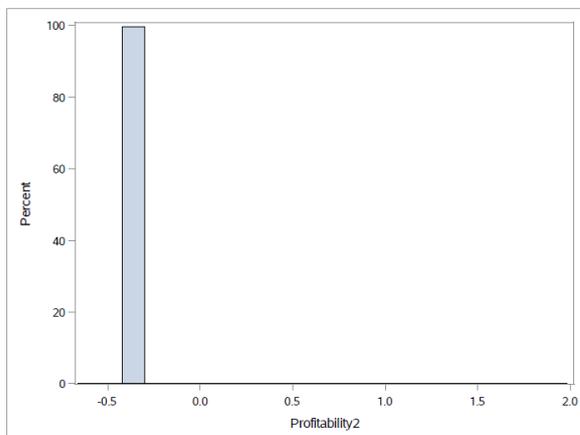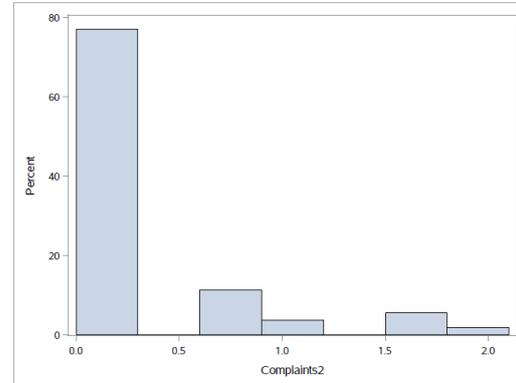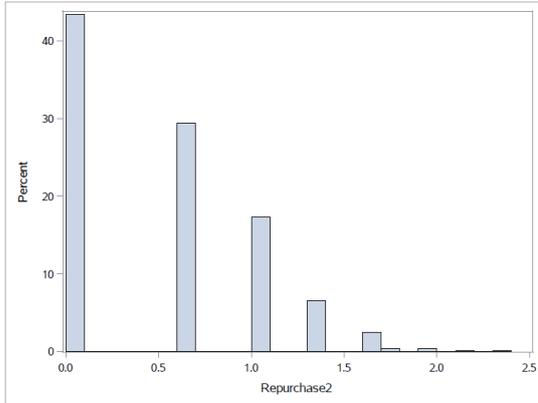
ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

The SAS System

The LOGISTIC Procedure

Model Information		
Data Set	WORK.POST_ORG	
Response Variable	Defection	Defection
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	2111
Number of Observations Used	2111

Response Profile		
Ordered Value	Defection	Total Frequency
1	0	1993
2	1	118

Probability modeled is Defection='1'.

Class Level Information					
Class	Value	Design Variables			
group	0	1	0	0	0
	1	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1
	5	-1	-1	-1	-1
Tenure1	0	1			
	1	-1			

Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	911.956	890.307
SC	917.611	946.856
-2 Log L	909.956	870.307

The SAS System

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	39.6499	9	<.0001
Score	34.5110	9	<.0001
Wald	27.7235	9	0.0011

Joint Tests			
Effect	DF	Wald Chi-Square	Pr > ChiSq
group	4	21.4651	0.0003
Tenure1	1	1.7401	0.1871
group*Tenure1	4	3.9604	0.4128

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-3.1603	0.1487	451.6027	<.0001
group	0	1	0.8352	0.2023	17.0475	<.0001
group	1	1	0.5073	0.2195	5.3416	0.0208
group	3	1	0.4675	0.1944	5.7807	0.0162
group	4	1	-1.2429	0.4598	7.3062	0.0069
Tenure1	0	1	0.1962	0.1487	1.7401	0.1871
group*Tenure1	0 0	1	-0.0995	0.2023	0.2419	0.6228
group*Tenure1	1 0	1	-0.1352	0.2195	0.3792	0.5380
group*Tenure1	3 0	1	0.1555	0.1944	0.6398	0.4238
group*Tenure1	4 0	1	0.5245	0.4598	1.3010	0.2540

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	60.2	Somers' D	0.318
Percent Discordant	28.4	Gamma	0.358
Percent Tied	11.3	Tau-a	0.034
Pairs	235174	c	0.659

The SAS System

The LOGISTIC Procedure

Model Information		
Data Set	WORK.POST_ORG	
Response Variable	Repurchase	Repurchase
Number of Response Levels	10	
Model	cumulative logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	2111
Number of Observations Used	2111

Response Profile		
Ordered Value	Repurchase	Total Frequency
1	0	11
2	1	928
3	2	654
4	3	323
5	4	127
6	5	46
7	6	11
8	7	8
9	9	1
10	11	2

Probabilities modeled are cumulated over the lower Ordered Values.

Class Level Information					
Class	Value	Design Variables			
group	0	1	0	0	0
	1	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1
	5	-1	-1	-1	-1
Satisfaction1	High	1	0		
	Low	0	1		
	Medium	-1	-1		

Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

The SAS System

The LOGISTIC Procedure

Score Test for the Proportional Odds Assumption		
Chi-Square	DF	Pr > ChiSq
2676.7107	80	<.0001

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	5718.475	5728.001
SC	5769.370	5835.444
-2 Log L	5700.475	5690.001

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	10.4749	10	0.3999
Score	10.3262	10	0.4124
Wald	10.2854	10	0.4158

Joint Tests			
Effect	DF	Wald Chi-Square	Pr > ChiSq
group	4	7.7967	0.0993
Satisfaction1	2	3.0891	0.2134
group*Satisfaction1	4	3.4604	0.4839

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

group1Satisfaction1High	-group0 + group1 + group0Satisfaction1High
group1Satisfaction1Low	group0Satisfaction1Low
group4Satisfaction1High	-Intercept_0 - Intercept_1 - Intercept_2 - Intercept_3 - Intercept_4 - Intercept_5 - Intercept_6 - Intercept_7 - Intercept_9 - 3* group0 + group3 + group4 + Satisfaction1High + 3 * group0Satisfaction1High - group3Satisfaction1High
group4Satisfaction1Low	Satisfaction1Low + 3 * group0Satisfaction1Low - group3Satisfaction1Low

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

			Estimate	Std. Error	t value	Pr(>|t|)
Post-Test (2021) Analysis for H5 and H6 using R (Tenure)						
Method: Linear Regression						
Dependent variables: Repurchase; Complaints and Profitability						
			Estimate	**Std. Error**	**t value**	**Pr(>|t|)**
Repurchase	CG	Intercept	2,083186351	0,448154953	4,648361775	6,05E-06
Repurchase	CG	Tenure=Experienced	-0,000242276	0,005551079	-0,043644795	0,965230872
Repurchase	CG	Intercept	1,562336229	0,147263963	10,60908723	4,75E-21
Repurchase	CG	Tenure=Novice	0,014283755	0,005351628	2,669048435	0,008247557
Repurchase	TG1	Intercept	2,086326283	0,472212961	4,418189366	1,67E-05
Repurchase	TG1	Tenure=Experienced	9,30E-05	0,005796308	0,016052427	0,98720941
Repurchase	TG1	Intercept	1,634431577	0,151708743	10,7734831	2,70E-21
Repurchase	TG1	Tenure=Novice	0,012857802	0,005375232	2,39204599	0,017762046
Profitability	CG	Intercept	0,689458583	0,003064328	224,9950441	1,83E-243
Profitability	CG	Tenure=Experienced	7,80E-05	3,80E-05	2,05458755	0,04121258
Profitability	CG	Intercept	0,687824305	0,002580609	266,5356128	7,89E-252
Profitability	CG	Tenure=Novice	0,000138971	9,38E-05	1,481873777	0,139988043
Profitability	TG1	Intercept	0,688954357	0,003720291	185,1883066	1,48E-216
Profitability	TG1	Tenure=Experienced	9,29E-05	4,57E-05	2,033816697	0,043360482
Profitability	TG1	Intercept	0,692690796	0,002442456	283,604246	5,52E-245
Profitability	TG1	Tenure=Novice	6,20E-06	8,65E-05	0,071672928	0,942940046
Complaints	CG	Intercept	0,110675504	0,079661973	1,389314131	0,166274399
Complaints	CG	Tenure=Experienced	-0,001088769	0,000986734	-1,10340672	0,271169855
Complaints	CG	Intercept	0,128663794	0,039499655	3,257339659	0,001326471
Complaints	CG	Tenure=Novice	-0,002523747	0,001435432	-1,758178996	0,080285905
Complaints	TG1	Intercept	0,124026744	0,085094458	1,457518457	0,146624139
Complaints	TG1	Tenure=Experienced	-0,001228092	0,001044515	-1,17575245	0,241164966
Complaints	TG1	Intercept	0,128373648	0,040846568	3,142825829	0,001950691
Complaints	TG1	Tenure=Novice	-0,002497703	0,001447245	-1,725832788	0,086056233

