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Master Thesis: Customer Experience Return on Investment (CX ROI)

What is the impact of customer-based investments in the firm's Customer Experience,
measured by the Net Promoter Score (NPS), in the Financial Services Industry?

Pilot Methodology with a Concept Validation - Practical Case

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Abstract

Nowadays, Customer Experience is in the center of every company's strategy. However, executives struggle to accurately compute Customer-based investments' ROI using currently available tools. Based on recent KPMG studies, this research aims to determine, statistically, which are the main drivers of a successful CX delivered by a given firm, measured through the NPS. Using real evidence from a Portuguese Bank and Alteryx software, a practical case was performed to validate the robustness of the research methodology. Final conclusions advocate that different customers' behavior lead to different CX drivers, suggesting the importance of Personas' Analysis to efficiently reach a better CX.

Key Words: Customer Experience; Net Promoter Score; Personas Clustering Analysis; KPMG Nunwood 6 Pillars

1. Goals of the Research Project

1.1. Main Research Challenge

Customer Experience (CX) Return on Investment (ROI): What is the impact of customer-based investments in the firm's Customer Experience, measured by the Net Promoter Score (NPS), in the Financial Services Industry? (Pilot Methodology with a Practical Case)

1.2. Motivation

The customer experience is the next competitive battleground (Jerry Gregoire, former CIO for Dell Computer Corporation).

Nowadays Customer Experience (CX) is in the center of companies' strategies and, consequently it is disrupting most businesses. The drivers for these changes are related with new customer behaviors, emerging technologies and big data. By shifting the way that business models are thought and operationalized, many industries, and mainly Financial Services, have now the challenge to prioritize investments based on reliable decision-making models that maximize return leveraged upon enhanced customer satisfaction.

Furthermore, due to the rise of Fintechs and the Revised Payment Services Directive (PSD2), the payments industry is one of the most disrupting industries since it is becoming a new and wider ecosystem. This new environment is forcing banks to completely adapt their business models and reinvent traditional ways of doing things. Hence, digital transformation is currently in the heart of financial services companies.

Nowadays, customers are constantly in contact with several companies. Big brands such as Amazon and Facebook have been investing millions of dollars in creating the best CX to their customers and have set the bar high to the other industries since customers tend to compare their experience across sectors. As a result, customers became more aware and increasingly

demanding concerning products and services but essentially, they became quite judgmental regarding their customer journeys.

C-level executives typically struggle between two different perspectives when looking at the best way of leading their companies: the medium / long term strategy and the short (annual) objectives. In the medium / long term strategy, senior executives plan where they want their companies to be in 5 to 10 years' time. The annual objectives are typically translated into annual budget targets. In both cases return on investment plays a key role in the decision-making process. Given disrupting environment where companies are converging to customer-centric brands and relevant investments are being undertaken by companies across all industries, the calculation of CX ROI is deemed as a critical success factor for both short and medium / long term growth. Even though, many companies are still relying investment decisions upon traditional Net Present Value and Internal Rate of Return approaches which are far from accurate since they do not take into consideration the relation between CX, customer share of wallet and expected profitability. Senior executives' struggle to adopt this integrated investment methodology since customer journeys differ for each customer type which makes its computation strongly difficult to measure.

To sum up, giving the limitations resulting from a poor performance and unreliability of the current investment tools, such as the NPV and IRR to forecast the ROI of Customer Experience based investments, a new methodology is required to address the concerns presented by some of the more sophisticated companies.

KPMG as one of the vanguard leaders in the Advisory ecosystem, is trying to be a step ahead of the competition by developing a creative and functional methodology that enables the creation of sustainable value to its clients. Furthermore, KPMG is in a continuous process of expanding its knowledge and industry expertise in order to build up innovative, technology-

driven solutions. The main goal is to be continuously preferred to support clients addressing their vital business challenges and helping them grow and increase shareholders' value.

Given the overall context, this thesis aims to use the concept of the Net Promoter Score (NPS), widely explained in the Literature Review, as a way to compute the impact of the activities performed by the company in order to improve its CX. Afterwards, further studies are necessary to evaluate the financial impact of changes in the NPSs in the firm's profitability. Given the total amount invested in a firm's project, all the ingredients needed to compute the CX ROI should be known.

2. Literature Review

2.1. Discussion of Previous Research

“Offering products or services alone isn't enough these days: organizations must provide their customers with satisfactory experience” (Carbone & Haeckel, 1994). This is how Lou Carbone, considered the father of the “customer experience” term, triggered the experience movement as a hot topic in the business literature and in business executives' agenda. In fact, it was in 1994, with Carbone's article *Engineering Customer Experiences* that the customer experience concept kicked off and from that time until now it has not been cooled down.

In this article, customer experience is defined as the “takeaway impression formed by people's encounters with the product / service delivered by the firm” (Carbone & Haeckel, 1994). These impressions result from the consolidation of all kinds of sensory information sent by the firms to their customers. Later on, Meyer and Schwager completed this definition by stating customer experience as “the internal and subjective response customers have to any direct or indirect contact with a company” (Meyer & Schwager, 2007). Being direct contact an action usually initiated by the customer in order to purchase a product or use a service, and

indirect contact associated with unplanned encounters with both official and unofficial representations of the firm.

On his truly famous book *Clued In: How to Keep Customers Coming Back Again and Again*, Carbone stated that companies should think about incorporating customer experience into their business design since it would establish customer preference (Carbone, 2004). In fact, his experiment advocated that firms' differentiation and customers' preferences would migrate, in the beginning of the century, from the offerings themselves to the institutions capable of creating a superior CX. As a result, firms should have begun to invest in engineering the experience delivered to their customers from a highly intuitive art form into a management discipline.

Carbone's pioneer studies had an enormous impact on how the organizations run their businesses, since their focus started to shift from a product / service orientation to a more customer-centric one. At that time, many papers and researches were published supporting the importance of an exceptional CX in achieving superior annual sales' growth rates such as "Neglected Outcomes of Customer Satisfaction" (Luo & Homburg, 2007) and "Customer satisfaction and loyalty in online and offline environments" (Shankar, et al., 2003) . Moreover, these studies were sustained by the outstanding results accomplished by firms with a clear superior experience delivered to customers across their industry. Accordingly, one should not argue that the 21st century business world was disrupting to a state where the success is no longer driven by the products or services offered by the companies, but instead it is driven by how well the experience met the customers' ever-changing emotional needs and wants (Carbone, 2004).

Consequently, from that time onwards, some customer experience (CX) measurement tools started to be developed by researchers and practitioners. The first customer-oriented metric to

gain a significant foothold was the SERVQUAL scale developed in the mid-1990s by Parasuraman and his colleagues. This metric was composed by 22 instruments that allowed retailing firms to assess consumer expectations and service quality through 5 pillars: tangibles; reliability; responsiveness; assurance and empathy (Parasuraman, et al., 1988). However, Executives soon found out that measuring service quality haven't been guiding managers to specific actions (Keiningham, et al., 2006).

Afterwards, other tools such as the C-SAT and the Retention Rate gained some importance near practitioners and started to be used by most firms worldwide. However, all these measures had one thing in common, namely the modest performance of the linkage between customer behavior forecasted by these tools and the financial outcomes (Keiningham, et al., 2006). In fact, as noted by Reichheld and Markey, Retention Rate only tracks customer churn, that is, how fast the customer bucket is emptying, but it says nothing on the equally important question of how fast the bucket is filling up (Reichheld & Markey, 2011). Also, in industries comprising large switching costs or other barriers to change product / service provider, such as the ones in which Monopolies or Oligopolies are present, this measure illustrates a considerably poor indicator of customer's behavior. Regarding the other widely used customer satisfaction measure, the C-SAT, those same authors argue that it is even less reliable since there is little evidence of the robust connection between satisfaction rates and actual customer behavior, and, consequently between satisfaction rates and a company's growth (Reichheld & Markey, 2011). Books such as *Customer Satisfaction is Worthless, Customer Loyalty is Priceless* (Gitomer, 1998) are indicative of the widespread frustration and the need for better customer-centric measuring tools.

It was this commitment that led Reichheld, a director of the consulting firm Bain & Company, to develop "the single most reliable indicator of firm growth compared with other loyalty measures" (Reichheld, 2003) in 2003, the Net Promoter Score (NPS). A firm's NPS is

calculated by asking a simple question to its customers, specifically “on a zero to ten scale, how likely is it that you would recommend us for this product / service / brand to a friend or colleague?”. During his researches, Reichheld found out that customers typically fall into three well-defined groups with distinct pattern of behaviors and attitudes, namely Promoters who answered 9 or 10; Passives that replied with 7 or 8; and Detractors with 0 to 6. The NPS is then computed by simply subtracting the percentage of the firm’s Detractors to the percentage of its Promoters.

Promoters can be characterized as customers whose lives have been enriched by their relationship with the company and, as a result, they spread their enthusiasm to friends and colleagues. Concerning Passives, they are passively satisfied customers that make few referrals and if a competitor’s discount ad catches their eye, they are likely to defect. On the other hand, Detractors are customers whose lives have been diminished by their dealings with the company. Thus, it is most likely that they will switch provider at the first opportunity and leave behind some complaints and dissatisfied ratings all over the place (Reichheld, 2006). This measurement tool joins together two important concepts in customer experience – Word of Mouth and Loyalty.

Berger and Schwartz refer to Word of Mouth (WOM) “when a consumer’s interest for a company’s product or service is reflected in their daily dialogs” (Berger & Schwartz, 2011). According to Reichheld, there are two conditions that must be satisfied before customers make a personal referral, the firm must be able to engage both the customer’s head and heart (Reichheld, 2006). That is, the first condition is that the person must believe that the firm offers superior value when comparing to its competitors, in terms of price, quality, ease of use, or other features. The second condition indicates that the customer must feel good about his relationship with the company. Basically, he must feel that the firm knows and understands him, values him, listens to him, and share his principles. This clarifies why the recommended

question plays a vital role in measuring the quality of the customer-firm relationship. Indeed, the customer must believe that his friend / colleague will not only get good value but will also be treated well, which incorporates both the rational and emotional dimensions.

Reichheld defines loyalty as “the willingness of someone, a customer, an employee, a friend, to make an investment or personal sacrifice in order to strengthen a relationship.” (Reichheld, 2001). As a result, customer loyalty is not a synonym of repeated purchases. On the one hand, one can buy several times from the same firm not because he is a loyal customer but as a result of being trapped by inertia, indifference or exit barriers created by either the firm or the circumstance. On the other hand, a loyal customer may not purchase the product / service on a regular basis just because he has a reduced need for it. Nonetheless, real loyal customers affect positively a firm’s profitability. As reported by Reichheld “true loyalty customers reduce the firm’s customer acquisition costs and drive top-line growth” (Reichheld, 2001). By putting their reputation at stake when recommending a certain company to their social group, loyal customers are bringing new customers to that same company at no cost. In practice, they are being part of the firm’s marketing team in a profitable, sustainable way. Moreover, these clients tend to buy more over time as their income increases or by using a higher share of their earnings (Reichheld, 2001).

