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CUSTOMER RELATIONSHIP MANAGEMENT FIELD LAB AT PCDIGA:

CUSTOMER SEGMENTION

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Abstract

The purpose of this study is to suggest a segmentation model that best suits PCDIGA's resources and its customer database. To achieve this, an extensive analysis was carried out about the company, which was combined with literature research regarding the subjects of customer relationship management and segmentation. As a result, a segmentation was proposed, which was tested through an online survey that reached over 4 000 individuals. Recommendations were drawn for the company to develop the resulting 7 segments according to their potential and value produced.

Keywords: CRM, Segmentation, RFM, Customer Loyalty.

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Chapter 1 – Introduction

PCDIGA is a Portuguese retail company for specialists in computer equipment and technology. It was founded in Leiria, in 2003, being considered, at the beginning, an "underdog" of the industry, that was already dominated by important players as Worten. Nevertheless, the company was able to become one of the top choices of the online community at that time by specializing in the gaming area and, attracting users like hardware reviewers and overclockers. Its competitive prices, that are usually lower than the competition, along with its specialized service, are the main competitive advantages of PCDIGA. The company is also characterized by the speed in the orders delivery, its products' high quality, diversity, and specificity, and the diverse partnerships it has established with leading manufacturers. Furthermore, the company was distinguished with the award of "Melhor Loja de Tecnologia", given by the Portuguese magazine PC Guia, in the years of 2015, 2016, and 2017. The company has been experiencing high growth, which can be translated in the years of 2015 to 2016, where the operating revenue grew from 21 218 598€ to 29 505 323€, and the net income from 286 148€ to 583 936€. Plus, it has been also expanding, increasing the number of employees from 38 to 57 (from 2015 to 2016) and having now a total of five open stores in Portugal: in Leiria, Lisboa (Parque das Naçõesa and Benfica), Porto and Braga. This growth can be explained not only through the growth of the electronic retailers' market, but also due to the positive word-of-mouth marketing produced from satisfied PCDIGA customers, and the strong online community around the company (for more detail see Group Report). Regarding the competition, the market of computer equipment and technology retail can be divided between the specialized ones, where PCDIGA fits, and the big retailers. On one hand, examples of specialized stores, besides PCDIGA, are MHR, Globaldata, and PcComponentes, while on the other hand, stores like Worten, Fnac, Rádio Popular, and MediaMarkt characterize the big retailers.

PCDIGA consider themselves customer-centric but recognize that this is not reflected across the whole business and, therefore, this Field Lab was created to address this issue and lay the foundations for a future CRM department, in the B2C market. Different workstreams were setup with this goal in mind (see slide

9 of the Group Report), and one of them was customer segmentation. PCDIGA differentiated customers only according to fiscal status: business versus end-users, much do to not knowing enough about their customer base. However, sustained financial growth nowadays requires optimizing customer relationships, addressing the right customers with the right offer at the right time. And this can only be achieved by understanding the different customer needs and behaviours – hence the importance of customer segmentation.

Chapter 2 – Literature Review

2.1 The economic arguments for customer centricity

Even though CRM is a business process difficult to define, Meyer and Kolbe (2005) see it as "a technologically driven, or at least technologically supported, customer-focused concept that enables organizations to tailor specific products and services to individual customers. CRM is about building long-term and profitable one-to-one relationships with customers" (Baran, Galka, & Strunk, 2008). CRM can be either operational, analytical or strategic (Buttle, 2015). The first form focuses on the efficiency of customer-facing processes such as selling, marketing and customer service; the analytical form regards the processes used by the company to transform customer-related data into actionable insights; and the strategic CRM emphasis in the development of a customer-centric business culture to win and keep customers by creating and delivering value better than the competition. Customer centricity is the key for a successful CRM implementation. As it is explained by Shah (2006), when customer relationship management gained momentum, all companies were excited with the idea of creating an ongoing dialogue with customers, bringing benefits for both parts, and started to invest millions in CRM software packages, database marketing initiatives, and IT infra-structure. Still, most of them failed, because they were lacking the requisite customer centricity to achieve these benefits (Shah, Rust, Parasuraman, Staelin, & Day, 2006). Furthermore, a study conducted by the Gartner Group, concluded that many organizations are not successful with their CRM strategy, showing a global failure rate of 65% (Nelson, 2001). To be customer-centric, a company must be focused on its customers as opposed to its products. In other words, these types