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

			Estimate	Std. Error	t value	Pr(>|t|)
Post-Test (2021) Analysis for H5 and H6 using R (Tenure)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability
Repurchase	CG	Intercept	2,083186351	0,448154953	4,648361775	6,05E-06
Repurchase	CG	Tenure=Experienced	-0,000242276	0,005551079	-0,043644795	0,965230872
Repurchase	CG	Intercept	1,562336229	0,147263963	10,60908723	4,75E-21
Repurchase	CG	Tenure=Novice	0,014283755	0,005351628	2,669048435	0,008247557
Repurchase	TG2	Intercept	2,288105164	0,209030123	10,94629393	8,14E-26
Repurchase	TG2	Tenure=Experienced	-4,03E-03	0,002463269	-1,636527715	0,102187175
Repurchase	TG2	Intercept	1,54792012	0,075748982	20,43486374	4,38E-72
Repurchase	TG2	Tenure=Novice	0,010225242	0,002165317	4,722284821	2,85778E-06
Profitability	CG	Intercept	0,689458583	0,003064328	224,9950441	1,83E-243
Profitability	CG	Tenure=Experienced	7,80E-05	3,80E-05	2,05458755	0,04121258
Profitability	CG	Intercept	0,687824305	0,002580609	266,5356128	7,89E-252
Profitability	CG	Tenure=Novice	0,000138971	9,38E-05	1,481873777	0,139988043
Profitability	TG2	Intercept	0,695815472	0,001395166	498,7332356	0,00E+00
Profitability	TG2	Tenure=Experienced	8,50E-06	1,64E-05	0,517116511	0,60524127
Profitability	TG2	Intercept	0,691283147	0,00104316	662,6819252	0,00E+00
Profitability	TG2	Tenure=Novice	7,22E-05	2,98E-05	2,420408763	0,015775723
Complaints	CG	Intercept	0,110675504	0,079661973	1,389314131	0,166274399
Complaints	CG	Tenure=Experienced	-0,001088769	0,000986734	-1,10340672	0,271169855
Complaints	CG	Intercept	0,128663794	0,039499655	3,257339659	0,001326471
Complaints	CG	Tenure=Novice	-0,002523747	0,001435432	-1,758178996	0,080285905
Complaints	TG2	Intercept	0,017227085	0,05639431	0,305475597	0,760096486
Complaints	TG2	Tenure=Experienced	0,000334567	0,000664566	0,503436627	0,614818702
Complaints	TG2	Intercept	0,107720296	0,02661471	4,04739693	5,80167E-05
Complaints	TG2	Tenure=Novice	-0,001608734	0,000760793	-2,114549496	0,034847847

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability

			Estimate	Std. Error	t value	Pr(>|t|)
Repurchase	CG	Intercept	2,083186351	0,448154953	4,648361775	6,05E-06
Repurchase	CG	Tenure=Experienced	-0,000242276	0,005551079	-0,043644795	0,965230872
Repurchase	CG	Intercept	1,562336229	0,147263963	10,60908723	4,75E-21
Repurchase	CG	Tenure=Novice	0,014283755	0,005351628	2,669048435	0,008247557
Repurchase	TG3	Intercept	2,404300244	0,315712793	7,615466653	2,59E-13
Repurchase	TG3	Tenure=Experienced	-4,75E-03	0,003682456	-1,29006961	0,197898091
Repurchase	TG3	Intercept	1,569605732	0,102968291	15,24358347	5,85E-40
Repurchase	TG3	Tenure=Novice	0,00843306	0,002834198	2,975466696	0,003144686
Profitability	CG	Intercept	0,689458583	0,003064328	224,9950441	1,83E-243
Profitability	CG	Tenure=Experienced	7,80E-05	3,80E-05	2,05458755	0,04121258
Profitability	CG	Intercept	0,687824305	0,002580609	266,5356128	7,89E-252
Profitability	CG	Tenure=Novice	0,000138971	9,38E-05	1,481873777	0,139988043
Profitability	TG3	Intercept	0,696119537	0,002070848	336,1519925	0,00E+00
Profitability	TG3	Tenure=Experienced	5,47E-06	2,42E-05	0,226521968	0,820930804
Profitability	TG3	Intercept	0,69092643	0,001766304	391,1707774	0,00E+00
Profitability	TG3	Tenure=Novice	6,49E-05	4,86E-05	1,335355645	0,182694474
Complaints	CG	Intercept	0,110675504	0,079661973	1,389314131	0,166274399
Complaints	CG	Tenure=Experienced	-0,00108876	0,000986734	-1,10340672	0,271169855
Complaints	CG	Intercept	0,128663794	0,039499655	3,257339659	0,001326471
Complaints	CG	Tenure=Novice	-0,00252377	0,001435432	-1,75817899	0,080285905
Complaints	TG3	Intercept	0,079735956	0,055334043	1,440992767	0,150501643
Complaints	TG3	Tenure=Experienced	-0,00046540	0,000645413	-0,72109125	0,471346005
Complaints	TG3	Intercept	0,045998468	0,024070979	1,910951302	0,056890406
Complaints	TG3	Tenure=Novice	-0,00020079	0,000662553	-0,30306515	0,762034104

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability

			Estimate	Std. Error	t value	Pr(>|t|)
Repurchase	TG3	Intercept	2,404300244	0,315712793	7,615466653	2,59E-13
Repurchase	TG3	Tenure=Experienced	-0,004750625	0,003682456	-1,290069611	0,197898091
Repurchase	TG3	Intercept	1,569605732	0,102968291	15,24358347	5,85E-40
Repurchase	TG3	Tenure=Novice	0,00843306	0,002834198	2,975466696	0,003144686
Repurchase	TG4_TG5	Intercept	2,247592773	0,285966002	7,859650299	5,35E-14
Repurchase	TG4_TG5	Tenure=Experienced	-4,16E-03	0,003394039	-1,225111389	0,221396511
Repurchase	TG4_TG5	Intercept	1,55058269	0,11392063	13,611079	1,12E-33
Repurchase	TG4_TG5	Tenure=Novice	0,011217827	0,003286434	3,413373255	0,000723097
Profitability	TG3	Intercept	0,696119537	0,002070848	336,1519925	0,00E+00
Profitability	TG3	Tenure=Experienced	5,47E-06	2,42E-05	0,226521968	0,820930804
Profitability	TG3	Intercept	0,69092643	0,001766304	391,1707774	0,00E+00
Profitability	TG3	Tenure=Novice	6,49216E-05	4,86E-05	1,335355645	0,182694474
Profitability	TG4_TG5	Intercept	0,696204225	0,001948278	357,3434113	0,00E+00
Profitability	TG4_TG5	Tenure=Experienced	4,16E-06	2,31E-05	0,180115648	0,857171007
Profitability	TG4_TG5	Intercept	0,691889434	0,0011316	611,4259082	0,00E+00
Profitability	TG4_TG5	Tenure=Novice	7,08E-05	3,26E-05	2,169412414	0,030778054
Complaints	TG3	Intercept	0,079735956	0,055334043	1,440992767	0,150501643
Complaints	TG3	Tenure=Experienced	-0,000465402	0,000645413	-0,721091252	0,471346005
Complaints	TG3	Intercept	0,045998468	0,024070979	1,910951302	0,056890406
Complaints	TG3	Tenure=Novice	-0,000200797	0,000662553	-0,303065156	0,762034104
Complaints	TG4_TG5	Intercept	-0,046690735	0,102496002	-0,455537132	0,649018862
Complaints	TG4_TG5	Tenure=Experienced	0,001179948	0,001216492	0,969958969	0,332768816
Complaints	TG4_TG5	Intercept	0,06686223	0,024666232	2,710678679	0,007072289
Complaints	TG4_TG5	Tenure=Novice	-0,000599306	0,000711583	-0,84221549	0,400288586

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability

			Estimate	Std. Error	t value	Pr(>|t|)
Repurchase	TG4	Intercept	2,247280844	0,385117543	5,835311549	2,72E-08
Repurchase	TG4	Tenure=Experienced	-0,004543804	0,004536326	-1,001648404	0,31796257
Repurchase	TG4	Intercept	1,450351757	0,151493826	9,573669099	1,82E-17
Repurchase	TG4	Tenure=Novice	0,01080578	0,004470721	2,417010624	0,016765974
Repurchase	TG5	Intercept	2,235734175	0,425928482	5,249083522	4,65E-07
Repurchase	TG5	Tenure=Experienced	-3,61E-03	0,005094734	-0,709157485	0,479227583
Repurchase	TG5	Intercept	1,670298164	0,170429138	9,800543381	4,47E-18
Repurchase	TG5	Tenure=Novice	0,010968022	0,004810993	2,279783467	0,023933228
Profitability	TG4	Intercept	0,69456428	0,002560741	271,2356117	8,63E-223
Profitability	TG4	Tenure=Experienced	1,71E-05	3,02E-05	0,568262456	0,570620066
Profitability	TG4	Intercept	0,689935429	0,00188894	365,2501438	6,74E-237
Profitability	TG4	Tenure=Novice	0,00010071	5,57E-05	1,806644735	0,072685101
Profitability	TG5	Intercept	0,697693353	0,002944194	236,9725779	6,39E-211
Profitability	TG5	Tenure=Experienced	-7,08E-06	3,52E-05	-0,201141123	0,840835967
Profitability	TG5	Intercept	0,694117234	0,001182994	586,7460356	5,14E-270
Profitability	TG5	Tenure=Novice	3,38E-05	3,34E-05	1,013315949	0,312429686
Complaints	TG4	Intercept	-0,080315665	0,195345415	-0,411146915	0,681491929
Complaints	TG4	Tenure=Experienced	0,001892823	0,002300987	0,82261362	0,411900783
Complaints	TG4	Intercept	0,080551016	0,040719098	1,978212199	0,049611057
Complaints	TG4	Tenure=Novice	-0,000454894	0,001201658	-0,378555719	0,705516519
Complaints	TG5	Intercept	-0,00218248	0,057933522	-0,037672153	0,969994619
Complaints	TG5	Tenure=Experienced	0,000319414	0,000692971	0,460934586	0,645452514
Complaints	TG5	Intercept	0,050265902	0,02696448	1,864152435	0,064121021
Complaints	TG5	Tenure=Novice	-0,00063982	0,000761172	-0,840572024	0,401834347