To test for a potential correlation between survey responses (a variety of 20 different questions) and actual behavior that would ultimately lead to profitable growth, mainly referral and purchase behavior, this investigation was executed. In the end, results were enlightening, as the NPS question was among the 20 questions the one that presented the strongest statistical correlation across all industries. Hence, NPS was effectively the most robust predictor of such behaviors that drive growth. Yet, results were even more insightful when the research showed evidence of a strong correlation between a company’s growth rate and the NPS in a broad range of industries. In conclusion, Reichheld stated that in some cases, NPS also did a poor job to

predict relative growth in industries dominated by monopolies and oligopolies, where customers have little choice. But for most companies in most industries, getting customers enthusiastic enough to recommend a company, by an exceptional customer experience, appears to be crucial to growth (Reichheld, 2003). To sum up, according to Reichheld's researches, it was possible to develop a CX measure capable of linking customers' answers with growth and profitability accurately. Hence, firms could finally associate the Mission to deliver an outstanding experience to their customers with the mathematics of achieving higher growth rates and profitability.

The NPS' implementation by firms was made in a lightning speed. At that time, organizations were struggling to incorporate in their financial accounting the idea that success in business results from the impact on the individuals they connect with every day and the subsequent relationships. Therefore, thousands of innovative companies, including Apple, Allianz, American Express, eBay, and Facebook adopted NPS. They used it not only to track loyalty, engagement and enthusiasm of their customers, but also to carry out their strategy to put customers at the center of the entire organization. Also, NPS was a tremendous success among practitioners due to its simplicity and "open-source method that can be adapted to firms' needs" (Reichheld & Markey, 2011).

Reichheld and his colleagues continued to follow the connection between NPS and annual sales growth rate in the subsequent years. In their recently published book, *The Ultimate Question 2.0* (Reichheld & Markey, 2011), the idea that companies with highest NPS in their industries typically enjoy both strong profits and healthy growths was reinforced. Collected data from a 10-year period showed that NPS leaders in their industries tend to grow two times more than competitors in the United States. Nevertheless, the average NPS scores were around 10 to 20 percent and, thus, there was plenty of room for improvement.

From the introduction of NPS in the Marketing Literature on, many researchers started to test Reichheld's statement that "NPS is the most reliable indicator of the linkage between customer experience and annual growth rate" (Reichheld, 2003) in different time periods, industries and geographies.

Marsden et al. found that NPS was statistically significant predictors of annual sales growth in same industries in the UK in 2003-2004 (Marsden, et al., 2005). In fact, this correlation was particularly strong in the retail banking industry in which the NPS effect became tremendously strong as the score approached zero, suggesting this industry is particularly susceptible to word of mouth and loyalty. To sum up, the authors concluded NPS is able to not only predict sales growth but also to predict share performance and employee productivity.

In the following years, Aksoy et al. performed similar studies but using data from the Norwegian Customer Satisfaction Barometer. Though, results did not remain robust as expected since NPS was correlated with past growth rates rather than current or future sales growth rates (Keiningham, et al., 2007). Complementarily, Gigliotti et al. (Gigliotti, et al., 2007) carried out an examination of the strengths and limitations of NPS concepts from a practitioner's perspective. The model's results showed that NPS did not appear consistently as the best customer feedback metric in terms of correlation with financial performance, opposing Reichheld's allegation on NPS superior performance (Reichheld, 2006).

More recently, Feetham et al. also contributed to the Customer Experience literature by including evidence from the Australasian context. The results gave "support for NPS as a predictor of a company annual growth rate and confirms that promoters do buy more than other customers" (Feetham, et al., 2018).

Despite all this debate and controversy around the reliability of NPS, this measuring tool is still used by most companies in the S&P500 and across the world. Mainly, due to the fact that

its connection to customer behavior, growth and profitability has sustained robust from the majority of industries and time periods as well as to its simple features. As a result, researchers and practitioners still consider NPS as a superior indicator of CX when compared to the remaining tools. For a matter of fact, across its period of existence, NPS has been providing relevant insights to organizations' executives and, consequently, it is a vital indicator in the current academic and business context.

2.2. Literature Gap

Nowadays Customer Experience (CX) is in the center of enterprises' innovation and consequently many industries, especially the financial services industry, are focusing on Customer Satisfaction. However, many CX projects stall because executives cannot illustrate exactly how these activities will create value for the firm.

In fact, executives have no doubt about the theoretical financial benefits of a customer-centric strategy. More satisfied customers lead to increased loyalty, hence, lower costs to serve, higher ARPU and more engaged employees. According to a recent study developed by Bain & Company, on average, an industry's loyalty leader grows more than twice as fast as its competitors (Bain & Company, 2011). However, in one of the latest studies performed by McKinsey, fewer than half of the customer-experience leaders interviewed in their research could say what a ten-point increase in the net promoter score would be worth to their businesses (McKinsey & Company, 2017).

As a result, it is crucial for firms to create a solid and coherent business model that provides an unambiguous link between CX and its economic outcomes. Indeed, when executives are able to establishing this link well, it provides a clear view of what matters to customers, where to focus, and how to keep the CX high on the list of strategic priorities. In this way, these kinds of projects will build momentum among functional executives and earn a seat at the strategy table.

Here is where the Net Promoter System gains importance. As previously explained, NPS is a method of measuring customers' loyalty by sorting them into promoters, passives and detractors. Then, it is simply computed as the percentage of promoters minus the percentage of detractors. NPS is a well-known measure among researchers and practitioners and it is used by thousands of companies worldwide, including the most innovative ones. Most of its success comes from the ability of this indicator to connect customers' survey answers with their behavior and subsequent financial outcomes. Additionally, this ability has remained robust through different time periods, industry sectors and geographies.

Indeed, literature shows that customers who are promoters recommend more (becoming a salesforce extension), stay longer and consume more. As a result, the creation of loyal promoters not only reduces customer acquisition costs, but also improves the ARPU.

For instance, according to a Bain & Company study, in a commercial bank, promoters are worth far more than the others. "They maintain 45% higher deposits and loan balances, use 25% more banking services and stay with the bank 3x longer, at the same time they are recommending 7x more to friends and colleagues" (Bain & Company, 2012). Hence, it is essential for banks to understand explicitly which are their main CX drivers and build on from there, instead of just following the industry digital trend and invest excessively on experience-based features that are not what their customers really want.

Subsequently, firms must know how to link their customer experience to value. As reported by a McKinsey study, "the best way to construct this link is by defining the customer behavior that creates value for the firm's business and then, follow customer satisfaction over time to quantify the economic outcomes of different experiences" (McKinsey & Company, 2016).

In this phase, it is vital to track all different moments and touch points that customers will experience due to their interactions with the firm. To study the customer journey, it is necessary

to take into account that each type of customers (represented by personas) exhibits significantly different patterns of behavior which translate into different customer journeys. Those differences will result in distinct retention rate pricing, annual spending, cost efficiencies, word of mouth, and so on for the firm. Therefore, modeling customer satisfaction around the different journeys allows for a much more accurate end-to-end lifetime value for each persona.

According to Duncan et al., the potential financial impact of each persona NPS is based on three measures: reducing the cost to serve; capturing longer-term revenues and loyalty; and improving overall satisfaction (Duncan, et al., 2013). To do this, it is required to compute each initiative's expected value – combination between the impact magnitudes with its frequency –, time to capture, and cost to implement.

Bringing everything into a conclusion, it is clearly missing a careful analysis and model that allow companies to accurately estimate the impact of proposed actions and initiatives on the company' customer experience, measured by the NPS. This approach could provide guidance in quantifying the Return on Investment of investments in improving customer experience and, hence, avoid that this kind of projects stall due to their unclear results.

3. Empirical Analysis

Knowing the overall market needs, most of the topic-related researches developed until now and the overall business context, it is time to “crack” the case. By joining my academic knowledge in both Management and Finance with KPMG's expertise in the Financial Services Industry, a pilot methodology was developed to attempt to mitigate the referred gap.

It is important to reinforce that the main purpose of this research is to establish a simple but functional model that many companies could adopt to estimate the impact of a given activity on the CX offered to their customer base, measured through the NPS. For that reason, a practical case of the proposed methodology was implemented using as input, data collected from a

Portuguese financial services institution's investment department (i.e. the Bank). By doing so, it was possible to validate the research methodology using real evidence. Therefore, at the end of the analysis, a proper evaluation of the final results was conducted to investigate not only its functionality and robustness but also its usefulness to diminish the market problem.

The final methodology can be divided in five steps, namely: (1) Customers' Survey; (2) Survey's Data Analysis; (3) Clustering Analysis; (4) Outputs; (5) Next Steps.

3.1. Customers' Survey

It is well documented that having deep insights and awareness about customers' habits and preferences it is vital to predict future behaviors. Indeed, routines are part of our day-to-day life. Contrarily, changes in stock prices are independent of each other, since they take a random and unpredictable path (Random Walk Theory). Accordingly, the first step of the proposed methodology is the implementation of a questionnaire to gather information regarding customers' behaviors.

As stated by Kevin Wright (Wright, 2017), as of today, the online survey method is the most popular way of gathering data from target participants. Aside from the convenience and flexibility of gathering a large amount of data, online surveys are ideal for scientific research studies because they provide all participants with a standardized stimulus which results in an unbiased dataset. Furthermore, because of the high representativeness brought by the survey method, it is often easier to find statistically significant results and model robustness than in other data gathering methods.

Given that the e-mail is a frequently used channel of communication between companies and customers, an online survey via e-mail was sent to Bank's customer base, for a total universe of 3883 possible respondents. The survey went public on the 4th April 2018 and was

closed 10 days later on the 14th of April 2018. The survey was composed by 1 binary, 9 closed qualitative and 14 quantitative questions for a total of 24. (Appendixes 1 to 3).

As previously mentioned, the main objective of this survey was to get to know the Bank's customers through the understanding of three main backbones: what is bringing customers to the Bank; what they think and say about the Bank; and what the Bank can offer to improve its customers' satisfaction. This preliminary stage of understanding customers is essential to determine their needs, habits and preferences and, consequently, to identify how the Bank can create value to them and, hence, to its shareholders.

3.2. Survey's Data Analysis

After gathering all survey data, it was necessary to analyze the data collected. Since the final purpose of this data is to use it as the input for statistical analysis, it was crucial to develop a Data Preparation analysis. Data Preparation is the process of collecting, cleaning, and consolidating data into one file, primarily for use in econometric models. Therefore, the following methodology was applied.

After transferring all answers from "Survey Monkey" to Excel, those answers were organized, clearing unnecessary white spaces and non-relevant information. Afterwards, using histograms and scatterplots, outliers were identified. Inconsistent observations (e.g. people aged 25 and married for 20 years) were removed. The second step was to transform the data. In order to use it as input in econometric models, the data had to be restructured, that is, reshaped into quantitative data. The survey data is mostly composed of discrete and nominal data, therefore, a data blending operation was required in order to transform nominal data into numerical data through the creation of new dummy variables (Appendixes 4 and 5).

Note that, since all answers were collected from participants at a given point in time, this dataset consists of cross-sectional data.