of companies are not absorbed with product sales, profitability per product or product development, instead, they pay attention to their clients' needs and satisfaction as a mean to achieve a long-lasting relationship with them (Shah et al., 2006). According to Peppers and Rogers, customer-centric enterprises must incorporate five business principles to their customer strategy. The first principal is the financial custodianship of the customer base, meaning that the company should act on its customer base as being their primary asset, as this is the information that will allow the company to differentiate its customers to become more productive and decrease costs; the second principal regards production, logistics and service delivery, to tailor the offerings to the customers' needs and preferences; the third one focuses on ensuring an ongoing individual dialogue with the consumer through the right marketing communications, customer service and interactions; the fourth defends the rearrangement of sales distribution and channel management to reduce standardization and increase customization; and the final, that concerns organizational management strategy, transfers the responsibility of nurturing customers relations to managers (Peppers & Rogers, 2011). If the company succeeds to implement a CRM system in a customer-centric company, it will be able to: (1) integrate and consolidate customer information across the whole company, for a homogeneous treatment of the customer; (2) assist the consumer with relevant information, matching their needs with the most appropriate product; (3) ensure that appropriate responses occur at the proper time; (4) personalize offers; (5) automatically and manually generate new sales opportunities; (6) be flexible to possible changes in customer information; (7) produce a more accurate follow-up; (8) manage all business processes; (9) present an accurate explanation of all sales and marketing activities to the top management and, (10) react quickly to market changes (Kumar & Reinartz, 2006).

There are many advantages related with being a customer-centric organization. First, besides considering customer satisfaction, it also bears in mind factors such as customer perceived value, commitment, loyalty programs, level of customer involvement and switching costs, as the first variable by itself is not enough to produce customer loyalty (Kumar, Pozza, & Ganesh, 2013). Secondly, by building long-term relationships with customers, companies are able to provide them unique value (Zineldin, 2006).

Consequently, as these relations are the result of a complex set of activities, they become hard to imitate, leading to a long lasting competitive advantage (Kumar & Reinartz, 2006). Thirdly, by generating customer loyalty, it will be also increasing profits. As shown in a research conducted by a fellow of *Bain and Company* "as a customer relationship with a company lengthens, profits rise. Companies can boost profits by 100 percent by retaining just 5 percent more of their customers" (Reichheld, 1997). The reasons behind such numbers lie on the customers' willingness to make more purchases over time from a company that is already familiar to them, as opposed to switching to a competitor. Consequently, operating costs with that specific customer will decrease. Furthermore, returning customers are more likely to pay premium prices and mention the company to others, generating worth-of-mouth marketing (Reichheld, 2001). As it would be extremely expensive to develop such a customized relation with every customer in heterogeneous markets, it becomes effective to use market segmentation and identify the segments with the highest potential for the company (Reichheld, 2001).