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

Post-Test (2021) Analysis for H5 and H6 using R (Satisfaction)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability

			Estimate	Std. Error	t value	Pr(>|t|)
Repurchase	TG4	Intercept	1,692232535	0,277231764	6,104035513	4,54E-07
Repurchase	TG4	Satisfaction_class=low	0,064973131	0,107996264	0,601623882	0,551093315
Repurchase	TG4	Intercept	1,579450418	0,907372457	1,740685874	0,087434389
Repurchase	TG4	Satisfaction_class=medium	0,051772202	0,148279253	0,349153379	0,728332033
Repurchase	TG4	Intercept	0,259348878	0,765418058	0,338832976	0,73503812
Repurchase	TG4	Satisfaction_class=high	0,168609767	0,083581158	2,017317913	0,044799456
Repurchase	TG5	Intercept	2,089965398	0,249678295	8,370633096	5,73E-10
Repurchase	TG5	Satisfaction_class=low	-0,023644752	0,112853781	-0,209516701	0,835226068
Repurchase	TG5	Intercept	0,38	1,153844744	0,329333736	0,743226327
Repurchase	TG5	Satisfaction_class=medium	0,263333333	0,183978469	1,431326912	0,158319532
Repurchase	TG5	Intercept	0,176321255	0,810647371	0,217506726	0,828001399
Repurchase	TG5	Satisfaction_class=high	0,193861066	0,088261448	2,196441037	0,029033689
Profitability	TG4	Intercept	0,696529311	0,00156867	444,0252756	0,00E+00
Profitability	TG4	Satisfaction_class=low	-0,000839521	0,000611079	-1,37383396	0,177759852
Profitability	TG4	Intercept	0,694839904	0,012227112	56,8278036	0,00E+00
Profitability	TG4	Satisfaction_class=medium	2,35E-05	0,001998107	0,011759439	0,99066088
Profitability	TG4	Intercept	0,688461065	0,007520489	91,54472097	0,00E+00
Profitability	TG4	Satisfaction_class=high	0,000633084	0,000821213	0,77091341	0,441532647
Profitability	TG5	Intercept	0,69499654	0,001980125	350,9861746	0,00E+00
Profitability	TG5	Satisfaction_class=low	0,000968858	0,00089501	1,08251078	0,286223374
Profitability	TG5	Intercept	0,693533333	0,005529214	125,4307189	0,00E+00
Profitability	TG5	Satisfaction_class=medium	0,00045	0,000881623	0,510422091	0,611915813
Profitability	TG5	Intercept	0,700478447	0,005836831	120,010064	0,00E+00
Profitability	TG5	Satisfaction_class=high	-0,000485012	0,000635501	-0,763195863	0,446108822
Complaints	TG4	Intercept	0,144846116	0,131943814	1,097786339	0,279390758
Complaints	TG4	Satisfaction_class=low	0,030532487	0,051399012	0,594028661	0,556107763
Complaints	TG4	Intercept	-0,219832736	0,16908621	-1,300122201	0,199081157
Complaints	TG4	Satisfaction_class=medium	0,042214257	0,027631406	1,527763618	0,13240803
Complaints	TG4	Intercept	-0,611911571	0,321131137	-1,905488133	0,057937147
Complaints	TG4	Satisfaction_class=high	0,073553674	0,035066474	2,097549759	0,037013608
Complaints	TG5	Intercept	0,053633218	0,037548745	1,428362481	0,161806614
Complaints	TG5	Satisfaction_class=low	-0,017301038	0,016971911	-1,019392453	0,314818774
Complaints	TG5	Intercept	-0,253333333	0,205076596	-1,235310797	0,222267093
Complaints	TG5	Satisfaction_class=medium	0,046666667	0,032699094	1,427154716	0,159512882
Complaints	TG5	Intercept	0,01864246	0,112955091	0,165043111	0,869051332
Complaints	TG5	Satisfaction_class=high	0,000718004	0,012298294	0,058382401	0,953493436

ANNEX 8 – Regression analysis attempts to study moderator effects (Tenure and Satisfaction)

Post-Test (2021) Analysis for H5 and H6 using R (Satisfaction)
Method: Linear Regression
Dependent variables: Repurchase; Complaints and Profitability

			Estimate	Std. Error	t value	Pr(>|t|)
Repurchase	TG3	Intercept	1,854893285	0,152596245	12,15556308	8,98E-20
Repurchase	TG3	Satisfaction_class=low	-0,071707444	0,073096908	-0,980991487	0,329591695
Repurchase	TG3	Intercept	2,576280134	0,801068303	3,216055515	0,001667231
Repurchase	TG3	Satisfaction_class=medium	-0,090269224	0,129728585	-0,695831407	0,487868758
Repurchase	TG3	Intercept	3,03280143	0,551058658	5,503590931	6,16E-08
Repurchase	TG3	Satisfaction_class=high	-0,122158442	0,060402454	-2,022408573	0,043706105
Repurchase	TG4_TG5	Intercept	1,909203494	0,184726213	10,3353144	4,50E-16
Repurchase	TG4_TG5	Satisfaction_class=low	0,014535263	0,077014416	0,18873431	0,850810837
Repurchase	TG4_TG5	Intercept	1,046632124	0,713239321	1,467434694	0,145164015
Repurchase	TG4_TG5	Satisfaction_class=medium	0,147956246	0,115139395	1,285018443	0,201534898
Repurchase	TG4_TG5	Intercept	0,20190509	0,558040099	0,361811079	0,717654787
Repurchase	TG4_TG5	Satisfaction_class=high	0,183013386	0,060846768	3,007774977	0,002771917
Profitability	TG3	Intercept	0,691557392	0,001993033	346,9873472	0,00E+00
Profitability	TG3	Satisfaction_class=low	0,000668272	0,000954706	0,699976316	0,485998308
Profitability	TG3	Intercept	0,699339081	0,004639721	150,7286995	0,00E+00
Profitability	TG3	Satisfaction_class=medium	-0,000492961	0,000751377	-0,656077267	0,513020065
Profitability	TG3	Intercept	0,708733233	0,007168806	98,86349729	0,00E+00
Profitability	TG3	Satisfaction_class=high	-0,001532741	0,000785785	-1,95058631	0,051706626
Profitability	TG4_TG5	Intercept	0,695798136	0,001285728	541,1705055	0,00E+00
Profitability	TG4_TG5	Satisfaction_class=low	-6,17E-05	0,000536034	-0,115153027	0,908631576
Profitability	TG4_TG5	Intercept	0,693910881	0,007056412	98,33763741	0,00E+00
Profitability	TG4_TG5	Satisfaction_class=medium	0,000282671	0,001139128	0,248147029	0,804491858
Profitability	TG4_TG5	Intercept	0,694479855	0,004759025	145,9290171	0
Profitability	TG4_TG5	Satisfaction_class=high	7,24E-05	0,000518908	0,13949075	0,889121738
Complaints	TG3	Intercept	0,118492972	0,068502976	1,729749273	0,087580441
Complaints	TG3	Satisfaction_class=low	0,020887559	0,03281441	0,63653617	0,526267114
Complaints	TG3	Intercept	0,210628189	0,12694207	1,659246536	0,099655928
Complaints	TG3	Satisfaction_class=medium	-0,027802217	0,020557567	-1,352407971	0,178766928
Complaints	TG3	Intercept	-0,011198193	0,074134481	-0,151052425	0,879999867
Complaints	TG3	Satisfaction_class=high	0,003589337	0,008126004	0,441709975	0,658904428
Complaints	TG4_TG5	Intercept	0,090209881	0,067696065	1,332572018	0,186706823
Complaints	TG4_TG5	Satisfaction_class=low	0,014991527	0,028223243	0,531176601	0,59686603
Complaints	TG4_TG5	Intercept	-0,232124352	0,12909547	-1,798082866	0,074957664
Complaints	TG4_TG5	Satisfaction_class=medium	0,043753598	0,020840094	2,099491424	0,038103395
Complaints	TG4_TG5	Intercept	-0,283282699	0,168635862	-1,679848496	0,093647104
Complaints	TG4_TG5	Satisfaction_class=high	0,035620945	0,018387473	1,937239866	0,053311053

ANNEX – 9 - Professional Doctorate Research Ethics Committee (PDREC) – Approval

NTU Doctoral School

Jose Queiros de Almeida
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Lisboa
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Yasmin Malik
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Nottingham Trent University Doctoral School
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16th July 2019

Dear Jose,

Re: Professional Doctorate Ethical Approval Confirmation

Thank you for submitting an ethical approval application.

I am pleased to confirm that your ethics application has been approved.