In this phase, it is extremely important to look for the quality of the data and its statistical significance. Ultimately, the researcher must acknowledge that his survey has yielded trustworthy answers which can be used confidently to infer conclusions. As a result, an assessment of data accuracy was conducted in which invalid results (for example, same option number answered in every question) and missing answers values were removed from the data set. In the end of the data analysis, a total of 242 valid answers were gathered and used as input in the next steps of the current research (Appendix 6).

3.3. Clustering Analysis

Every individual is unique and has different needs, preferences and values that distinguish him from the others. Hence, the perception of his customer journey in a given company might be undoubtedly distinct from that of another customer with the same customer journey. Therefore, each customer will have different perceptions about the customer experience delivered by the same company, which then implies different levels of satisfaction. Nevertheless, it is nearly impossible to study each customer individually since it would be excessively expensive and time consuming. Still, this exhaustive analysis will not bring much value added, whereas the segmentation of a firm's customer pool grounded on their characteristics constitutes an accurate and robust approach of simplifying it. Consequently, by implementing a clustering analysis, customer data collection and subsequent analysis can still be authentic and worthy.

Nowadays, companies are shifting their way of dealing with customers: from grouping them based on standard characteristics (i.e. socio-demographic, such as age, gender, income, geographic, among others) towards the usage of personas. A "Persona" is a fictional representation of a group of customers that somehow have similar characteristics in terms of preferences, needs, behaviors and goals. Each persona will have its own characteristics but what

clearly differentiates it from another one are mainly its behavioral attributes, such as consumption styles and preferences. Evidently, by having different behavioral patterns, different personas translate into distinct customer journeys.

Accordingly, clustering the customer base brings considerable value to the model since on the one hand, individuals from the same persona will react similarly to given stimulus, but on the other hand, individuals from different personas will most likely react differently. Therefore, the integration of these different variations in the model will enhance the analysis to become more complete and rigorous.

The present methodological step constitutes one of the most important since its results will determine and impact immensely the final paper's outcomes. Consequently, this step was developed in a widely adopted statistical software used in KPMG and in many multinational companies such as Walmart and Amazon Web Services, called Alteryx. Alteryx is a purpose-built platform that aims to solve complex analytic business problems using easily accessible statistical tools. The main advantage of this software is its modern and intuitive platform that drives business-changing outcomes through repeatable workflows with less time and effort. To perform this clustering analysis the following Alteryx tools were used (Appendix 7):

- K-Centroids Diagnostics Tool: to find the optimal number of clusters;
- K-Centroids Cluster Analysis Tool: to divide each customer to the optimal cluster;
- Append Cluster Tool: to adapt the output of the previous tool to the excel dataset.

Once more, the major concern to take into account when deciding which variables to use as inputs for the Clustering Analysis must be the main research goal and the rationale behind it. Accordingly, in order to analyze a firm's customer experience, first it is necessary to identify and describe all the variables that are relevant in explaining it.

KPMG recently acquired a company that is specialized in customer experience: Nunwood. With more than a decade of research and several awards won, Nunwood identified six fundamental components of every great experience – the Six Pillars.

The 6 Pillar CX model is rooted in human psychology and motivation and it was developed to provide an accurate and practical perspective of critical values that customers value the most in a successful experience delivered by a firm. Basically, this model intends to define the variables that better explain a good result in terms of customer experience since all other measurement tools, namely the Retention Rate and the C-SAT, were far from delivering it. The Six Pillars Model has been under strict scrutiny in several markets and modeled against commercial outcomes throughout time showing consistently positive results. Therefore, those six indicators were considered as the independent variables in the current research due to their explanatory power over the CX measurement.

Those 6 fundamental components of an ideal experience are the following (Appendix 8):

- Personalization: Using individualized attention to drive emotional connection;
- Integrity: Being trustworthy and engendering trust;
- Expectations: Managing, meeting and exceeding customer expectations;
- Time and Effort: Minimizing customer effort and creating frictionless processes;
- Resolution: Turning a poor experience into a great one;
- Empathy: Achieving an understanding about the customer's contexts to drive deep rapport.

However, these variables presents a downside – they are difficult to measure. Indeed, asking a customer what his level of satisfaction is regarding the Bank's Integrity is non-quantifiable nor objective. Consequently, it was needed to use proxy variables for each Pillar (Appendix 9).

Following this conceptualization, the data set was divided based on how much each customer values each Nunwood Pillar. In fact, there are some pillars that an individual values

more when comparing to others. Consequently, each persona will be composed by customers that have similar appreciations of which are the most and less important components in their relationships with firms. This division is critical since these valuations are the backbone of customers' behavior, preferences and needs that impacted immensely their past actions and will influence future ones.

3.3.1. Clustering Analysis - Results

The Alteryx Output clearly shows 3 different clusters (i.e. Personas) with well-defined Pillars Valorization. Persona nº1 clearly shows a high valuation for Empathy, followed by the Integrity, Time & Effort and Personalization Pillars. Persona nº2 shows a huge valorization for the Resolution Pillar, followed by the Empathy and Expectations Pillars. Persona nº3 shows also an enormous valuation, which in this case is around the Expectations Pillar, followed by the Empathy Pillar which also presents a significant weight (Appendixes 10 and 11).

3.3.2. Personas' Descriptive Analysis

After clustering the customer base (comprised by the respondents) in personas, it is important to describe each one of them regarding their characteristics to improve the firm's knowledge about its customers. As shown by the Descriptive Analysis Table (Appendix 12), the main drivers that explain the identified personas were the following: Age, Monthly Income, Number of Years as Customer, Bank's Investment Portfolio Weight, Total Investment Portfolio, Investment Horizon & Risk (drivers that characterize a persona); Preferable Channels, and Influence of a Campaign in their decisions (drivers that characterize the relationship with the Bank).

Persona 1, called from now onwards José Empathetic, is a customer aged 40 to 60 with an average monthly income of around 25 000€. He is a Bank's customer for 4 to 5 years with an average investment portfolio value hold in the Bank of 50 000€, which represents around 55%

of his total investment portfolio. Furthermore, he tends to have a medium-term investment horizon with a low risk profile. Regarding his ways of interacting with the Bank, he usually uses the Bank's counters and for some activities he prefers to use the Home Banking Portal. Lastly, he shows little reaction to campaigns and other personalized offers proactively proposed by the Bank in his decision-making process.

Persona 2, called Pedro Resolved, is a younger customer aged 30 to 50 with an average monthly income of around 30 000€. He is a Bank's customer for shorter time (3 to 4 years) with an average investment portfolio value hold in the Bank of 50 000€, which represents around 50% of his total investment portfolio. Furthermore, he tends to have a short-medium term investment horizon with a low risk profile. Regarding his ways of interacting with the Bank, he is an active user of digital channels (mainly Home Banking and in some situations the e-mail). Lastly, he is quite receptive to campaigns and other personalized offers proactively proposed by the Bank to make investment decisions and acquire new products / services.

Persona 3, called Alberto Expectant, is an older customer aged 45 to 70 with an average monthly income of around 30 000€. He is a Bank's customer for 4 to 5 years with an average investment portfolio value hold in the Bank of around 70 000€, which represents the majority (70%) of his total investment portfolio. Furthermore, he tends to have a medium-term investment horizon with a risk aversion profile (very low risk-taker). Regarding his ways of interacting with the Bank, he is an active user of Bank's counters with low usage of digital channels. Lastly, he is also quite receptive to campaigns and other personalized offers proactively proposed by the Bank to make investment decisions and acquire new products / services.

To sum up, each persona demonstrates specific behavior (as a consequence of different Pillars' valorizations), and, therefore, its own customer journey. Given that each customer-

based activity undertaken by a given company will impact differently each customer journey, this clustering model allows analysts to have a more robust approach to evaluate that same impact in the various customer experiences offered, measured through customer segments.

3.4. Output

3.4.1. NPS Regression

As explained before, the NPS is a well-accepted and widely used tool to measure the Customer Experience offered by each firm. Currently, it is one of the key indicators that C-Level Executives look every day to make strategic decisions.

The Clustering Analysis was developed to calculate the impact each pillar has in the different customer journeys (one customer journey refers to the way by which one persona interacts with the Bank). Subsequently, a linear regression was performed for each persona, to find out which of the 6 Nunwood Pillars (independent variables) are driving the customers' NPS (dependent variable). To analyze that relationship an OLS regression was performed.

According to the literature, the OLS is the most common estimation method for linear models since it has proven to be the most efficient one to get the best possible estimates. This superior performance only holds when the model satisfies all 6 Gauss-Markov assumptions.

After testing for the violation of those assumptions, it was diagnosed strong multicollinearity (Appendix 13). This situation happens when the independent variables are not only strongly correlated with the dependent variable but also between them, which could result in redundant variables. In other words, despite the explanatory power of each pillar, it is extremely complicated to clearly identify the individual effect of each pillar on average *ceteris paribus*. Furthermore, the correlation between independent variables overestimates each pillar's standard error, which could impact the t-test and lead to the non-rejection of the null hypothesis more often than it should, meaning that significant variables would potentially be considered

insignificant. This problem is usually observed in cross-sectional datasets without an extensive number of observations, such as the current one.

Given that the possible solutions to this problem were inaccessible – increasing the number of observations (the survey was already closed at the time the analysis was performed) and performing a Principal Component Analysis (taking into account this paper’s methodology and objective it didn’t make sense to agglomerate pillars) –, a deeper understanding of the data behavior was necessary to check what was causing the correlation between pillars.

In fact, when the NPS is an extreme value – severe Detractors with NPS lower than 3 and severe Promoters with NPS equal to 10 –, the correlation matrix presents huge multicollinearity (Appendix 14). Intuitively, this result makes sense since when a customer is completely dissatisfied / satisfied with an experience, his satisfaction regarding the various pillars will be affected and, consequently, will converge to the minimum / maximum level of satisfaction, respectively, even though there are some components in the experience that he is not so dissatisfied / satisfied about (Outcome Bias). As a result, a sub analysis of the dataset was conducted, removing these NPS extreme values, in order to have linear regressions with lower multicollinearity without losing many observations. In the end, this problem was mitigated by around 30% (Appendixes 15 to 17).

The final results for each persona show that:

- For José Empathetic, Resolution (beta = 0.59), Integrity (beta = 0.42) and Expectations (beta = 0.23) are the Pillars that helps to explain his NPS (Appendix 18);
- Pedro Resolved’s NPS mainly depends on his satisfaction on Resolution (beta = 0.60), Expectations (beta = 0.49) and Time & Effort (beta = 0.40) (Appendix 19);
- Alberto Expectant’s NPS mainly depends on his satisfaction on Empathy (beta = 0.39), Integrity (beta = 0.36) and Time & Effort (beta = 0.35) (Appendix 20).

Therefore, as an illustration, for José Empathetic, it is possible to state with 90% confidence (for a significance level of 10 percent) that a one-point increase in the Resolution Pillar's level of satisfaction, will result, on average, in a 0.59 increase on the customer's NPS, *ceteris paribus*.