2.2 Segmentation

Smith (1956) was the first to introduce segmentation as a business strategy, viewing the usual heterogeneous market, with divergent demand, being composed by smaller homogeneous markets (Dolnicar, Grün, & Leisch, 2018; Smith, 1956). Gupta (2014) follows this line of thought, affirming that "firms do not create segments; they only uncover them". After uncovering market subgroups composed by consumers with similar needs and preferences, firms are not only able to tailor their products and services to better serve each segment, as they can also learn about potential opportunities from segments with unmet needs (Gupta, 2014). In fact, because different customers represent different costs and profits to the company, they are best addressed with different treatments (Kolarovszki, Tengler, & Majeráková, 2016). Moreover, segmentation fosters a reflection for companies to understand where they are better at the moment, compared to competitors, and where they want to be in the future (Dolnicar et al., 2018). To be certain of the usefulness of the segments found, they must be: (1) mensurable in terms of size, purchasing power and other characteristics that may be relevant to the company; (2) substantially large

and profitable for the organization; (3) accessible, for the companies to reach them and serve them; (4) differentiable, by responding differently from other segments to marketing campaigns; and (5) actionable, as the firm should be able to create the products and marketing programs necessary to attract the segment (Kotler & Keller, 2016). Gupta (2014) approaches an additional criterion, sustaining that segments should be stable enough to allow the profitability of any program or marketing campaign developed. Choosing the right segmentation variables becomes a challenge for companies. Normally, these variables can be divided into two major groups: customer related variables, which comprise demographics or the customer's lifestyle, and product specific variables, that are related with purchasing behaviour, transaction records among others (Wang, 2010). With so many possible combinations of variables, the market can be segmented by many different methods. The RFM model, proposed by Hughes (1994) is one of them, basing itself on past purchase behaviour, as this is usually a good indicator of future behaviour (Sarvari, Ustundag, & Takci, 2016). This model groups customers based on three dimensions: recency, to know when was the last purchase made by a customer; frequency, meaning the number of purchases made by a customer in a given period of time; and monetary value, that represents the amount of money spent by a customer in the defined period of time (Christy, Umamakeswari, Priyatharsini, & Neyaa, 2018). The logic behind these criteria lie on the fact that customers who have high values of recency (short interval between two purchases) and frequency are likely to buy from the company again shortly, and the higher the score of the monetary value, the higher the probability of making a purchase from the company again (Sarvari et al., 2016). There are different views regarding the weight of each variable, while ones defend that all three dimensions have equal importance (Hughes, 1994), the majority sees recency as the most significant. Still, according to prior findings, Lumsden (2008) defends that RFM values have different weights depending on the industry and nature of the products. This method carries several advantages that justify its success across many companies. The model is cost effective and easily quantifies customer behaviour, storing the information electronically, which is of easy access, facilitating the role of decision-makers, plus it is useful to predict response and capability to boost profits in the short term. Moreover, the small number

of variables that constitute the model make it easy to use and, these are gathered via an internal database which comprises information regarding the customer's transaction history, not being necessary to combine demographic information and, as the final advantage, this method is very effective in identifying the most valuable customers for the company (Wei, Lin, & Wu, 2010). Nonetheless, RFM carries some disadvantages as well. First, the focus to identify the most valuable customers in the company, ignores future prospects and can even lead to the abandonment of the other customers. This subject is particularly emphasized by Miglautsch (2002) that discusses the weight of the 1-1-1 customers (have not bought recently, do not buy often and do not spend a high amount of money) to the business, as these sometimes account for 50% of the revenues of a mature businesses (Miglautsch, 2002). Secondly, the limited number of variables used may not differentiate customers as much as desired and this model does not double count (Bult & Wansbeek, 1995). To overcome some of these disadvantages, it is recommended to combine the RFM model with some customer related variables (Sarvari et al., 2016; Miglautsch, 2002).