Student's Name	Jose Queiros de Almeida
NTU ID	N0717380
Course	Doctor of Business Administration
Committee	Professional Doctorate Research Ethics Committee (PDREC)

PDREC Reviewers' comments:

ACTIONS	Tick as appropriate	Comments
Approved – no further action	Yes	Approved on the basis set out in para 10.9 of the NTU Code of Practice for Research. The student should of course ensure that he complies with that Code of Practice and the NTU Research Ethics Policy at all times throughout the conduct of his research.

Should you have any queries please do not hesitate to contact me either by telephone on +44 (0) 115 848 8088 or email dbaadmin@ntu.ac.uk.

Yours sincerely,

Malik

Yasmin Malik
Doctoral School Administrator

c.c.   Dr Tony Woodall, Dr Julie Rosborough

NTU DOCTORAL SCHOOL

NOTTINGHAM TRENT UNIVERSITY

The MEANS Procedure

group	N Obs	Variable	Label	N	Mean	Median	Std Dev	Minimum	Maximum
0	400	Repurchase	Repurchase	400	2.0	2.0	1.2	0.0	11.0
		Complaints	Complaints	400	0.0	0.0	0.3	0.0	3.0
		Profitability	Profitability	400	0.7	0.7	0.0	0.5	0.7
		Tenure	Tenure	400	51.3	55.0	32.4	0.0	163.0
		Satisfaction		0	.	.	.	.	.
1	378	Repurchase	Repurchase	378	2.0	2.0	1.2	0.0	11.0
		Complaints	Complaints	378	0.0	0.0	0.3	0.0	3.0
		Profitability	Profitability	378	0.7	0.7	0.0	0.5	0.7
		Tenure	Tenure	378	52.0	56.0	32.5	0.0	163.0
		Satisfaction		0	.	.	.	.	.
2	1342	Repurchase	Repurchase	1342	1.9	2.0	1.1	0.0	9.0
		Complaints	Complaints	1342	0.1	0.0	0.3	0.0	6.0
		Profitability	Profitability	1342	0.7	0.7	0.0	0.4	0.8
		Tenure	Tenure	0	.	.	.	.	.
		Satisfaction		1342	7.7	9.0	2.7	0.0	10.0
3	671	Repurchase	Repurchase	671	1.9	2.0	1.1	0.0	9.0
		Complaints	Complaints	671	0.0	0.0	0.2	0.0	2.0
		Profitability	Profitability	671	0.7	0.7	0.0	0.4	0.8
		Tenure	Tenure	671	58.2	62.0	32.1	0.0	165.0
		Satisfaction		671	7.6	8.0	2.7	0.0	10.0
4	332	Repurchase	Repurchase	332	1.8	2.0	1.0	1.0	7.0
		Complaints	Complaints	332	0.1	0.0	0.4	0.0	6.0
		Profitability	Profitability	332	0.7	0.7	0.0	0.6	0.7
		Tenure	Tenure	332	56.4	61.0	32.5	1.0	163.0
		Satisfaction		332	7.8	9.0	2.6	0.0	10.0
5	330	Repurchase	Repurchase	330	2.0	2.0	1.1	0.0	7.0
		Complaints	Complaints	330	0.0	0.0	0.2	0.0	1.0
		Profitability	Profitability	330	0.7	0.7	0.0	0.7	0.7
		Tenure	Tenure	330	56.5	61.0	31.0	0.0	162.0
		Satisfaction		330	7.8	9.0	2.7	0.0	10.0

ANNEX 10 – Distribution analysis (Post-Test 2021)
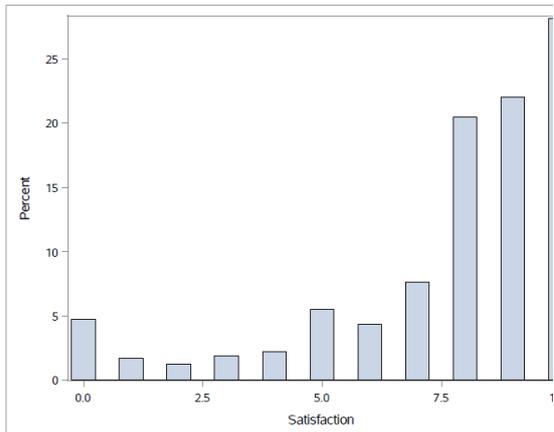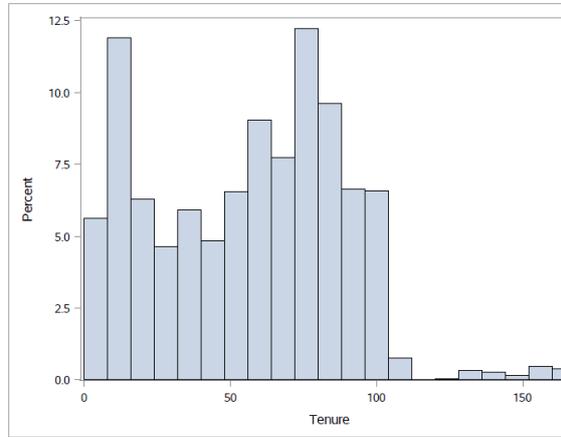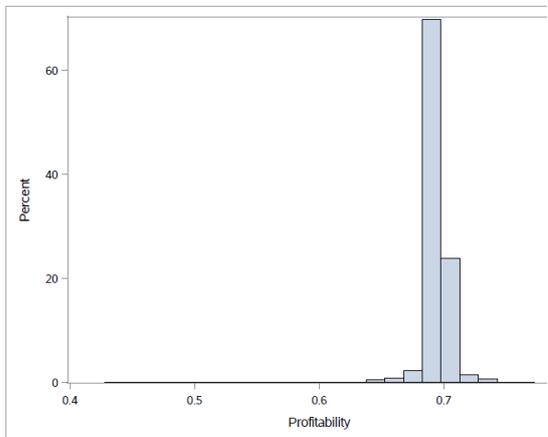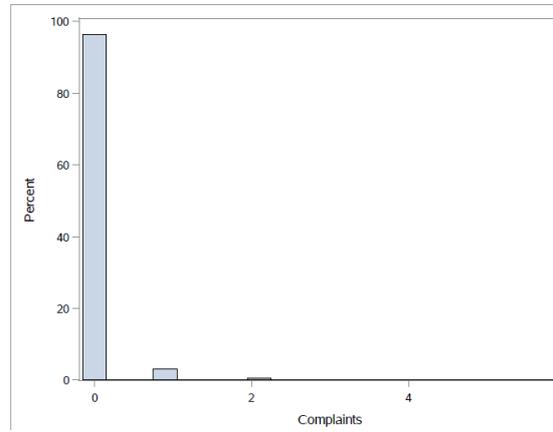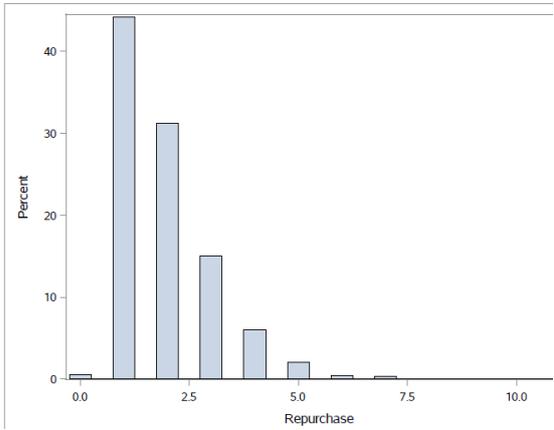
ANNEX 11 – Pre-Test Statistical Analysis

Pre-Test:CG vs TG3

The NPAR1WAY Procedure

			Wilcoxon Scores (Rank Sums) for Variable Repurchase1 Classified by Variable group		
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	220411.50	214400.0	4625.06163	551.028750
3	671	353644.50	359656.0	4625.06163	527.040984
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	220411.5000
Normal Approximation	
Z	1.2997
One-Sided Pr > Z	0.0969
Two-Sided Pr > |Z|	0.1937
t Approximation	
One-Sided Pr > Z	0.0970
Two-Sided Pr > |Z|	0.1940
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	1.6894
DF	1
Pr > Chi-Square	0.1937

Pre-Test:CG vs TG2

The NPAR1WAY Procedure

			Wilcoxon Scores (Rank Sums) for Variable Repurchase1 Classified by Variable group		
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	361383.50	348600.0	8322.29364	903.458750
2	1342	1156769.50	1169553.0	8322.29364	861.974292
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	361383.5000
Normal Approximation	
Z	1.5360
One-Sided Pr > Z	0.0623
Two-Sided Pr > |Z|	0.1245
t Approximation	
One-Sided Pr > Z	0.0624
Two-Sided Pr > |Z|	0.1247
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	2.3595
DF	1
Pr > Chi-Square	0.1245

Pre-Test:CG vs TG1

The NPAR1WAY Procedure

			Wilcoxon Scores (Rank Sums) for Variable Repurchase1 Classified by Variable group		
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	154909.50	155800.0	2974.70806	387.273750
1	378	148121.50	147231.0	2974.70806	391.855820
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	148121.5000
Normal Approximation	
Z	0.2992
One-Sided Pr > Z	0.3824
Two-Sided Pr > |Z|	0.7648
t Approximation	
One-Sided Pr > Z	0.3824
Two-Sided Pr > |Z|	0.7649
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0896
DF	1
Pr > Chi-Square	0.7647