3.4.2. Significant Variables vs Level of Satisfaction

After the Clustering analysis, it is possible to conduct a simple comparison between NPS' significant variables and the current level of satisfaction towards each pillar for each persona. This investigation aims to assess the firm's ability to deliver to its customers what they really want and, hence, its capability to completely satisfy their needs (Appendix 21).

After analyzing the results obtained, it was possible to conclude the following:

- José Empathetic's NPS depends on the Resolution, Integrity and Expectations Pillars. Nevertheless, by looking at the level of satisfaction of each pillar, it is possible to conclude the Bank is only doing a decent job in delivering a decent customer experience, since all pillars have a satisfaction level between 3 and 4 out of 5 (3.61, 3.61 and 3.75 respectively);
- Pedro Resolved's NPS depends on the Resolution, Expectations and Time & Effort Pillars. Once more, the Bank is only capable on delivering an acceptable CX regarding these Pillars (level of satisfaction of 3.58, 3.68 and 3.52 respectively);
- Alberto Expectant's NPS depends on the Empathy, Integrity and Time & Effort Pillars. In this case, it is where Bank has a better NPS result (7.1 against 6.8 and 6.9 respectively), mainly driven by a good result in the most impactful pillar (3.73 in the Empathy Pillar). However, the level of satisfaction of the remaining significant Pillars is also around 3.5.

Looking at the big picture, it is clear which are the Nunwood Pillars that most impact the aggregated Bank's customer base in its CX – Empathy, Expectations, Integrity and Resolution (Appendix 22) – which makes sense considering the Personas' preferences. Even though, the

Bank has not been capable of delivering high quality activities regarding those CX's components according to customers' opinion - the four displaying around 3.5 in the satisfaction ranking (Appendix 23). As a result, the overall real NPS result of the Bank is far from excellent, being clearly below the industry average in Portugal (Appendix 24).

In fact, customers penalize immensely those who under-deliver. In this case, economic value is lost since the CX offered fails to meet expectations resulting in decreased revenue and increased costs. Indeed, economic value is only maximized when customer valorizations and experience are aligned.

This straightforward analysis enables companies to see what they are doing well and what they need to do better or start doing for it gives a clear vision in which areas of their CX offered they should be focusing on and prioritizing in order to improve overall results. As a result, this step shows once more that it is vital to master the economics of CX and shape a strategy that effectively drives ROI and creates competitive advantage through these pillars.

3.5. Next Steps

Knowing the impact of each pillar in the NPS of each persona is just the first step to reach the final objective: The Customer Experience Return on Invest (CX ROI). Therefore, to build an explicit link to value, further researches are required to study: (1) Personas' representation on the company's customer base; (2) impact of customer-based projects on the Pillars' Level of Satisfaction; (3) the impact of a variation in the overall firm's NPS on its financial performance.

Indeed, if the Bank wants to focus on increasing Persona 1's CX, this research addresses executives to focus on activities that could increase the Expectations, Resolution and Integrity Pillars' level of satisfaction such as: e-learning materials; real time closing investment positions solution; and a social investment platform. Instead of looking at Personalization, Time & Effort

and Empathy based activities such as: fiscal advisory solutions; an online contact center; or a motivational reward system. Nevertheless, to have a clear picture of the CX ROI, it is required to establish a continuous and dynamic process of customers' auscultation, sustained on Business Cases, to be able to quantify those unknown CX-related effects, and hence, reach the final goal.

4. Conclusions and Recommendations

As stated before, Customer Experience (CX) is well positioned to overtake price and product as the number one brand differentiator. As stated by Jerry Fritz, "You'll never have a product or price advantage again. They can be easily duplicated, but a strong customer service culture can't be copied". Therefore, firms' executives are shifting their focus and using the firm's resources in shaping the best CX strategy for their companies. Knowing that, this paper provides guidance on how to properly identify, for each customer, the main drivers of his customer experience satisfaction, measured through the NPS. This knowledge will allow firms to implement the optimal measures to each client, thus being more efficient and effective to achieve a better overall CX.

The 6 Pillars CX Model by KPMG Nunwood was verified within the dataset since those six variables have shown explanatory power over the NPS. Another important result are the various effects that each pillar has on the CX's satisfaction depending on the persona. In fact, each pillar' showed very distinct effects across the customer base which clearly demonstrates the contrasting behaviors and needs across different customers. This gives enormous importance to the Clustering Analysis performed in this methodology.

Furthermore, the conducted methodology allows for a critical judgment between what are the main CX Satisfaction drivers and what it is being delivered by the firm. In fact, by comparing the most impactful pillars with the respective degree of satisfaction, firms can have

a clear picture of which components are being under-delivered and, consequently, which areas of the companies' operations should be improved (Front, Middle and / or Back-Office).

Finally, the practical case conducted during this analysis validated the paper's premise that this methodology is capable of creating value to the firm. In fact, the main outputs of this methodology: Descriptive Analysis of each Persona; NPS Regressions; and Significant Variables vs Level of Satisfaction, joined together are capable of creating guidance to a sustained and straightforward line of action that allows the development of future optimal customer journeys which will ultimately increase significantly the firm's overall Customer Experience.

4.1. Limitations

During the development of the presented research, there were some limitations that this work, and therefore the research methodology and conclusions, were subject to. For developing a robust linear regression model capable of creating statistically significant outcomes, having a large number of heterogeneous observations is important. However, due to time constraints, the survey was only available for a short period of time. As a result, 242 valid answers may not be sufficient to capture accurately customers' behavior and, hence, to infer fully reliable CX results. Furthermore, a one-time case study in a single financial institution, geography and time period may give rise to issues with the external validity of the study, and thus lead to problems regarding its conclusions. Therefore, further studies in different frameworks are required to deeply analyze this topic.

Despite the Multicollinearity situation being mitigated, this issue is still present in the Model's dataset, which led to footprints on the OLS model's outcomes and the respective interpretations, previously explained in preceding sections.

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Appendix 1 – Survey Questions

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

> I-CARACTERIZAÇÃO DE CLIENTE

1/1

1. **Faixa etária** (<18; 19-25; 26-35; 36-45; 46-55; 56-65; 66-75; 76+)
2. **Sexo** (F, M)
3. **Estado Civil** (Solteiro; Casado; União de Facto; Divorciado; Viúvo)
4. **Distrito de Residência** (Distritos)
5. **Nível de escolaridade** (Inferior a Secundário; Secundário; Licenciatura; Mestrado ou superior)
6. **Atividade** (Estudante; Conta Própria; Conta de Outrem; Reformado; Desempregado)
7. **Rendimento mensal (líquido) disponível** (€) (0-800; 900-1.400; 1.500-2.999; 3.000-4.999; >5.000)
8. **Que características valoriza mais numa instituição financeira?** (selecione as 3 opções que correspondem à sua maior preferência)
 - Oferta de Produtos e Serviços
 - Apoio ao Cliente
 - Imagem e reputação
 - Proximidade dos balcões
 - Disponibilidade de canais alternativos (online, telemóvel, ...)
 - Preço / custo dos produtos e serviços (comissões, taxas adicionais, ...)
 - Agilidade do processo de transação (rapidez na burocracia e na realização de operações de compra e venda)
 - Antecipação das minhas necessidades
9. **Há quanto tempo é cliente do Bankinter?** (<1 ano; Entre 1 e 5 anos; > 5 anos)
10. **Que produtos e serviços tem atualmente subscritos no Bankinter?**
 - Gestão do dia a dia (Contas, Cartões, Seguros, Home Banking, Mobile App)
 - Crédito (Habitação, Pessoal)
 - Investimento (Poupança, Fundos de Investimento, Seguros de Investimento, Modelos de Investimento, Reforma, Gestão de Carteiras, Advisory, Custódia de Títulos)

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

> II-PERFIL DE INVESTIDOR DE VALORES MOBILIÁRIOS

1/3

11. **Carteira Média de Investimentos no Bankinter** (€) (0-2.500; 2.500-5.000; 5.000-10.000; 10.000-50.000; >50.000)
12. **Carteira Média de Investimentos global** (€) (0; 1-2.500; 2.500-5.000; 5.000-10.000; 10.000-50.000; >50.000)
13. **Azardando da definição da sua estratégia de investimento mobiliário, qual a valorização que atribui a cada um dos seguintes objetivos** (numa escala de 1 a 5, onde 1 é "Não Valorizado" e 5 é "Valorização Máxima")

Objetivo	1	2	3	4	5
Maximização a curto-prazo (< 1 ano) do retorno dos meus investimentos					
Maximização a médio-prazo (entre 1 e 5 anos) do retorno dos meus investimentos					
Maximização a longo-prazo (> 5 anos) do retorno dos meus investimentos					
Diversificação do risco dos meus investimentos					

14. **Enquanto detentor de produtos e serviços de investimento, por favor indique a sua preferência relativamente à subscrição / aquisição dos seguintes instrumentos e soluções financeiras** (numa escala de 1 a 5, onde 1 é "Menor Preferência" e 5 é "Maior Preferência")

Instrumentos e Soluções	1	2	3	4	5
Fundos de Investimento Mobiliário					
Seguros de Investimento					
PPRs (Plano Poupança Reforma)					
Obliquações					
Ações					
ETF's (Exchange Traded Funds)					
Opções e Derivados					
Gestão de Carteiras					

Source: KPMG Customer Bank Survey

Appendix 1 – Survey Questions (Continuation)

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

>II-PERFIL DE INVESTIDOR DE VALORES MOBILIÁRIOS

2/3

15. Atualmente, como se encontra distribuída a sua Carteira de investimento global?

Instrumentos e Soluções	0	0% - 20%	20% - 40%	40% - 60%	60% - 80%	> 80%
Fundo de Investimento Mobiliário						
Seguros de Investimento						
PPFs (Plano Poupança Reforma)						
Opções						
Ações						
ETF e (Exchange Traded Fund)						
Opções e Derivados						
Gestão de Carteira						

16. Qual o nível de satisfação que associa a cada fase de aquisição / gestão de produtos de investimento mobiliário na sua relação com o Bankinter? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

	1. Procura de informação / esclarecimento de questões comerciais	2. Formalização contrato / Entrega documentação	4. Decisão / Monitorização da estratégia investimento	5. Pagamento comissões / Recolhimento dividendos	6. Pedido / receção informação sobre posição	7. Subscrição / renovação de produtos	8. Esclarecimento de dúvidas / reclamações	9. Alterações contratuais	10. Cancelamento
1-5									

17. Qual o canal que utiliza preferencialmente para as diferentes fases de aquisição / utilização dos produtos de investimento? (numa escala de 1 a 5, onde 1 é "Menor Preferência" e 5 é "Maior Preferência")

Fase	E-mail	Portal / Home Banking	Mobile App	Balcão	Contact Center
1. Procura de informação					
2. Esclarecimento de questões comerciais					
3. Formalização contrato / Entrega documentação					
4. Decisão / Monitorização da estratégia investimento					
5. Pagamento comissões / Recolhimento dividendos					
6. Pedido / receção informação sobre posição					
7. Subscrição / renovação de produtos					
8. Esclarecimento de dúvidas / reclamações					
9. Alterações contratuais					
10. Cancelamento					

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

>II-PERFIL DE INVESTIDOR DE VALORES MOBILIÁRIOS

3/3

18. Qual a frequência com que utiliza os seguintes canais para a execução de transações / revisão da sua estratégia de investimento?