2.3 Segmentation in retail

Looking closer at segmentation in retail, Griva et al. (2018), chose to look at which products are bought together by consumers, as opposed to their complete purchase history, in order to have better insights regarding the customer's shopping behaviour per single visit, and being able to understand the intentions per visit – either on a physical or online store. Thus, these authors propose to generate segments based on the product categories they have purchased before and after, attribute the shopping intention behind each visit, to the different segments (Griva, Bardaki, Pramatari, & Papakiriakopoulos, 2018). On the other hand, Carmichael et al. (2018), defends a segmentation based on the variables market exploration and promotion seeking behaviours, for the retail industry. These authors believe that segmentation based solely on customers' promotion proneness and brand selection, real historic purchase data or even customer data retrieved from interviews, fail on analysing the trade-off between market exploration and promotion seeking behaviours. In their study, four segments arose: the bargaining hunters, with high prevalence of promotion and medium value of information, representing customers that often look for promotions; the

opportunistic explorers, that are enthusiastic about trying new brands, using promotions as a motivation and have medium prevalence of promotion and high value of information; the promotion averse exploiters, which are the customers that only buy brands they are already familiarized with and have low prevalence of promotion and medium value of information; and finally the opportunistic exploiters, with medium prevalence of promotion and low value of information, that also prefer to purchase brands they already know, but take advantage of promotions (Carmichael, Chen, & Luo, 2018).

Even though the latest method could be a potential fit for a retailer as PCDIGA, due to their promotions frequency, it would probably be also more challenging, as it requires a lot of knowledge about it customers, and a deep analysis to produce actionable segments. At the same time, if the company chooses to use customer related variables or product specific variables, it is still necessary to decide on which factors to focus, considering their availability and relevance. These reflections led to the resulting research question that this stream aims to answer: "*What is the segmentation of PCDIGA customers that best serves the company's strategic goals?*". Consequently, to reach the best answer, 5 hypotheses were formulated, which are as follows: (H1) *Segmentation is important for PCDIGA because of the company's current situation and strategy;* (H2) *The key variables distinguishing customers are recency, frequency and monetary value spent at PCDIGA;* (H3) *Different customers exhibit different brand perceptions concerning PCDIGA;* (H4) *Different customers exhibit different behaviours in the website;* (H5) *Different customers show distinct potential for future profitability.*

Chapter 3 – Methodology

This Work Project follows a critical realism philosophy approach, as PCDIGA, being an already established business who looks to expand itself, has already complex processes and structures, facing a constantly changing market with fierce competition. Therefore, it becomes important to study different levels of the company to reach more solid conclusions (Saunders, Lewis, & Thornhill, 2009). The chosen approach makes it a mixed methods research, within an inductive research approach, once both qualitative and quantitative data were used in the research design.

The first step was to do a company diagnosis, which meant getting a deeper look on the market where PCDIGA operates, understanding if it has been growing or not, possible opportunities or threats, who are the main players in this market and how PCDIGA has been performing in relation to its competitors. Following this intention, the team started to gather qualitative secondary data trough journals and websites, to develop a SWOT analysis alongside with a 5 C's framework (Dolan, 2014). These frameworks had as prime objective to study the internal and external environment of the company, to understand the sources of its competitive advantage, and where the company is currently standing versus where it wants to be in the future (G. Gupta & Mishra, 2016). After this, to get a deeper vision of the company and its strategy, to start a CRM diagnosis and to possibly identify some gaps with the secondary data previously gathered, primary data was collected in a qualitative way, through business interviews at PCDIGA. These were semi-structured interviews, with a predefined set of questions (see Appendix 9 of the Group Report) but allowing for the conversation to flow naturally, exploring the proposed themes more deeply or even uncovering non-expected themes (Saunders et al., 2009). Plus, they were conducted to different individuals in the company, depending on their role and the questions to be clarified, targeting the CEO, the products, orders and store managers and the after-sales, IT, HR and marketing areas. All the interviews were conducted in Portuguese, to extract more valuable information from comfortable interviewees, being recorded and translated to English after. Plus, a mystery shopping was also conducted, to access the quality of the customer service and the customer experience at the store, that can be described as participant observation, as it had no specific guide and the team took the role of a client without revealing its identity, having a complete participant role (Saunders et al., 2009). Moreover, still considering the primary data, quantitative data was collected through observations, where the main objective was to understand who is the typical PCDIGA client, and the interactions between them and the commercials, from a customer-centric perspective. These were structured observations in store, in events and in the call-centre, with minimal interaction with the ones being observed, and a predefined guide. Still under the CRM diagnosis, and using the primary data collected, a customer touching map was developed to study the areas where

the customer has contact with the company, in order to identify possible challenges that the customer may be facing (Peppers & Rogers, 2011).