Pre-Test:TG4 vs TG5

The NPAR1WAY Procedure

			Wilcoxon Scores (Rank Sums) for Variable Repurchase1 Classified by Variable group		
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
5	334	115004.0	112224.0	2357.33295	344.323353
4	337	110452.0	113232.0	2357.33295	327.750742
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	115004.0000
Normal Approximation	
Z	1.1791
One-Sided Pr > Z	0.1192
Two-Sided Pr > |Z|	0.2384
t Approximation	
One-Sided Pr > Z	0.1194
Two-Sided Pr > |Z|	0.2388
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	1.3907
DF	1
Pr > Chi-Square	0.2383

Pre-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase1 Classified by Variable group2					
group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
45	671	449322.0	450576.50	6676.19896	669.630402
3	671	451831.0	450576.50	6676.19896	673.369598
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	449322.0000
Normal Approximation	
Z	-0.1878
One-Sided Pr < Z	0.4255
Two-Sided Pr > |Z|	0.8510
t Approximation	
One-Sided Pr < Z	0.4255
Two-Sided Pr > |Z|	0.8510
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0353
DF	1
Pr > Chi-Square	0.8510

Pre-Test:CG vs TG3

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints1 Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	216386.0	214400.0	1465.76606	540.965000
3	671	357670.0	359656.0	1465.76606	533.040238
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	216386.0000
Normal Approximation	
Z	1.3546
One-Sided Pr > Z	0.0878
Two-Sided Pr > |Z|	0.1756
t Approximation	
One-Sided Pr > Z	0.0879
Two-Sided Pr > |Z|	0.1758
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	1.8358
DF	1
Pr > Chi-Square	0.1754

Pre-Test:CG vs TG2

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints1 Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	351965.0	348600.0	2627.03969	879.912500
2	1342	1166188.0	1169553.0	2627.03969	868.992548
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	351965.0000
Normal Approximation	
Z	1.2807
One-Sided Pr > Z	0.1001
Two-Sided Pr > |Z|	0.2003
t Approximation	
One-Sided Pr > Z	0.1002
Two-Sided Pr > |Z|	0.2005
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	1.6407
DF	1
Pr > Chi-Square	0.2002

Pre-Test:CG vs TG1

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints1 Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	155821.50	155800.0	1061.59024	389.553750
1	378	147209.50	147231.0	1061.59024	389.443122
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	147209.5000
Normal Approximation	
Z	-0.0198
One-Sided Pr < Z	0.4921
Two-Sided Pr > |Z|	0.9842
t Approximation	
One-Sided Pr < Z	0.4921
Two-Sided Pr > |Z|	0.9842
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0004
DF	1
Pr > Chi-Square	0.9838

Pre-Test:TG4 vs TG5

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
5	334	111562.0	112224.0	739.534670	334.017964
4	337	113894.0	113232.0	739.534670	337.964392

Wilcoxon Scores (Rank Sums) for Variable Complaints1 Classified by Variable group

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	111562.0000
Normal Approximation	
Z	-0.8945
One-Sided Pr < Z	0.1855
Two-Sided Pr > |Z|	0.3711
t Approximation	
One-Sided Pr < Z	0.1857
Two-Sided Pr > |Z|	0.3714

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	0.8013
DF	1
Pr > Chi-Square	0.3707

Pre-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
45	671	451592.50	450576.50	2013.30997	673.014158
3	671	449560.50	450576.50	2013.30997	669.985842

Wilcoxon Scores (Rank Sums) for Variable Complaints1 Classified by Variable group2

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	451592.5000
Normal Approximation	
Z	0.5044
One-Sided Pr > Z	0.3070
Two-Sided Pr > |Z|	0.6140
t Approximation	
One-Sided Pr > Z	0.3070
Two-Sided Pr > |Z|	0.6141

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	0.2547
DF	1
Pr > Chi-Square	0.6138

Pre-Test:CG vs TG3

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	207359.50	214400.0	4894.35598	518.398750
3	671	366696.50	359656.0	4894.35598	546.492548

Wilcoxon Scores (Rank Sums) for Variable Profitability1 Classified by Variable group

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	207359.5000
Normal Approximation	
Z	-1.4384
One-Sided Pr < Z	0.0752
Two-Sided Pr > |Z|	0.1503
t Approximation	
One-Sided Pr < Z	0.0753
Two-Sided Pr > |Z|	0.1506

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	2.0693
DF	1
Pr > Chi-Square	0.1503

Pre-Test:CG vs TG2

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	334097.50	348600.0	8828.34059	835.243750
2	1342	1184055.50	1169553.0	8828.34059	882.306632

Wilcoxon Scores (Rank Sums) for Variable Profitability1 Classified by Variable group

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	334097.5000
Normal Approximation	
Z	-1.6427
One-Sided Pr < Z	0.0602
Two-Sided Pr > |Z|	0.1205
t Approximation	
One-Sided Pr < Z	0.0603
Two-Sided Pr > |Z|	0.1206

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test	
Chi-Square	2.6985
DF	1
Pr > Chi-Square	0.1204

174

Pre-Test:CG vs TG1

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Profitability1 Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	156531.0	155800.0	3118.61222	391.327500
1	378	146500.0	147231.0	3118.61222	387.566138
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	146500.0000
Normal Approximation	
Z	-0.2342
One-Sided Pr < Z	0.4074
Two-Sided Pr > |Z|	0.8148
t Approximation	
One-Sided Pr < Z	0.4074
Two-Sided Pr > |Z|	0.8149
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0549
DF	1
Pr > Chi-Square	0.8147

Pre-Test:TG4 vs TG5

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Profitability1 Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
5	334	115491.0	112224.0	2510.39634	345.781437
4	337	109965.0	113232.0	2510.39634	326.305638
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	115491.0000
Normal Approximation	
Z	1.3012
One-Sided Pr > Z	0.0966
Two-Sided Pr > |Z|	0.1932
t Approximation	
One-Sided Pr > Z	0.0968
Two-Sided Pr > |Z|	0.1936
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	1.6936
DF	1
Pr > Chi-Square	0.1931

Pre-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Profitability1 Classified by Variable group2					
group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
45	671	451567.0	450576.50	7097.95728	672.976155
3	671	449586.0	450576.50	7097.95728	670.023845
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	451567.0000
Normal Approximation	
Z	0.1395
One-Sided Pr > Z	0.4445
Two-Sided Pr > |Z|	0.8891
t Approximation	
One-Sided Pr > Z	0.4445
Two-Sided Pr > |Z|	0.8891
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0195
DF	1
Pr > Chi-Square	0.8890

ANNEX 12 – Post-Test Statistical Analysis H1 – H4

Post-Test:CG vs TG3

The FREQ Procedure

Frequency Col Pct

Table of Defection by group

Defection(Defection)	group 0	group 3	Total
0	364 91.00	627 93.44	991
1	36 9.00	44 6.56	80
Total	400	671	1071

Statistics for Table of Defection by group

Statistic	DF	Value	Prob
Chi-Square	1	2.1633	0.1413
Likelihood Ratio Chi-Square	1	2.1183	0.1455
Continuity Adj. Chi-Square	1	1.8244	0.1768
Mantel-Haenszel Chi-Square	1	2.1613	0.1415
Phi Coefficient		-0.0449	
Contingency Coefficient		0.0449	
Cramer's V		-0.0449	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	364
Left-sided Pr <= F	0.0893
Right-sided Pr >= F	0.9430
Table Probability (P)	0.0323
Two-sided Pr <= P	0.1503

Sample Size = 1071

Post-Test:CG vs TG2

The FREQ Procedure

Frequency Col Pct

Table of Defection by group

Defection(Defection)	group 0	group 2	Total
0	364 91.00	1285 95.75	1649
1	36 9.00	57 4.25	93
Total	400	1342	1742

Statistics for Table of Defection by group

Statistic	DF	Value	Prob
Chi-Square	1	13.7728	0.0002
Likelihood Ratio Chi-Square	1	12.2747	0.0005
Continuity Adj. Chi-Square	1	12.8484	0.0003
Mantel-Haenszel Chi-Square	1	13.7649	0.0002
Phi Coefficient		-0.0889	
Contingency Coefficient		0.0886	
Cramer's V		-0.0889	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	364
Left-sided Pr <= F	0.0003
Right-sided Pr >= F	0.9999
Table Probability (P)	0.0002
Two-sided Pr <= P	0.0005

Sample Size = 1742

Post-Test:CG vs TG1

The FREQ Procedure

Frequency Col Pct

Table of Defection by group

Defection(Defection)	group 0	group 1	Total
0	364 91.00	353 93.39	717
1	36 9.00	25 6.61	61
Total	400	378	778

Statistics for Table of Defection by group

Statistic	DF	Value	Prob
Chi-Square	1	1.5315	0.2159
Likelihood Ratio Chi-Square	1	1.5411	0.2145
Continuity Adj. Chi-Square	1	1.2190	0.2695
Mantel-Haenszel Chi-Square	1	1.5295	0.2162
Phi Coefficient		-0.0444	
Contingency Coefficient		0.0443	
Cramer's V		-0.0444	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	364
Left-sided Pr <= F	0.1347
Right-sided Pr >= F	0.9152
Table Probability (P)	0.0498
Two-sided Pr <= P	0.2318

Sample Size = 778

Post-Test:TG4 vs TG5

The FREQ Procedure

Frequency Col Pct

Table of Defection by group

Defection(Defection)	group 4	group 5	Total
0	332 98.52	326 97.60	658
1	5 1.48	8 2.40	13
Total	337	334	671