	Dariamente	Semanalmente	Mensalmente	Semestralmente	Anualmente	Nunca
E-mail						
Portal / Home Banking						
Mobile App						
Balcão						
C Center						

19. Globalmente, em que medida está satisfeito com a diversificação de produtos e soluções de investimento mobiliário do Bankinter? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

Satisfação	1	2	3	4	5

20. Que tipos de instituições utiliza na sua gestão de valores mobiliários?

- Bancos
- Corretoras Financeiras
- Plataformas de Investimento online (e.g.: DEGRD, DF Broker, ...)
- Outras: _____

21. Globalmente, em que medida está satisfeito com a diversificação de produtos e soluções de investimento mobiliário de outras instituições? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

Satisfação	1	2	3	4	5

22. Que tipo de serviços ou soluções gostaria de poder utilizar na sua gestão diária de valores mobiliários mas que atualmente não encontra disponíveis no Bankinter?

- Canais digitais alternativos
- Funcionalidades mais avançadas nos canais de utilização
- Maior oferta de produtos e soluções de investimento
- Melhor atendimento / gestão dedicada da instituição Financeira
- Melhores condições de pricing
- Processos menos complexos e burocráticos
- Outro: _____

23. Como avalia a possibilidade de recomendar o Bankinter enquanto Banco de Investimento mobiliário a amigos e familiares? (numa escala de 1 a 10, onde 1 é "Nenhuma" e 10 é "Muito Elevada")

Recomendação	1	2	3	4	5	6	7	8	9	10

Source: KPMG Customer Bank Survey

Appendix 1 – Survey Questions (Continuation)

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

> III- EXPERIÊNCIA DE CLIENTE

1/2

24. Tendo como base a sua relação com o Bankinter, responda, por favor, às seguintes questões.

a) Teve conhecimento de alguma campanha comercial lançada pelo Bankinter nos últimos 12 meses? (Sim; Não)

b) Nos últimos 12 meses, qual a influência de uma campanha comercial lançada pelo Bankinter para a sua decisão de aquisição de novos produtos de investimento mobiliário? (numa escala de 1 a 5, onde 1 é "Sem influência" e 5 é "Total influência")

Influência	Não Satisfeito	1	2	3	4	5

c) Nos últimos 12 meses, em média, quanto tempo despendeu em cada visita ao site do Bankinter (não considerar Home Banking)?

(< 1 minuto; Entre 1 e 5 minutos; Entre 5 e 15 minutos; Entre 15 e 20 minutos; Mais de 20 minutos)

Como avalia a qualidade e usabilidade da informação disponível no site do Bankinter? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

	1	2	3	4	5
Qualidade					
Usabilidade					

d) Nos últimos 12 meses, qual o seu nível de satisfação com o Bankinter relativamente ao tempo de resposta e com a qualidade técnica da mesma às questões por si colocadas relativas a valores mobiliários? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

Satisfação	1	2	3	4	5
Tempo					
Qualidade Técnica					

e) Nos últimos 12 meses, qual o número de soluções de investimento imobiliário que subscreveu tendo como base uma oferta apresentada proativamente pelo Bankinter (ao balcão, pelo seu gestor, via contacto de Contact Center, ...)? (0; Entre 1 e 5; > 5)

f) Qual a importância que dá aos serviços de Assessoria e Research na sua tomada de decisão de investimento em valores mobiliários? (numa escala de 1 a 5, onde 1 é "Nada importante" e 5 é "Extremamente importante")

Importância	1	2	3	4	5

g) Nos últimos 12 meses, como classifica a sua satisfação com o Bankinter em processos de subscrição / aquisição de produtos ou serviços de valores mobiliários? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

Satisfação	Não Satisfeito	1	2	3	4	5

COMO SERVI-LOS MELHOR?

PARTICULARES > CLIENTES ATUAIS DE VALORES MOBILIÁRIOS

> III- EXPERIÊNCIA DE CLIENTE

2/2

24. Tendo como base a sua relação com o Bankinter, responda, por favor, às seguintes questões (cont.).

h) Nos últimos 12 meses, quantas vezes contactou telefonicamente o Bankinter de forma proativa no âmbito da gestão / reforço da sua carteira de investimento mobiliário? (0; Entre 1 e 5 vezes; > 5 vezes)

i) Nos últimos 12 meses, no âmbito da gestão / reforço da sua carteira de valores mobiliários, foi contactado telefonicamente pelo Bankinter? (Sim; Não)
Se "Sim", em que medida está satisfeito com a regularidade dos contactos? (numa escala de 1 a 5, onde 1 é "Nada Satisfeito" e 5 é "Totalmente Satisfeito")

Satisfação	1	2	3	4	5

j) Nos próximos 12 meses, como avalia a possibilidade de renovar a subscrição de algum produto, serviço ou solução de investimento mobiliário do Bankinter? (numa escala de 1 a 5, onde 1 é "Nenhuma" e 5 é "Muito Elevada")

Renovação	1	2	3	4	5

k) Nos últimos 12 meses, qual a contribuição de determinados produtos e serviços de valores mobiliários para a subscrição de novas soluções de investimento? (numa escala de 1 a 5, onde 1 é "Muito Reduzida" e 5 é "Muito Elevada")

Contribuição	1	2	3	4	5

l) Como avalia a possibilidade de cancelar a subscrição dos produtos e serviços de valores mobiliários que detém atualmente no Bankinter durante os próximos 12 meses? (numa escala de 1 a 5, onde 1 é "Nenhuma" e 5 é "Muito Elevada")

CANCELAMENTO	1	2	3	4	5

m) Como avalia a qualidade da correspondência comercial disponibilizada pelo Bankinter nos últimos 12 meses? (numa escala de 1 a 5, onde 1 é "Nenhuma" e 5 é "Muito Elevada")

Qualidade	1	2	3	4	5

Source: KPMG Customer Bank Survey

Appendix 2 – Survey Description

The questionnaire was composed by three sections:

- Customer Characterization – personal, mainly social-demographic questions (such as age; gender; district of residence; monthly income)
- Customer Investment Profile – questions about investment preferences, habits and needs (such as risk-return profile; portfolio's size and composition; preferable channels and platforms for various activities; possible improvements regarding available products and services)
- Customer Experience – questions about the interaction between the Bank and the customer to identify gain and pain points in the customer experience (such as levels of satisfaction with the different stages; influence of campaigns)

Appendix 3 – Types of Answers

The questionnaire was composed by three types of answers:

- Binary (only two options)
 - Example:
Q: Gender?
A: Male or Female.
- Closed qualitative answers (pre-defined list of options)
 - Example (1) – Choose only one option:
Q: What is your daily usage of social media?
A: Several times a day; Once a day; Few times a week; Once a week; Rarely.
 - Example (2) – Choose one or more options:
Q: What type of products / services have you subscribed to in the Bank?
A: Day-to-day account management; Credit; Investment.
- Closed quantitative answers (pre-defined scale).
 - Example:
Q: On average, what is your monthly net income?
A: 0-899; 900-1.499; 1.500-2.999; 3.000-4.999; >5.000).

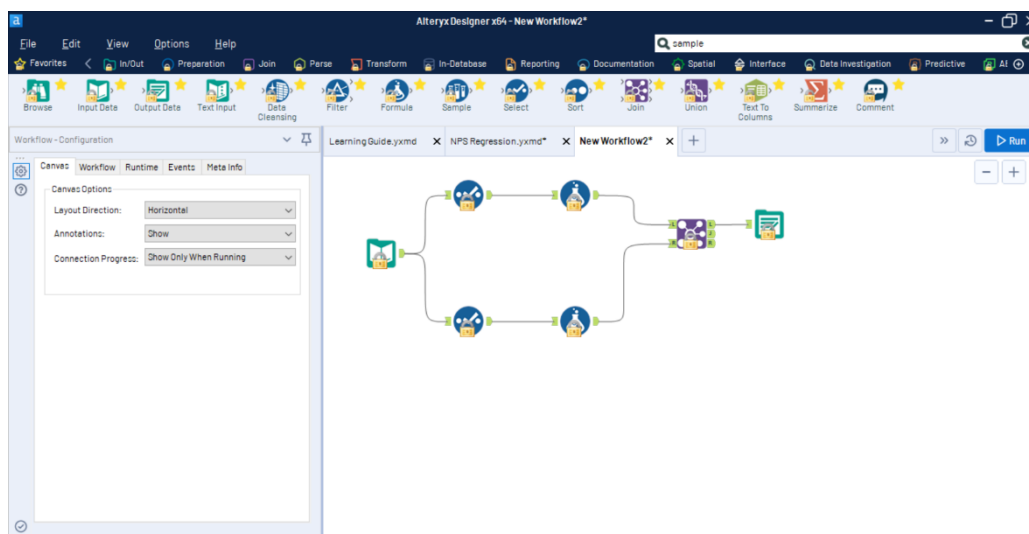
Appendix 4 – Data Blending Methodology

Generally, data can take one of two different types, Categorical or Numerical. On the one hand, Categorical data includes nominal (in the form of text) and ordinal (discrete values representing ordered units without mathematical significance, such as ranks) data. On the other hand, Numerical data can be either discrete or continuous.

Three procedures were put in place to transform data:

- Binary answers were assigned a dummy variable. For example, if it was a male customer it was assigned the value 1, and 0 otherwise;
- Answers composed of ranges were assigned their range midpoint. For example, ages between 19-25 were assigned the value 22;
- Finally, for questions with more than 2 possible nominal answers, it was assigned for each possible answer a dummy variable. That is, if the customer has chosen a given answer option, the new variable for that option takes the value of 1, and 0 otherwise, and so on for each possible answer option.