Subsequently, for this stream work in specific, the challenge is to not only identify the end users of PCDIGA, but to group them into different segments, making possible for the company to develop marketing programs to the different segments, leading to an increased customer satisfaction and, consequently, more profits. To achieve that, the customer database of the company was analysed for a period of two years. First, all the data concerning the business to business market was separated, along with individuals who were enrolled in the website but had not made any purchases yet, to constitute the segments B2B and leads, respectively. After, the RFM framework was applied (see Figure 1 in the Appendices), to find the most valuable clients for the company. Nevertheless, as this method proved not to be the best for this specific situation, as the segments did not have significant differences between them, it was decided to separate the customers based on three other variables: number of purchases, number of items bought in each purchase and value spent. In the end, it was possible to uncover a total of eight segments (see Figure 2 in the Appendices), plus the B2B one and the leads' segment.

Finally, an online survey (see Appendix 7 of the Group Report) was launched at the beginning of November to collect quantitative data, with the objective of studying the company's brand image, brand awareness, its positioning and clients, and also to get deeper insights or confirming results about the segments previously created. Two surveys were launched: one spread by the team on social networks and another spread by the company through their website, social networks and newsletters. The latest had to suffer some changes in order not to promote its competitors, which affected the results regarding brand recognition and the all answers that included specialized retailers. Plus, to be consistent with the database analysed, all respondents had to be living in Portugal for at least five years and bought an electronic equipment less than two years ago. The total of valid responses, including the survey spread by the team, was of 4 025 – a high number because respondents entered a lottery to win a smartphone (courtesy of the company) –, and the average time to complete the questionnaire was approximately ten minutes. The

questionnaire was composed by predetermined answers, starting with a section of filter questions and followed by a consumer behaviour section, while the remaining questions aimed at assessing the experience of customers and non-customers of PCDIGA, compare PCDIGA with other retailers and obtain demographic data. The type of questions included were non-comparative scaling and competitive scaling questions. Concerning the first sort, there were continuous rating scales, that allowed to measure customer satisfaction and loyalty, semantic differential scales, to understand how PCDIGA's communication was being perceived, and Likert rating scales to understand the company's brand image. As for the second class of questions, there were constant sum scaling questions to better understand what variables customers value the most when buying electronic goods.

Chapter 4 – Analysis and Discussion

Based on the extensive quantitative and qualitative research made, along with the literature review, five hypotheses were formulated, with the aim to better understand PCDIGA's customers, how should the company address them and to give an answer to the research problem "*What is the segmentation of PCDIGA customers that best serves the company's strategic goals?*".

H1: *Segmentation is important for PCDIGA because of the company's current situation and strategy:*

According to the business interviews, PCDIGA's CEO aims to keep growing the company and believes that the biggest driver of such growth is customer satisfaction. Nevertheless, there is no segmentation being made and there are divergent opinions inside the company, regarding who currently is their "typical client". As seen in the literature review, to keep having satisfied customers while a company is growing or is already of a big dimension, it is necessary to value customers individually, and be able to address their specific needs. Moreover, this individual treatment needs to be consistent throughout the different touch points between the company and the costumer, demanding for an easy availability of customer information for all the members of the company. All of these is only possible through customer segmentation, currently inexistent at the company, which leads to the non-rejection of *H1*.