Statistics for Table of Defection by group

Statistic	DF	Value	Prob
Chi-Square	1	0.7336	0.3917
Likelihood Ratio Chi-Square	1	0.7399	0.3897
Continuity Adj. Chi-Square	1	0.3323	0.5643
Mantel-Haenszel Chi-Square	1	0.7325	0.3921
Phi Coefficient		0.0331	
Contingency Coefficient		0.0330	
Cramer's V		0.0331	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	332
Left-sided Pr <= F	0.8724
Right-sided Pr >= F	0.2830
Table Probability (P)	0.1554
Two-sided Pr <= P	0.4176

Sample Size = 671

Post-Test:TG3 vs (TG4+TG5)

The FREQ Procedure

Frequency Col Pct	Table of Defection by group2			
	Defection(Defection)	group2		**Total**
		3	**45**	
	0	627 93.44	658 98.06	1285
	1	44 6.56	13 1.94	57
	Total	671	671	1342

Statistics for Table of Defection by group2

Statistic	DF	Value	Prob
Chi-Square	1	17.6075	<.0001
Likelihood Ratio Chi-Square	1	18.5562	<.0001
Continuity Adj. Chi-Square	1	16.4899	<.0001
Mantel-Haenszel Chi-Square	1	17.5944	<.0001
Phi Coefficient		-0.1145	
Contingency Coefficient		0.1138	
Cramer's V		-0.1145	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	627
Left-sided Pr <= F	<.0001
Right-sided Pr >= F	1.0000
Table Probability (P)	<.0001
Two-sided Pr <= P	<.0001

Sample Size = 1342

Post-Test:CG vs TG3

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	215515.0	214400.0	4599.79178	538.787500
3	671	358541.0	359656.0	4599.79178	534.338301

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	215515.0000
Normal Approximation	
Z	0.2423
One-Sided Pr > Z	0.4043
Two-Sided Pr > |Z|	0.8086
t Approximation	
One-Sided Pr > Z	0.4043
Two-Sided Pr > |Z|	0.8086
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0588
DF	1
Pr > Chi-Square	0.8085

Post-Test:CG vs TG2

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	353129.0	348600.0	8276.07337	882.822500
2	1342	1165024.0	1169553.0	8276.07337	868.125186

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	353129.0000
Normal Approximation	
Z	0.5472
One-Sided Pr > Z	0.2921
Two-Sided Pr > |Z|	0.5843
t Approximation	
One-Sided Pr > Z	0.2922
Two-Sided Pr > |Z|	0.5843
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.2995
DF	1
Pr > Chi-Square	0.5842

Post-Test:CG vs TG1

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	154161.50	155800.0	2952.09076	385.403750
1	378	148869.50	147231.0	2952.09076	393.834656

Average scores were used for ties.

Wilcoxon Two-Sample Test	
Statistic	148869.5000
Normal Approximation	
Z	0.5549
One-Sided Pr > Z	0.2895
Two-Sided Pr > |Z|	0.5790
t Approximation	
One-Sided Pr > Z	0.2896
Two-Sided Pr > |Z|	0.5791
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.3081
DF	1
Pr > Chi-Square	0.5789

Post-Test:TG4 vs TG5

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
5	334	116620.50	112224.0	2343.83785	349.163174
4	337	108835.50	113232.0	2343.83785	322.954006
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	116620.5000
Normal Approximation	
Z	1.8756
One-Sided Pr > Z	0.0304
Two-Sided Pr > |Z|	0.0607
t Approximation	
One-Sided Pr > Z	0.0306
Two-Sided Pr > |Z|	0.0612
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	3.5185
DF	1
Pr > Chi-Square	0.0607

Post-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Repurchase Classified by Variable group2					
group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
45	671	446606.50	450576.50	6647.13781	665.583458
3	671	454546.50	450576.50	6647.13781	677.416542
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	446606.5000
Normal Approximation	
Z	-0.5972
One-Sided Pr < Z	0.2752
Two-Sided Pr > |Z|	0.5504
t Approximation	
One-Sided Pr < Z	0.2752
Two-Sided Pr > |Z|	0.5505
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.3567
DF	1
Pr > Chi-Square	0.5503

Post-Test:CG vs TG3

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	214325.50	214400.0	1569.11269	535.813750
3	671	359730.50	359656.0	1569.11269	536.111028
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	214325.5000
Normal Approximation	
Z	-0.0472
One-Sided Pr < Z	0.4812
Two-Sided Pr > |Z|	0.9624
t Approximation	
One-Sided Pr < Z	0.4812
Two-Sided Pr > |Z|	0.9624
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0023
DF	1
Pr > Chi-Square	0.9621

Post-Test:CG vs TG2

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	347830.0	348600.0	2899.01779	869.575000
2	1342	1170323.0	1169553.0	2899.01779	872.073770
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	347830.0000
Normal Approximation	
Z	-0.2654
One-Sided Pr < Z	0.3953
Two-Sided Pr > |Z|	0.7907
t Approximation	
One-Sided Pr < Z	0.3954
Two-Sided Pr > |Z|	0.7907
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0705
DF	1
Pr > Chi-Square	0.7905

Post-Test:CG vs TG1

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	155844.0	155800.0	993.333416	389.610000
1	378	147187.0	147231.0	993.333416	389.383598
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	147187.0000
Normal Approximation	
Z	-0.0438
One-Sided Pr < Z	0.4825
Two-Sided Pr > |Z|	0.9651
t Approximation	
One-Sided Pr < Z	0.4825
Two-Sided Pr > |Z|	0.9651
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0020
DF	1
Pr > Chi-Square	0.9647

Post-Test:TG4 vs TG5

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
5	334	111401.50	112224.0	854.692762	333.537425
4	337	114054.50	113232.0	854.692762	338.440653
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	111401.5000
Normal Approximation	
Z	-0.9617
One-Sided Pr < Z	0.1681
Two-Sided Pr > |Z|	0.3362
t Approximation	
One-Sided Pr < Z	0.1683
Two-Sided Pr > |Z|	0.3365
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.9261
DF	1
Pr > Chi-Square	0.3359

Post-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Complaints Classified by Variable group2					
group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
45	671	451619.0	450576.50	2351.11639	673.053651
3	671	449534.0	450576.50	2351.11639	669.946349
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	451619.0000
Normal Approximation	
Z	0.4432
One-Sided Pr > Z	0.3288
Two-Sided Pr > |Z|	0.6576
t Approximation	
One-Sided Pr > Z	0.3288
Two-Sided Pr > |Z|	0.6577
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.1966
DF	1
Pr > Chi-Square	0.6575

Post-Test:CG vs TG3

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Profitability Classified by Variable group					
group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
0	400	204820.50	214400.0	4896.63684	512.051250
3	671	369235.50	359656.0	4896.63684	550.276453
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	204820.5000
Normal Approximation	
Z	-1.9562
One-Sided Pr < Z	0.0252
Two-Sided Pr > |Z|	0.0504
t Approximation	
One-Sided Pr < Z	0.0253
Two-Sided Pr > |Z|	0.0507
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	3.8273
DF	1
Pr > Chi-Square	0.0504

Post-Test:CG vs TG2

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
Wilcoxon Scores (Rank Sums) for Variable Profitability Classified by Variable group					
0	400	329798.0	348600.0	8830.07229	824.495000
2	1342	1188355.0	1169553.0	8830.07229	885.510432
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	329798.0000
Normal Approximation	
Z	-2.1293
One-Sided Pr < Z	0.0166
Two-Sided Pr > |Z|	0.0332
t Approximation	
One-Sided Pr < Z	0.0167
Two-Sided Pr > |Z|	0.0334
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	4.5340
DF	1
Pr > Chi-Square	0.0332

Post-Test:CG vs TG1

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
Wilcoxon Scores (Rank Sums) for Variable Profitability Classified by Variable group					
0	400	154795.50	155800.0	3132.93282	386.988750
1	378	148235.50	147231.0	3132.93282	422.157407
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	148235.5000
Normal Approximation	
Z	0.03205
One-Sided Pr > Z	0.03743
Two-Sided Pr > |Z|	0.07486
t Approximation	
One-Sided Pr > Z	0.03744
Two-Sided Pr > |Z|	0.07487
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	3.1028
DF	1
Pr > Chi-Square	0.07485

Post-Test:TG4 vs TG5

The NPAR1WAY Procedure

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
Wilcoxon Scores (Rank Sums) for Variable Profitability Classified by Variable group					
5	334	117299.50	112224.0	2510.62492	351.196108
4	337	108156.50	113232.0	2510.62492	320.939169
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	117299.5000
Normal Approximation	
Z	2.0214
One-Sided Pr > Z	0.0216
Two-Sided Pr > |Z|	0.0432
t Approximation	
One-Sided Pr > Z	0.0218
Two-Sided Pr > |Z|	0.0436
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	4.0869
DF	1
Pr > Chi-Square	0.0432

Post-Test:TG3 vs (TG4+TG5)

The NPAR1WAY Procedure

group2	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
Wilcoxon Scores (Rank Sums) for Variable Profitability Classified by Variable group2					
45	671	449682.0	450576.50	7098.55297	670.166915
3	671	451471.0	450576.50	7098.55297	672.833085
Average scores were used for ties.					