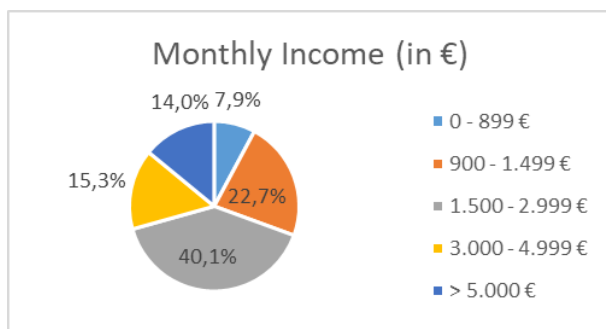
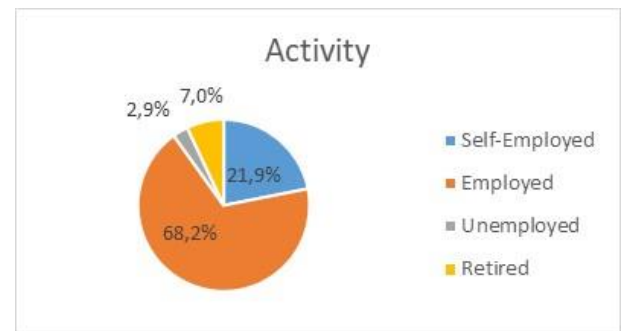
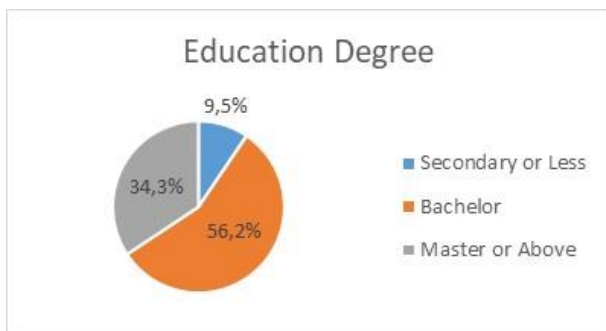
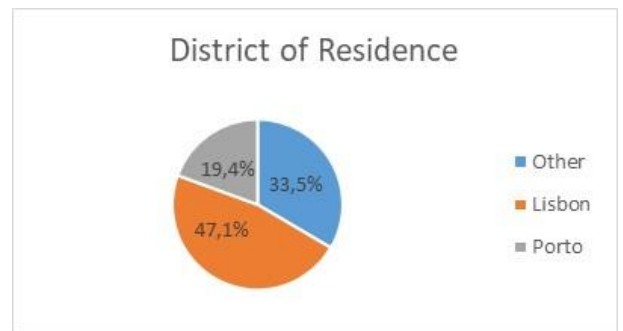
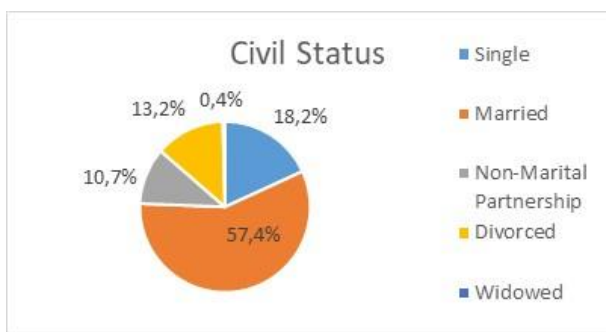
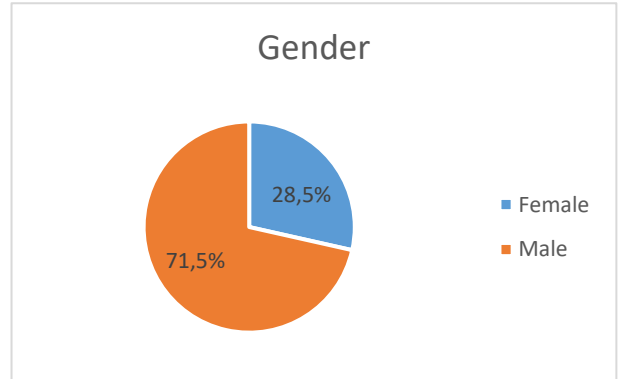
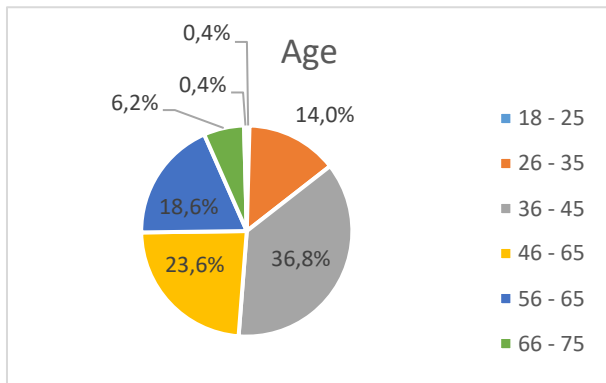
Appendix 5 – Alteryx’s Flow Data Blending



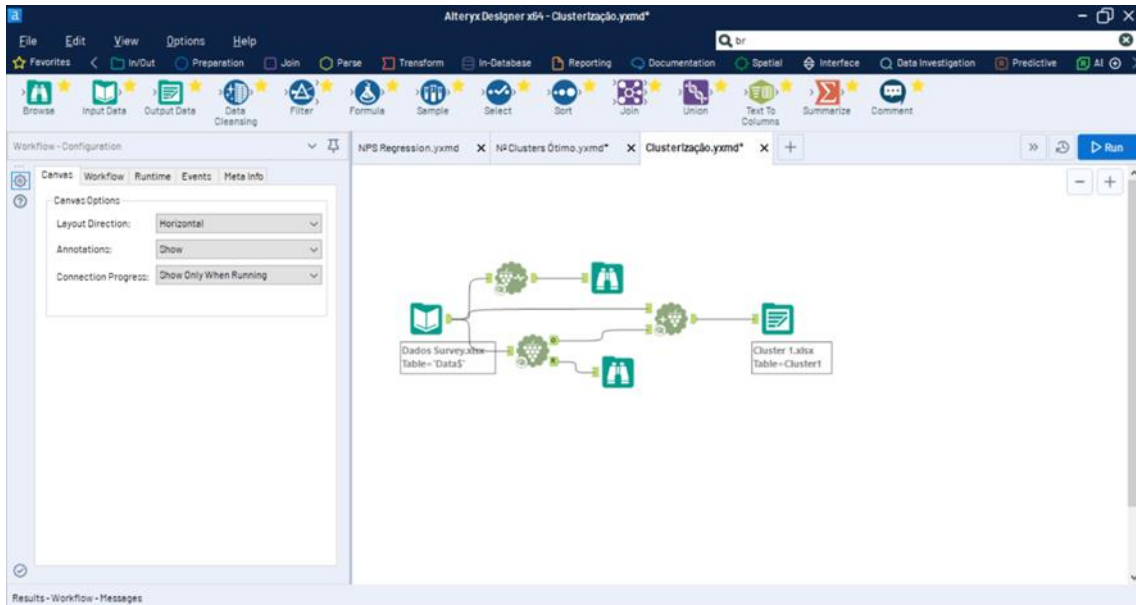
Source: Alteryx

Tools Used: (1) Select; (2) Formula; (3) Join.

Appendix 6 – Sample’s Socio-Demographic Analysis



Appendix 7 – Alteryx’s Flow Clustering Analysis



Source: Alteryx

Tools Used: (1) K-Centroids Diagnostics Tool; (2) K-Centroids Cluster Analysis; (3) Append Cluster Tool.

Appendix 8 – Nunwood Pillars

The 6 fundamental components of an ideal experience are the following:

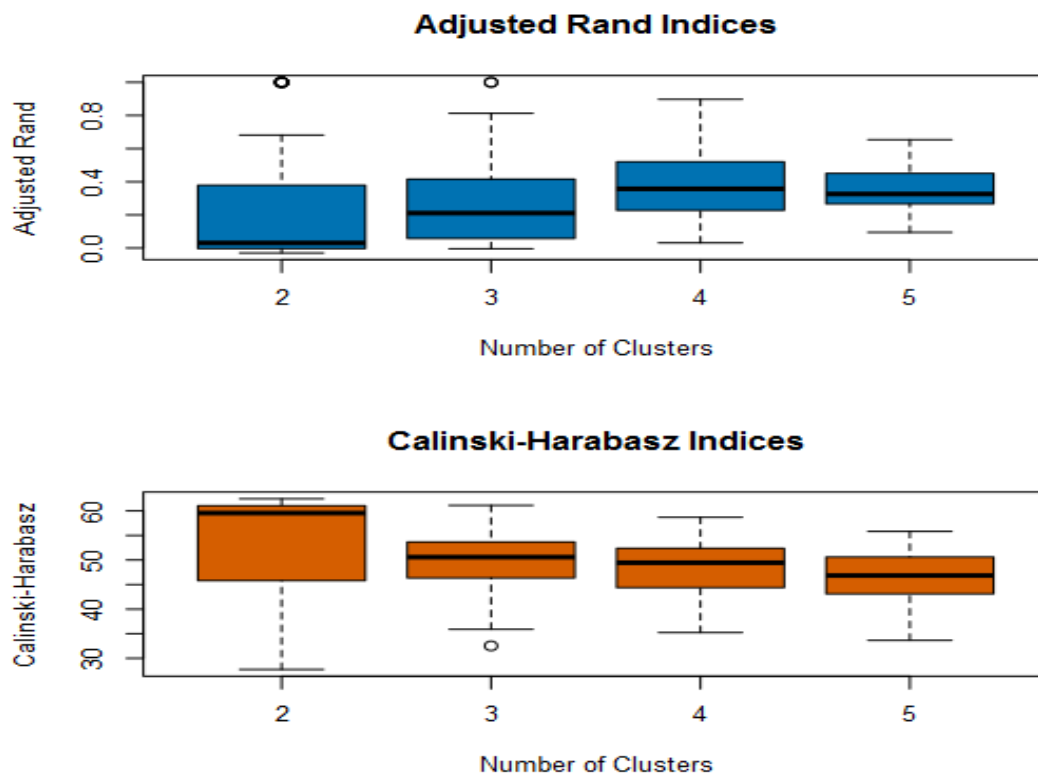
- **Personalization:** Using individualized attention to drive emotional connection. Customers value a firm that demonstrates it is capable of understanding the customer's specific needs and adapt the experience accordingly.
- **Integrity:** Being trustworthy and engendering trust. A consistent organizational behavior that demonstrates trustworthiness and delivers on its promises is key from the consumer's perspective.
- **Expectations:** Managing, meeting and exceeding customer expectations. It is intrinsic for humans to build expectations about how their needs will be met using as comparison terms the best brands they have encountered.
- **Time and Effort:** Minimizing customer effort and creating frictionless processes. Customers are time-poor and constantly look for effort minimization. As a result, removing unnecessary obstacles, inefficiencies and bureaucracy to enable the customer to achieve his objectives quickly and easily is vital for a good experience.
- **Resolution:** Turning a poor experience into a great one. Even with the best processes and procedures, things will go wrong. Thus, customer recovery is highly important; a sincere apology and acting with urgency are two crucial elements of a successful resolution.
- **Empathy:** Achieving an understanding about the customer's circumstances to drive deep rapport. Customers demand that the firm emotionally perceives them in order to establish a strong relationship.

Appendix 9 – Pillars' Proxy Variables

Due to the difficulty of quantifying the Nunwood Pillars, it was used the following proxy variables to more easily collect near customers their respective values:

- Expectations – diversification and quality of products and services;
- Empathy – quality and usefulness of Customer Support tools and processes;
- Integrity – Bank's image and reputation;
- Time & Effort – Complexity of the bureaucracy and speed of the processes;
- Resolution – quality and performance of the processes and features;
- Personalization – capacity to anticipate needs and to customize products and services.