H2: *The key variables distinguishing customers are recency, frequency and monetary value spent at PCDIGA:* The RFM model arose as an adequate approach because, as shown in the literature review, is simple to implement and use, it is cost effective, helps to predict customer behaviour and, the variables needed to compose it are of easy access, making it a great method for the company to start with. Furthermore, giving the maturity and experience of the company dealing with CRM tools, it was decided to start with an easy segmentation model, based on business rules, instead of using more complex models based on statistical algorithms. After applying the RFM model, eight segments were found (see Figure 1 in the Appendices), however, these segments proved not to have significant differences between each other, demonstrating that this model is not the best fit for this database and, therefore, rejecting *H2*, which led to the choice of another segmentation model based on the number of purchases, number of items bought in each purchase and value spent .

H3: *Different customers exhibit different brand perceptions concerning PCDIGA:* To test this hypothesis, the results of the online survey were used to compare the segments found with the latest segmentation model – more specifically the ones who scored the highest and the lowest levels of the three variables (see Figure 2 in the Appendices). Some ANOVA analysis ($\alpha = 0,05$) were conducted to these segments, regarding the following questions: (1) "*On a scale from 1 to 10, how much are you satisfied with your experience at PCDIGA (being 10 very satisfied)?*"; (2) "*On a scale from 1 to 10, how much would you recommend PCDIGA to a friend or family?*"; (3) "*How likely is for you to repurchase from PCDIGA, within the next 12 months?*"; (4) "*To which extent do you agree with the following: PCDIGA is a premium brand VS low-cost brand.*" (See Figures 3 to 7 in the Appendices). After this analysis, it became clear that these segments presented very different answers, except for the last question regarding the perception of PCDIGA being a low-cost brand (See Figure 7 in the Appendices), with the *High; Heavy; Expensive* segment demonstrating higher values of satisfaction in general. This segment also mentioned big retailers only 39,39% of the time, in the brand recall question, against the 56,08% of the *Low; Light;*

Cheap segment, indicating that the first segment may be more informed and the latest more mainstream. Therefore, it can be said that *H3* is not rejected.

H4: *Different customers exhibit different behaviours in the website:* Regarding *H4*, the results of the segments *The Best Friend* (which include the *High; Heavy; Expensive* and the *High; Heavy; Cheap)* and *The Acquaintance* were compared in the same way, following the previous reasoning (they are very different from each other). The variables in question were the number of sessions, the time spent on the website and the bounce rate. Following the results of the Anovas performed (See Figures 8 to 10 in the Appendices), these segments do not behave differently in any of these variables, leading to the rejection of *H4*.

H5: *Different customers show distinct potential for future profitability:* Finally, to test *H5*, the reasoning followed was the same as for *H3* and *H4*. This time, the variable tested was the CLV of the individuals in these two segments, where the result of the Anova conducted (See Figure 11 in the Appendices) demonstrates that *H5* should not be rejected.

To conclude, giving the rejection of *H2* and the non-rejection of the other hypotheses, with the exception of *H4* – that may be explained by the low number of individuals analysed online –, I believe it is possible to say that the segmentation model that best serves the company's strategic goals, is based on the following variables: number of purchases, number of items bought in each purchase and value spent, because it allows the creation of sufficiently different and actionable segments, in terms of purchase behaviour, brand perception and future value for the company.

Chapter 5 – Conclusions and Recommendations

5.1 Managerial Implications

After analysing the B2C market, it is recommended for the company to treat the *Leads* (which have not made any transactions yet) as a separate segment and, group the first two segments of the eight that were uncovered by the segmentation model, as these showed to be very similar with each other. Therefore, this would lead to the following seven segments:

Table 1 - Segments' Description

EN	PT	Description
The Best Friend	*O Melhor Amigo*	The one that represents the most valuable relationship, since they frequently make transactions and buy multiple products at one time.
The Flatmate	*O Colega de Casa*	Close relationship but not as strong as that of the Melhor Amigo, reflecting a lower number of products purchased per transaction.
The Carpool Friend	*O Amigo das Boleias*	Friends who see each other frequently, but with the intention of asking for a ride to save; although they go to PCDIGA many times, they buy few products at an affordable price.
The Distant Friend	*O Amigo Distante*	It resembles *Melhor Amigo*, however, due to the circumstances of life they not see each other as much as they liked.
The Opportunist	*O Opportunista*	Customers looking for the best deals, coming to PCDIGA in search of the best prices.
The Impulsive	*O Impulsivo*	Those who do not not buy frequently but buy expensive products.
The Acquaintance	*O Conhecido*	The typical friend of social networks, which we only know by sight. This type of customer is gaining trust with PCDIGA, acting cautiously.