Wilcoxon Two-Sample Test	
Statistic	449682.0000
Normal Approximation	
Z	-0.1259
One-Sided Pr < Z	0.4499
Two-Sided Pr > |Z|	0.8998
t Approximation	
One-Sided Pr < Z	0.4499
Two-Sided Pr > |Z|	0.8998
Z includes a continuity correction of 0.5.	

Kruskal-Wallis Test	
Chi-Square	0.0159
DF	1
Pr > Chi-Square	0.8997

ANNEX 13 - Post-Test Statistical Analysis H5

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)		
Test for Defection:	Chi-Square	
Test for Repurchase:	Kruskal-Wallis	
Test for Complaints:	Kruskal-Wallis	
Test for Profitability:	Kruskal-Wallis	

.y.	group1	group2	n1	n2	statistic	p	p.adj	p.adj.signif
Defection	CG_Experienced	TG3_Experienced	203	344	-1,3010509	1,93E-01	1,000000e+00	ns
Defection	CG_Novice	TG3_Novice	197	327	-0,7551583	4,50E-01	1,000000e+00	ns
Repurchase	CG_Experienced	TG3_Experienced	203	344	-0,5964655	5,51E-01	1,000000e+00	ns
Repurchase	CG_Novice	TG3_Novice	197	327	0,2482364	8,04E-01	1,000000e+00	ns
Complaints	CG_Experienced	TG3_Experienced	203	344	1,3893381	1,65E-01	9,883798e-01	ns
Complaints	CG_Novice	TG3_Novice	197	327	-1,3399017	1,80E-01	1,000000e+00	ns
Profitability	CG_Experienced	TG3_Experienced	203	344	1,3393387	1,80E-01	1,000000e+00	ns
Profitability	CG_Novice	TG3_Novice	197	327	1,4092947	1,59E-01	9,524883e-01	ns

tenure_class	mean	median	variable
CG_Experienced	2,06403941	2,0000	Repurchase
CG_Novice	1,88832487	2,0000	Repurchase
TG3_Experienced	2,00581395	2,0000	Repurchase
TG3_Novice	1,83180428	2,0000	Repurchase
CG_Experienced	0,07389163	0,0000	Defection
CG_Novice	0,10659898	0,0000	Defection
TG3_Experienced	0,04360465	0,0000	Defection
TG3_Novice	0,08868502	0,0000	Defection
CG_Experienced	0,02463054	0,0000	Complaints
CG_Novice	0,07106599	0,0000	Complaints
TG3_Experienced	0,04069767	0,0000	Complaints
TG3_Novice	0,03975535	0,0000	Complaints
CG_Experienced	0,69562167	0,695	Profitability
CG_Novice	0,69099594	0,6939	Profitability
TG3_Experienced	0,69657849	0,696	Profitability
TG3_Novice	0,69294495	0,695	Profitability

ANNEX 13 - Post-Test Statistical Analysis H5

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)									
Test for Defection:	Chi-Square								
Test for Repurchase:	Kruskal-Wallis								
Test for Complaints:	Kruskal-Wallis								
Test for Profitability:	Kruskal-Wallis								
.y.	**group1**	**group2**	**n1**	**n2**	**statistic**	**p**	**p.adj**		**p.adj.signif**
Defection	CG_Experienced	TG2_Experienced	203	689	-2,336661	1,95E-02	1,167409e-01		ns
Defection	CG_Novice	TG2_Novice	197	653	-2,8995426	3,74E-03	2,242246e-02		*
Repurchase	CG_Experienced	TG2_Experienced	203	689	-1,0312082	3,02E-01	1,000000e+00		ns
Repurchase	CG_Novice	TG2_Novice	197	653	0,2563373	7,98E-01	1,000000e+00		ns
Complaints	CG_Experienced	TG2_Experienced	203	689	1,2204952	2,22E-01	1,000000e+00		ns
Complaints	CG_Novice	TG2_Novice	197	653	-0,8502317	3,95E-01	1,000000e+00		ns
Profitability	CG_Experienced	TG2_Experienced	203	689	1,3032738	1,92E-01	1,000000e+00		ns
Profitability	CG_Novice	TG2_Novice	197	653	1,6176872	1,06E-01	6,343801e-01		ns

tenure_class	mean	median	variable
CG_Experienced	2,06403941	2,0000	Repurchase
CG_Novice	1,88832487	2,0000	Repurchase
TG2_Experienced	1,95355588	2,0000	Repurchase
TG2_Novice	1,85298622	2,0000	Repurchase
CG_Experienced	0,07389163	0,0000	Defection
CG_Novice	0,10659898	0,0000	Defection
TG2_Experienced	0,03193033	0,0000	Defection
TG2_Novice	0,05359877	0,0000	Defection
CG_Experienced	0,02463054	0,0000	Complaints
CG_Novice	0,07106599	0,0000	Complaints
TG2_Experienced	0,04499274	0,0000	Complaints
TG2_Novice	0,05972435	0,0000	Complaints
CG_Experienced	0,69562167	0,695	Profitability
CG_Novice	0,69099594	0,6939	Profitability
TG2_Experienced	0,69652104	0,695	Profitability
TG2_Novice	0,69343645	0,695	Profitability

ANNEX 13 - Post-Test Statistical Analysis H5

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)									
Test for Defection:	Chi-Square								
Test for Repurchase:	Kruskal-Wallis								
Test for Complaints:	Kruskal-Wallis								
Test for Profitability:	Kruskal-Wallis								
.y.	group1	group2	n1	n2	statistic	p	p.adj		p.adj.signif
Defection	CG_Experienced	TG1_Experienced	203	192	-0,61303167	0,5398554	1,000000000		ns
Defection	CG_Novice	TG1_Novice	197	186	-1,13927542	0,2545883	1,000000000		ns
Repurchase	CG_Experienced	TG1_Experienced	203	192	0,23785007	0,81199738	1,000000000		ns
Repurchase	CG_Novice	TG1_Novice	197	186	0,54826721	0,58350844	1,000000000		ns
Complaints	CG_Experienced	TG1_Experienced	203	192	0,04609235	0,96323664	1,000000000		ns
Complaints	CG_Novice	TG1_Novice	197	186	-0,10807127	0,91393916	1,000000000		ns
Profitability	CG_Experienced	TG1_Experienced	203	192	0,90332354	0,39334246	0,258665855		ns
Profitability	CG_Novice	TG1_Novice	197	186	1,4173353	0,1157134	0,624036832		ns

tenure_class	mean	median	variable
CG_Experienced	2,06403941	2,0000	Repurchase
CG_Novice	1,88832487	2,0000	Repurchase
TG1_Experienced	2,09375	2,0000	Repurchase
TG1_Novice	1,93548387	2,0000	Repurchase
CG_Experienced	0,07389163	0,0000	Defection
CG_Novice	0,10659898	0,0000	Defection
TG1_Experienced	0,05729167	0,0000	Defection
TG1_Novice	0,07526882	0,0000	Defection
CG_Experienced	0,02463054	0,0000	Complaints
CG_Novice	0,07106599	0,0000	Complaints
TG1_Experienced	0,02604167	0,0000	Complaints
TG1_Novice	0,06989247	0,0000	Complaints
CG_Experienced	0,69562167	0,695	Profitability
CG_Novice	0,69099594	0,6939	Profitability
TG1_Experienced	0,69636458	0,695	Profitability
TG1_Novice	0,69283602	0,694	Profitability

ANNEX 13 - Post-Test Statistical Analysis H5

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)		
Test for Defection:	Chi-Square	
Test for Repurchase:	Kruskal-Wallis	
Test for Complaints:	Kruskal-Wallis	
Test for Profitability:	Kruskal-Wallis	

.y.	group1	group2	n1	n2	statistic	p	p.adj	p.adj.signif
Defection	TG4_Experienced	TG5_Experienced	169	167	1,5856019	1,13E-01	0,676977822	ns
Defection	TG4_Novice	TG5_Novice	163	163	-0,3988659	6,90E-01	1	ns
Repurchase	TG4_Experienced	TG5_Experienced	169	167	0,2846012	7,76E-01	1	ns
Repurchase	TG4_Novice	TG5_Novice	163	163	2,3198532	2,03E-02	0,122092925	ns
Complaints	TG4_Experienced	TG5_Experienced	169	167	-0,5841517	5,59E-01	1	ns
Complaints	TG4_Novice	TG5_Novice	163	163	-1,4532229	1,46E-01	0,876971323	ns
Profitability	TG4_Experienced	TG5_Experienced	169	167	0,7010553	4,83E-01	1	ns
Profitability	TG4_Novice	TG5_Novice	163	163	2,0889113	3,67E-02	0,220294258	ns

tenure_class	mean	median	variable
TG4_Experienced	1,86982249	2,000	Repurchase
TG4_Novice	1,76073620	1,000	Repurchase
TG5_Experienced	1,94011976	2,000	Repurchase
TG5_Novice	2,00613497	2,000	Repurchase
TG4_Experienced	0,00591716	0,000	Defection
TG4_Novice	0,02453988	0,000	Defection
TG5_Experienced	0,02994012	0,000	Defection
TG5_Novice	0,01840491	0,000	Defection
TG4_Experienced	0,07692308	0,000	Complaints
TG4_Novice	0,06748466	0,000	Complaints
TG5_Experienced	0,02395210	0,000	Complaints
TG5_Novice	0,03067485	0,000	Complaints
TG4_Experienced	0,69598817	0,695	Profitability
TG4_Novice	0,69282822	0,694	Profitability
TG5_Experienced	0,69711377	0,696	Profitability
TG5_Novice	0,69515337	0,695	Profitability