Appendix 10 – Alteryx K-Centroids Diagnostics Tool Output (Nº Optimal of Clusters)



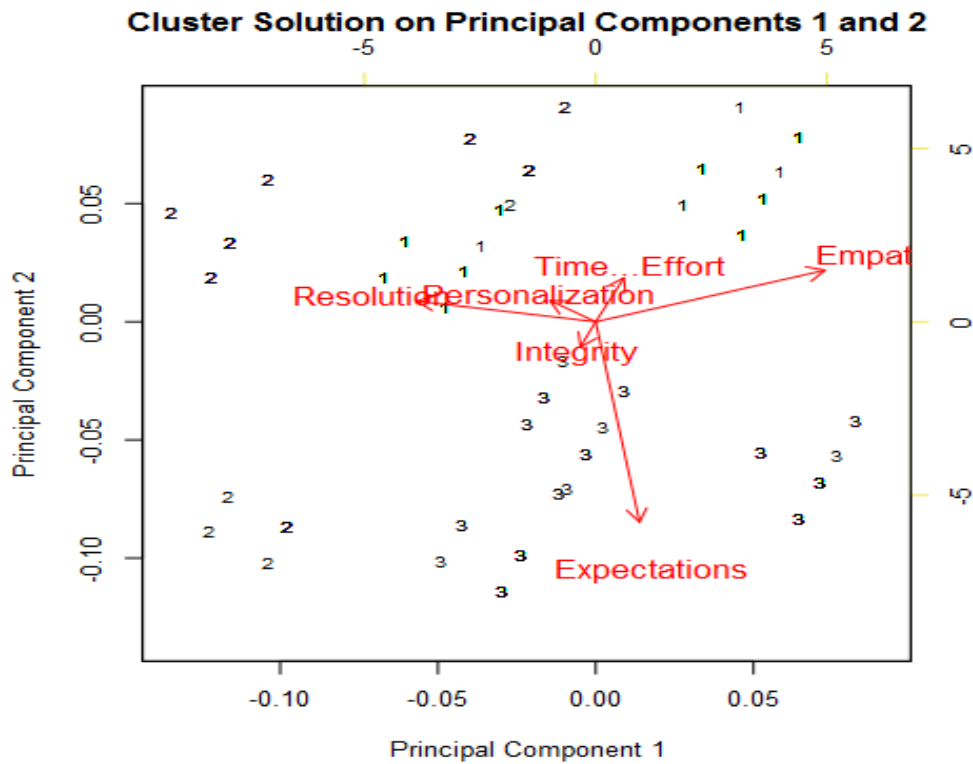
Source: Alteryx

The Alteryx K-Centroids Diagnostics Tool evaluates the number optimal of clusters, given the clustering variables chosen. This tool's output shows two indices, the Adjusted Rand and the Calinski-Harabasz that check for the clustering analysis quality of each number of clusters.

The Adjusted Rand Index (ARI) measures the level of agreement between two partitions: one given by the clustering process and the other defined by external criteria. This rank index lies between zero and one. The Calinski-Harabasz evaluates the clustering analysis quality grounded on the average between and within the cluster sum of squares.

For both indices, the greater their average value and the lower the interquartile range, the best the number of clusters fit the data. As it can be checked in the Alteryx Tool Output, the optimal number of clusters for the dataset was 3 and 4. However, since the number of observations was limited, which would implied cluster with only 20 observations, the clustering analysis was performed with 3 clusters.

Appendix 11 - Alteryx K-Centroids Cluster Analysis Tool Output (Customer Allocation)



Cluster	Size	Ave Distance	Max Distance	Separation
1	99	0,86	1,28	1,10
2	60	0,82	1,49	1,14
3	83	0,81	1,67	1,02

Cluster	Expectations	Empathy	Integrity	Time & Effort	Resolution	Personalization
1	0,00	0,72	0,30	0,25	0,00	0,24
2	0,22	0,38	0,13	0,08	1	0,17
3	1	0,72	0,25	0,14	0,16	0,16

Source: Alteryx

Appendix 12 – Persona’s Descriptive Analysis

Socio-Demographic Analysis	José Empathetic	Pedro Resolved	Alberto Expectant
Age	41 to 61	30 to 50	45 to 70
Gender	70%	70%	70%
Civil Status	2,3	2,2	2,2
Residence District	0,8	0,9	0,9
Education Degree	2,2	2,4	2,2
Activity	1,9	2,0	2,0
Monthly Income	2624,30€	2939,50€	2921,80€

Customer Investment Profile	José Empathetic	Pedro Resolved	Alberto Expectant
Most Valued Pillars	Empathy	Resolution	Expectations
	Expectations	Expectations	Empathy
	Time & Effort	Empathy	Personalization
Number of Customer Years	4,2	3,7	4,3
Type of Products and Services subscribed:			
Day to Day Account Management	90%	80%	90%
Credit	50%	60%	40%
Investment Portfolio	50%	50%	60%
Average Investment Portfolio Value	90606€	98208€	100211€
Bank's Portfolio Weight	55%	55%	70%
Investment Horizon & Risk	Medium Term & Low Risk	Short / Medium Term & Low Risk	Long Term & Very Low Risk
Preferable Communication Channels	Counters & Portal / Home Banking	Portal / Home Banking & E-mail	Portal / Home Banking & Counters
Overall Level of Satisfaction regarding the diversification of the Investment Department's P&S?	3,3	3,4	3,3
Overall Level of Satisfaction regarding the diversification of other Institutions' P&S?	3,0	3,1	3,1
Preferable types of Financial Institutions to manage the investment portfolio	Banks	Banks	Banks
	Financial Brokers	-	-
Which Pillars should be improved?	Empathy	Resolution	Expectations
	Expectations	Expectations	Resolution
	Time & Effort	Empathy	Personalization

Appendix 12 – Persona’s Descriptive Analysis (Continuation)

Customer Experience	José Empathetic	Pedro Resolved	Alberto Expectant
Campaigns Knowledge	80%	80%	70%
Influence of a campaign in the investment decision	0,80	1,30	1,00
Average time spent of the Bank's website	5,7	6,4	5,9
Quality level of the available investment information on the website	3,8	3,9	3,6
Level of utility of the available investment information on the website	3,6	3,6	3,5
Influence of Bank's proposals in the investment decision	0,9	1,1	1,4
Overall Level of Satisfaction regarding the process of subscribing new Investment P&S	1,6	2,1	2,5
How many times have you been contacted proactively by the Bank	1,4	1,5	1,8
Probability of subscribing new Bank's P&S	3,0	3,0	3,2
Influence of other Bank's P&S in the investment decision	1,9	2,3	2,6
Probability of removing all investment P&S from the Bank	1,8	2,0	2,3
Quality level of the commercial information sent by e-mail	3,2	3,1	3,1

Appendix 13 – Sample Multicollinearity

VCV Matrix	Personalization	Resolution	Time & Effort	Expectations	Empathy	Integrity	NPS
Personalization	1,00	0,79	0,70	0,76	0,78	0,77	0,72
Resolution	0,79	1,00	0,77	0,80	0,78	0,77	0,72
Time & Effort	0,70	0,77	1,00	0,74	0,72	0,73	0,68
Expectations	0,76	0,80	0,74	1,00	0,80	0,77	0,73
Empathy	0,78	0,78	0,72	0,80	1,00	0,74	0,74
Integrity	0,77	0,77	0,73	0,77	0,74	1,00	0,70
NPS	0,72	0,72	0,68	0,73	0,74	0,70	1,00

Source: Alteryx

Appendix 14 – Extreme NPS Values Multicollinearity

VCV Matrix	Personalization	Resolution	Time & Effort	Expectations	Empathy	Integrity	NPS
Personalization	1,00	0,95	0,90	0,97	0,96	0,92	0,89
Resolution	0,95	1,00	0,92	0,96	0,93	0,93	0,84
Time & Effort	0,90	0,92	1,00	0,91	0,89	0,88	0,83
Expectations	0,97	0,96	0,91	1,00	0,98	0,94	0,91
Empathy	0,96	0,93	0,89	0,98	1,00	0,91	0,94
Integrity	0,92	0,93	0,88	0,94	0,91	1,00	0,83
NPS	0,89	0,84	0,83	0,91	0,94	0,83	1,00

Source: Alteryx

Appendix 15 – Sub-Sample Multicollinearity

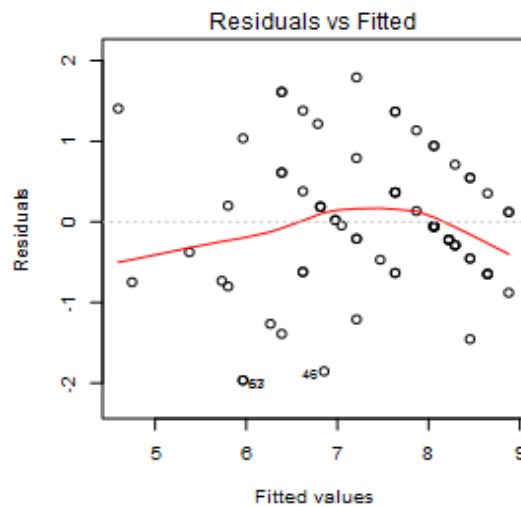
VCV Matrix	Personalization	Resolution	Time & Effort	Expectations	Empathy	Integrity	NPS
Personalization	1,00	0,64	0,53	0,55	0,60	0,59	0,49
Resolution	0,64	1,00	0,64	0,63	0,61	0,61	0,62
Time & Effort	0,53	0,64	1,00	0,53	0,52	0,61	0,53
Expectations	0,55	0,63	0,53	1,00	0,62	0,60	0,56
Empathy	0,60	0,61	0,52	0,62	1,00	0,56	0,56
Integrity	0,59	0,61	0,61	0,60	0,56	1,00	0,57
NPS	0,49	0,62	0,53	0,56	0,56	0,57	1,00

Source: Alteryx

Appendix 16 – Gauss-Markov Assumptions

There are 7 classical Gauss-Markov Assumptions for OLS regressions. While the first 6 are mandatory to produce the best estimates, the 7^o assumption, analysts often evaluate it to check the reliability of confidence and prediction intervals generated by statistical hypothesis testing.

Assumption 1: The regression model is linear in the coefficients and the error term



Source: Alteryx OLS Model’ Output

This plot shows equally spread residuals around a horizontal line without distinct patterns. This means that the model’s explanatory variables do not have significant non-linear relationships with the dependent variable that are not being captured by the model. As a result, one can conclude that this model does not violate assumption number 1.

Assumption 2: The error term has a population mean of zero

	Estimate	Std, Error	t value	Pr(> t)
(Intercept)	3,27	0,65	5,05	0,000
Time&Effort	0,35	0,19	1,86	0,068
Empathy	0,39	0,19	2,02	0,047
Integrity	0,36	0,19	1,88	0,065

Source: Alteryx OLS Model’ Output

For the OLS model being unbiased, the average value of the error term must equal zero. However, when it is performing the model with the intercept, the linear regression model forces the mean of the residuals to equal zero. As a result, one can conclude that this model does not violate assumption number 2.

Assumption 3: All independent variables are uncorrelated with the error term (No Endogeneity)

The error term should be completely unpredictable in order to have exogeneity in the OLS Model. Therefore, when there is a correlation between an independent variable with the error term, it is a clear violation of this assumption. Endogeneity can occur in possible case: (1) because there is simultaneity between the independent and dependent variables; (2) omitted variable bias; (3) or measurement error in the independent variables.