These segments represent different profiles of behaviour and profitability potential and should, therefore, be treated differently, having in mind their value for the company as well as their characteristics (purchase behaviour, demographics). Considering their value for the company, the strategies recommended by the group had the Get, Keep and Grow framework (approached during the CRM course) in mind (see slide 60 of the Group Report). It was concluded during the Customer Lifetime Value stream, that the *Best Friend* and the *Flatmate* segments prove to be the most valuable to the company (see slide 56 of the Group Report), thus they should be targeted with strategies that focus in "Keeping". At the same time, the Leads segment should be targeted with the with strategies that focus in "Getting" and the remaining segments with strategies that focus in "Growing". Finally, the cross and up selling recommendations, as well as the personalized newsletters which are described in more detail in the other streams, should consider the purchase behaviour and demographics of each segment to be more appealing to them and increase sales.

5.2 Limitations and Further Research

The first limitation is related with the questionnaires, that were distributed by the team through social media, and by the company either through their website, their social media pages or by email. As such, many students were reached in the first case and, in the second, almost only people that knew PCDIGA, which may have skewed the sample. Moreover, there was a typo in the questions regarding which

equipment were bought and how much money was spent at PCDIGA in the last 2 years, which may have impacted the conclusions for each segment. Finally, it is advisable the company continues to use the model developed by the team and, expands its knowledge about each segment. Moreover, if possible, it would make sense to understand which segments are most loyal to promotions and which are not, to target them differently.

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Chapter 7 – Appendices
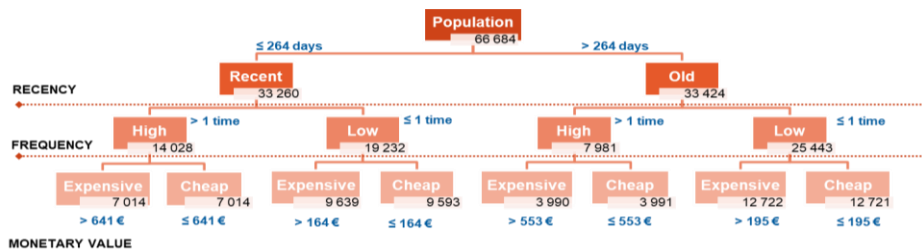
Figure 1 - Segmentation Tree (RFM)

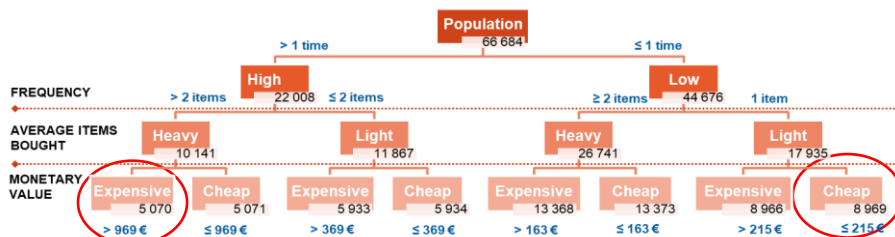*Figure 2 - Segmentation Tree (Frequency; Average Items Bought; Monetary value)*

Figure 3 - ANOVA Analysis. " On a scale from 1 to 10, how much are you satisfied with your experience at PCDIGA (being 10 very satisfied)?". α = 0,05