ANNEX 13 - Post-Test Statistical Analysis H5

Post-Test (2021) Analysis for H5 and H6 using R (Tenure)									
Test for Defection:	Chi-Square								
Test for Repurchase:	Kruskal-Wallis								
Test for Complaints:	Kruskal-Wallis								
Test for Profitability:	Kruskal-Wallis								
.y.	**group1**	**group2**	**n1**	**n2**	**statistic**	**p**	**p.adj**		**p.adj.signif**
Defection	TG3_Experienced	TG4_TG5_Experienced	344	336	-1,65857087	9,72E-02	5,83E-01		ns
Defection	TG3_Novice	TG4_TG5_Novice	327	326	-4,24308127	2,20E-05	1,32E-04		***
Repurchase	TG3_Experienced	TG4_TG5_Experienced	344	336	-0,74039066	4,59E-01	1,00E+00		ns
Repurchase	TG3_Novice	TG4_TG5_Novice	327	326	0,0644599	9,49E-01	1,00E+00		ns
Complaints	TG3_Experienced	TG4_TG5_Experienced	344	336	-0,53700582	5,91E-01	1,00E+00		ns
Complaints	TG3_Novice	TG4_TG5_Novice	327	326	0,82789851	4,08E-01	1,00E+00		ns
Profitability	TG3_Experienced	TG4_TG5_Experienced	344	336	-0,30675308	7,59E-01	1,00E+00		ns
Profitability	TG3_Novice	TG4_TG5_Novice	327	326	0,06145306	9,51E-01	1,00E+00		ns

tenure_class	mean	median	variable
TG3_Experienced	2,00581395	2,000	Repurchase
TG3_Novice	1,83180428	2,000	Repurchase
TG4_TG5_Experienced	1,90476190	2,000	Repurchase
TG4_TG5_Novice	1,88343558	2,000	Repurchase
TG3_Experienced	0,04360465	0,000	Defection
TG3_Novice	0,08868502	0,000	Defection
TG4_TG5_Experienced	0,01785714	0,000	Defection
TG4_TG5_Novice	0,02147239	0,000	Defection
TG3_Experienced	0,04069767	0,000	Complaints
TG3_Novice	0,03975535	0,000	Complaints
TG4_TG5_Experienced	0,05059524	0,000	Complaints
TG4_TG5_Novice	0,04907975	0,000	Complaints
TG3_Experienced	0,69657849	0,696	Profitability
TG3_Novice	0,69294495	0,695	Profitability
TG4_TG5_Experienced	0,69654762	0,695	Profitability
TG4_TG5_Novice	0,69310080	0,695	Profitability

ANNEX 14 - Post-Test Statistical Analysis H6

	Post-Test (2021) Analysis for H5 and H6 using R (Satisfaction)						
Test for Defection:	Chi-Square						
Test for Repurchase:	Kruskal-Wallis						
Test for Complaints:	Kruskal-Wallis						
Test for Profitability:	Kruskal-Wallis						

,y,	group1	group2	n1	n2	statistic	p	p,adj	p,adj,signif
Defection	TG3_high	TG4_TG5_high	467	475	-2,12E+00	3,36E-02	5,046821e-01	ns
Defection	TG3_low	TG4_TG5_low	81	77	-7,20E+00	5,93E-13	8,896651e-12	****
Defection	TG3_medium	TG4_TG5_medium	123	110	4,51E-01	6,52E-01	1,000000e+00	ns
Repurchase	TG3_high	TG4_TG5_high	467	475	-9,75E-01	3,30E-01	1,000000e+00	ns
Repurchase	TG3_low	TG4_TG5_low	81	77	1,15E+00	2,49E-01	1,000000e+00	ns
Repurchase	TG3_medium	TG4_TG5_medium	123	110	-9,62E-02	9,23E-01	1,000000e+00	ns
Complaints	TG3_high	TG4_TG5_high	467	475	6,67E-01	5,05E-01	1,000000e+00	ns
Complaints	TG3_low	TG4_TG5_low	81	77	-6,84E-01	4,94E-01	1,000000e+00	ns
Complaints	TG3_medium	TG4_TG5_medium	123	110	-1,73E-01	8,63E-01	1,000000e+00	ns
Profitability	TG3_high	TG4_TG5_high	467	475	-5,50E-01	5,83E-01	1,000000e+00	ns
Profitability	TG3_low	TG4_TG5_low	81	77	9,64E-01	3,35E-01	1,000000e+00	ns
Profitability	TG3_medium	TG4_TG5_medium	123	110	-7,90E-04	9,99E-01	1,000000e+00	ns

satisfaction_class	mean	median	variable
TG3_high	1,92291221	2,000	Repurchase
TG3_low	1,75308642	1,000	Repurchase
TG3_medium	2,02439024	2,000	Repurchase
TG4_TG5_high	1,87368421	2,000	Repurchase
TG4_TG5_low	1,93506494	2,000	Repurchase
TG4_TG5_medium	1,95454545	2,000	Repurchase
TG3_high	0,03854390	0,000	Defection
TG3_low	0,28395062	0,000	Defection
TG3_medium	0,02439024	0,000	Defection
TG4_TG5_high	0,01052632	0,000	Defection
TG4_TG5_low	0,05194805	0,000	Defection
TG4_TG5_medium	0,03636364	0,000	Defection
TG3_high	0,02141328	0,000	Complaints
TG3_low	0,14814815	0,000	Complaints
TG3_medium	0,04065041	0,000	Complaints
TG4_TG5_high	0,04210526	0,000	Complaints
TG4_TG5_low	0,11688312	0,000	Complaints
TG4_TG5_medium	0,03636364	0,000	Complaints
TG3_high	0,69480728	0,695	Profitability
TG3_low	0,69250617	0,695	Profitability
TG3_medium	0,69632520	0,696	Profitability
TG4_TG5_high	0,69514105	0,695	Profitability
TG4_TG5_low	0,69368831	0,695	Profitability
TG4_TG5_medium	0,69564545	0,696	Profitability

ANNEX 14 - Post-Test Statistical Analysis H6

Post-Test (2021) Analysis for H5 and H6 using R (Satisfaction)							
Test for Defection:	Chi-Square						
Test for Repurchase:	Kruskal-Wallis						
Test for Complaints:	Kruskal-Wallis						
Test for Profitability:	Kruskal-Wallis						

,y,	group1	group2	n1	n2	statistic	p	p,adj	p,adj,signif
Defection	TG4_high	TG5_high	237	238	0,32695961	7,44E-01	1,000000000	ns
Defection	TG4_low	TG5_low	39	38	1,6841987	9,21E-02	1,000000000	ns
Defection	TG4_medium	TG5_medium	56	54	0,04994689	9,60E-01	1,000000000	ns
Repurchase	TG4_high	TG5_high	237	238	1,40015422	1,61E-01	1,000000000	ns
Repurchase	TG4_low	TG5_low	39	38	1,37849355	1,68E-01	1,000000000	ns
Repurchase	TG4_medium	TG5_medium	56	54	0,45087334	6,52E-01	1,000000000	ns
Complaints	TG4_high	TG5_high	237	238	-0,50405352	6,14E-01	1,000000000	ns
Complaints	TG4_low	TG5_low	39	38	-2,95753727	3,10E-03	0,046516089	*
Complaints	TG4_medium	TG5_medium	56	54	0,0361316	9,71E-01	1,000000000	ns
Profitability	TG4_high	TG5_high	237	238	1,6632049	9,63E-02	1,000000000	ns
Profitability	TG4_low	TG5_low	39	38	0,82001147	4,12E-01	1,000000000	ns
Profitability	TG4_medium	TG5_medium	56	54	0,70324182	4,82E-01	1,000000000	ns

satisfaction_class	mean	median	variable
TG4_high	1,797468354	2,000	Repurchase
TG4_low	1,820512821	1,000	Repurchase
TG4_medium	1,892857143	2,000	Repurchase
TG5_high	1,949579832	2,000	Repurchase
TG5_low	2,052631579	2,000	Repurchase
TG5_medium	2,018518519	2,000	Repurchase
TG4_high	0,008438819	0,000	Defection
TG4_low	0,025641026	0,000	Defection
TG4_medium	0,035714286	0,000	Defection
TG5_high	0,012605042	0,000	Defection
TG5_low	0,078947368	0,000	Defection
TG5_medium	0,037037037	0,000	Defection
TG4_high	0,059071730	0,000	Complaints
TG4_low	0,205128205	0,000	Complaints
TG4_medium	0,035714286	0,000	Complaints
TG5_high	0,025210084	0,000	Complaints
TG5_low	0,026315789	0,000	Complaints
TG5_medium	0,037037037	0,000	Complaints
TG4_high	0,694236287	0,694	Profitability
TG4_low	0,694871795	0,696	Profitability
TG4_medium	0,694982143	0,695	Profitability
TG5_high	0,696042017	0,695	Profitability
TG5_low	0,696526316	0,695	Profitability
TG5_medium	0,696333333	0,696	Profitability

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