Simultaneity – occurs when the dependent variable has significant explanatory power over the independent variables. As explained before, the collected sample showed that when the NPS takes extreme values, the independent variables values are affected by it. However, in the other NPS Values (between 4 and 9) which comprises a vast majority that behavior did not show up.

Omitted variable bias – occurs when a regression model does not take into account relevant predictor variables. As a result, the model is forced to over / under estimate the coefficients of the independent variables present in the model to compensate omitted variable's explanatory effects. However, KPMG Nunwood's Model has been tested for several years and until now, it has remained robust. Therefore, there is no evidence to consider it otherwise;

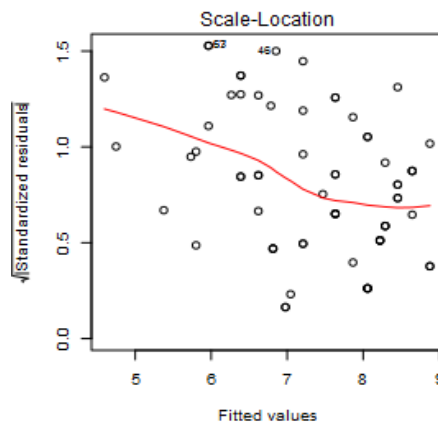
Measurement error – occurs when the dependent variable is not quantified accurately. In this case, this is not a problem because the NPS comes, by definition, from the recommendation question.

To sum up, one can conclude that this model does not violate assumption number 3.

Assumption 4: Observations of the error term are uncorrelated with each other (No Autocorrelation)

One observation of the error term should not predict the next observation. However, this problem is not significant in cross-sectional data. As a result, one can conclude that this model does not violate assumption number 4.

Assumption 5 – The error term has a constant variance (no heteroskedasticity)



Source: Alteryx OLS Model’ Output

This plot shows residuals that are spread randomly along ranges of predictors. This means that residuals have an equal variance (homoscedasticity) and, hence, their variance is consistent for all observations. As a result, one can conclude that this model doesn’t violate assumption 5.

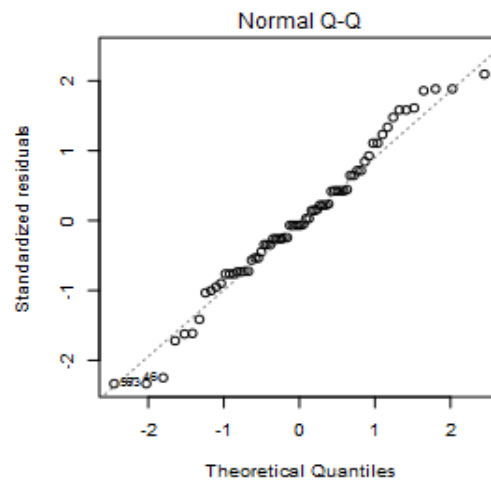
Assumption 6 – No independent variable is a perfect linear function of other explanatory variables (No Multicollinearity)

VCV Matrix	Personalization	Resolution	Time & Effort	Expectations	Empathy	Integrity	NPS
Personalization	1,00	0,64	0,53	0,55	0,60	0,59	0,49
Resolution	0,64	1,00	0,64	0,63	0,61	0,61	0,62
Time & Effort	0,53	0,64	1,00	0,53	0,52	0,61	0,53
Expectations	0,55	0,63	0,53	1,00	0,62	0,60	0,56
Empathy	0,60	0,61	0,52	0,62	1,00	0,56	0,56
Integrity	0,59	0,61	0,61	0,60	0,56	1,00	0,57
NPS	0,49	0,62	0,53	0,56	0,56	0,57	1,00

Source: Alteryx OLS Model’ Output

This Variance-Covariance Matrix shows above than recommended relationships between the predictor variables. However, OLS regression can still work with this marginal multicollinearity problem. As a result, one can conclude that, despite this issue, this model does not complete violate assumption number 5 and, therefore, model's estimates can still be considered valid and precise.

Assumption 7 – The error term is normally distributed

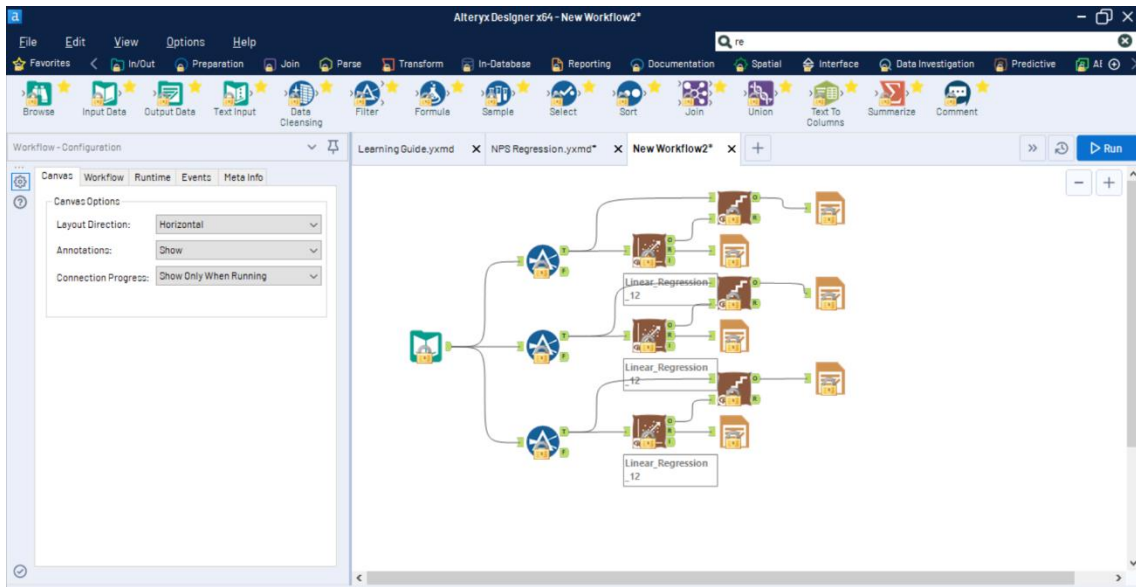


Source: Alteryx OLS Model' Output

This plot shows that residuals are following a straight line. This means that they are normally distributed and, hence, the model generated robust p-values for the coefficient estimates and overall tests of significance. As a result, one can conclude that this model does not violate assumption number 7.

To sum up, all OLS Regression Models performed appeared to not violate any of Gauss-Markov assumptions. This means that there is not much relevant stuff left in the data. Subsequently, it is possible to conclude that all Models' estimates are trustworthy and robust.

Appendix 17 – Alteryx’s Flow NPS Regression



Source: Alteryx

Tools Used: (1) Filter; (2) Linear Regression; (3) Stepwise.

Appendix 18 – OLS Regression Model Outputs: José Empathetic

Residual standard error: 0.87048 on 66 degrees of freedom				
Multiple R-squared: 0.5912, Adjusted R-Squared: 0.5726				
F-statistic: 31.82 on 3 and 66 degrees of freedom (DF), p-value 7.689e-13				
	Estimate	Std, Error	t value	Pr(> t)
(Intercept)	2,65	0,55	4,83	1e-05
Resolution	0,59	0,15	3,87	0,000
Expectations	0,23	0,17	1,41	0,164
Integrity	0,42	0,14	3,09	0,003

Source: Alteryx

Appendix 19 – OLS Regression Model Outputs: Pedro Resolved

Residual standard error: 1.0643 on 42 degrees of freedom				
Multiple R-squared: 0.5537, Adjusted R-Squared: 0.5219				
F-statistic: 17.37 on 3 and 42 degrees of freedom (DF), p-value 1.745e-07				
	Estimate	Std, Error	t value	Pr(> t)
(Intercept)	1,67	0,79	2,10	0,042
Resolution	0,60	0,25	2,36	0,023
Time&Effort	0,40	0,26	1,52	0,137
Expectations	0,49	0,21	2,31	0,026

Source: Alteryx

Appendix 20 – OLS Regression Model Outputs: Alberto Expectant

Residual standard error: 1.0459 on 61 degrees of freedom				
Multiple R-squared: 0.4072, Adjusted R-Squared: 0.378				
F-statistic: 13.97 on 3 and 61 degrees of freedom (DF), p-value 4.885e-07				
	Estimate	Std, Error	t value	Pr(> t)
(Intercept)	3,27	0,65	5,05	0,000
Time&Effort	0,35	0,19	1,86	0,068
Empathy	0,39	0,19	2,02	0,047
Integrity	0,36	0,19	1,88	0,065

Source: Alteryx

Appendix 21 – Significant Variables vs Level of Satisfaction

Persona 1		
Pillars	Coefficients	Satisfaction
Resolution	0,59	3,61
Expectations	0,23	3,75
Integrity	0,42	3,61

Persona 2		
Pillars	Coefficients	Satisfaction
Resolution	0,60	3,58
Time & Effort	0,40	3,52
Expectations	0,49	3,68

Persona 3		
Pillars	Coefficients	Satisfaction
Time & Effort	0,35	3,53
Empathy	0,39	3,73
Integrity	0,36	3,65

Appendix 22 – OLS Regression Model Outputs: Bank

Residual standard error: 1.0038 on 176 degrees of freedom				
Multiple R-squared: 0.4825, Adjusted R-Squared: 0.4707				
F-statistic: 41.02 on 4 and 176 degrees of freedom (DF), p-value < 2.2e-16				
	Estimate	Std, Error	t value	Pr(> t)
(Intercept)	2,59	0,39	6,70	0,000
Resolution,Pillar	0,46	0,12	3,92	0,000
Expectations,Pillar	0,22	0,13	1,71	0,089
Empathy,Pillar	0,25	0,11	2,26	0,025
Integrity,Pillar	0,32	0,11	2,80	0,006

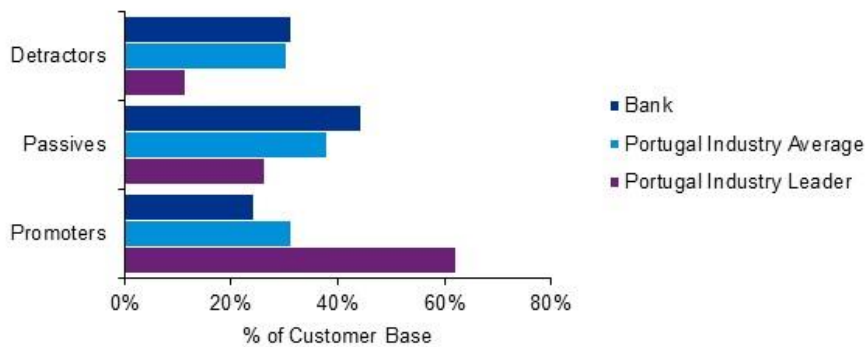
Source: Alteryx

Appendix 23 – Bank’s CX Level of Satisfaction



Appendix 24 – KPMG Customer Experience Excellence Report 2018 Portugal

Bank vs Portugal Industry Leader vs Portugues Industry Average



Bank vs Portugal Industry Leader vs Portugues Industry Average