SUMMARY

Groups	Count	Sum	Average	Variance
High; Heavy; Expensive	181	1708	9,436464	0,702885
Low; Light; Cheap	173	1577	9,115607	1,149348

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	9,106361	1	9,106361	9,887008	0,001806	3,868012
Within Groups	324,2072	352	0,921043			
Total	333,3136	353				

Figure 4 - ANOVA Analysis. " On a scale from 1 to 10, how much would you recommend PCDIGA to a friend or family?". α = 0,05

SUMMARY

Groups	Count	Sum	Average	Variance
High; Heavy; Expensive	181	1719	9,497238	0,684715
Low; Light; Cheap	173	1522	8,797688	1,418134

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	43,28711	1	43,28711	41,49892	3,88E-10	3,868012
Within Groups	367,1677	352	1,04309			
Total	410,4548	353				

Figure 5 - ANOVA Analysis. "How likely is for you to repurchase from PCDIGA, within the next 12 months?". α = 0,05

SUMMARY

Groups	Count	Sum	Average	Variance
High; Heavy; Expensive	181	1742	9,624309	0,724739
Low; Light; Cheap	173	1415	8,179191	3,333983

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	184,7262	1	184,7262	92,37645	1,42E-19	3,868012
Within Groups	703,8981	352	1,999711			
Total	888,6243	353				

Figure 6 - ANOVA Analysis. "To which extent do you agree with the following: PCDIGA is a premium brand". α = 0,05

SUMMARY

Groups	Count	Sum	Average	Variance
High; Heavy; Expensive	181	816	4,508287	0,495764
Low; Light; Cheap	173	722	4,17341	0,702312

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	9,919545	1	9,919545	16,62426	5,64E-05	3,868012
Within Groups	210,0353	352	0,596691			
Total	219,9548	353				

Figure 7 - ANOVA Analysis. "To which extent do you agree with the following: PCDIGA is a low-cost brand". α = 0,05

SUMMARY

Groups	Count	Sum	Average	Variance
High; Heavy; Expensive	181	577	3,187845	2,064518
Low; Light; Cheap	173	565	3,265896	1,69633

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0,538858	1	0,538858	0,285926	0,593181	3,868012
Within Groups	663,382	352	1,884608			
Total	663,9209	353				

Figure 8 – ANOVA Analysis: Number of Sessions on the website.

SUMMARY

Groups	Count	Sum	Average	Variance
Melhor Amigo	1590	16688	10,4956	209,2306
Conhecido	212	2695	12,71226	493,8268

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	919,1343	1	919,1343	3,788813	0,051752	3,84663
Within Groups	436664,9	1800	242,5916			
Total	437584,1	1801				

Figure 9 - ANOVA Analysis: Time spent on the website.

SUMMARY

Groups	Count	Sum	Average	Variance
Melhor Amigo	1590	1104925	694,9215	305985
Conhecido	212	145889,7	688,1591	367778,3

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8554,304	1	8554,304	0,02731	0,86876	3,84663
Within Groups	5,64E+08	1800	313228,5			
Total	5,64E+08	1801				

Figure 10 - ANOVA Analysis: Bounce Rate

SUMMARY

Groups	Count	Sum	Average	Variance
Melhor Amigo	1590	385,4947	0,24245	0,050559
Conhecido	212	53,75248	0,253549	0,043892

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0,023047	1	0,023047	0,463004	0,496311	3,84663
Within Groups	89,59993	1800	0,049778			
Total	89,62298	1801				

Figure 11 - ANOVA Analysis: CLV

SUMMARY

Groups	Count	Sum	Average	Variance
Melhor Amigo	10141	2052079	202,3547	89929,84
Conhecido	8969	56197,94	6,265797	105,0031

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1,83E+08	1	1,83E+08	3830,851	0,000000	3,841946
Within Groups	9,13E+08	19108	47772,15			
Total	1,1E+09	19109				