Improving Pricing Strategies: The *Compracá* Case

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A B S T R A C T

Compracá is a company operating in the F&G market, with seven proximity supermarkets, scattered across the most central regions of Portugal. With competition growing stronger than ever before and with customer's price perception being increasingly based on comparisons between stores. *Compracá* is facing challenges regarding its pricing policies. A competition-based methodology, that consisted in shadowing two stores' main competitor's prices and consequently proposing price adjustments to Compracá's teams, was applied. After analyzing this strategy's negative impact on revenue and profitability, it was clear that it did not contribute to achieve the objectives initially set.

To tackle these limitations, a new and improved methodology was proposed and tested; however, due to the shortage of data, its efficiency was not fully proven. Additionally, a managerial insights survey was distributed to all Compracá's teams, that highlighted that two stores' managerial policies should be urgently reviewed: the Buraca and the Camarinha stores. A price perception survey was also scheduled to take place; however, due to the team's unavailability and to the COVID-19 pandemic, finally it could not be performed. Despite these setbacks, some conclusions regarding what is causing problems within the company were identified, namely communication problems between the company's administration and the stores' teams, the low availability displayed by the teams (for example, when collecting data that would better allow to understand consumers' attitude), unfit product assortments and lack of flexibility in what concerns adopting new pricing strategies. Lastly, and after interviewing some experts in this industry, it became clear that in order to improve the proximity format's strategies, it is urgent to recognize that its purpose is not to fully compete with big-chain stores, but to provide a superior shopping experience for which customers are willing to pay a premium price.

KEYWORDS: Competition-Based Pricing, *Meu Super*, *Compracá,* Profit Margin, Consumer's Perception, Proximity Supermarket

1. Introduction

In recent years, the Portuguese Food & Groceries (F&G) retailing has become increasingly competitive.

Many factors have contributed to this phenomenon, namely the growing number of players, store formats, innovative analytical tools and fundamental shifts in consumer behavior.

This dynamic environment has turned pricing (the act of setting up a price for a product or service.(Phillips, 2002), an otherwise relatively simple decision, into a set of multi-layered decisions that smaller companies are struggling to manage. The motivation of this study relies on trying to solve a small player's pricing difficulties.

Compracá is a Portuguese company, based in Oporto, that currently owns seven proximity supermarkets under the *Meu Super* brand insignia. Meu Super is a franchising store concept, owned by SONAE.

Regarding pricing at *Compracá*, SONAE is responsible for proposing its franchisees a percentage over the product's cost (also known as the markup percentage) for each product category or sub-category. Then, while relying on their knowledge about the local market, each store manager, along with its team, is responsible for defining the final markup percentage and defining the recommended retail price (RRP).

Compracá is facing important challenges regarding its store's pricing management, especially for super sensitive price products (or elastic price products). These items do not have many differentiating characteristics and for this reason, when making a purchasing decision, the customer will first consider price and only then quality. For super sensitive price products, it is in *Compracá*'s

best interest to practice lower prices than its competitors so that *Meu Super* is perceived among consumers as a store where prices are attractive.

1.1 Objectives

This study's objectives are threefold:
1. To increase the company's profit margins;
2. To improve the customer's price perception about *Compracá*;
3. To develop a simple and practicable methodology to research competitors' prices and to adjust *Compracá*'s prices.

2. Case Study: *Compracá* and the F&G Retailing Market

Compracá is a Portuguese company which started its operation in 2014, after becoming a SONAE franchisee.

Compracá's supermarkets are geographically scattered across the districts of Lisbon, Setúbal, Santarém, Leiria, and Coimbra and have recorded close to six million euros in net sales in 2019.

2.1 *Compracá's* Stores

All *Compracá's* stores operate under the *Meu Super* brand insignia. *Meu Super* is a store concept explicitly designed for the franchise model. With the *Meu Super* stores, SONAE aims to deliver high-quality products in modern-looking and visually appealing establishments while becoming the largest franchising chain operating in Portugal.

Meu Super stores are located primarily in housing or high pedestrian traffic zones and intend to revitalize traditional Portuguese commerce (Infofranchising, 2020).

About 65% of *Compracá*'s products are supplied by SONAE. For the remaining products, each store needs to find their own

suppliers, usually in perishable categories. This autonomous supplier searching strategy enables stores to incorporate local products into their store's offer, which boots a sense of community between locals and the stores and falls into the revitalizing traditional commerce framework.

Another strategy SONAE has implemented in the Meu Super network to reinforce its customer loyalty is the Continente card (*Cartão Continente*, 2020). This card allows customers to access exclusive deals and can be used across all SONAE's supermarkets (franchise and non-franchise) and in an extensive range of SONAE owned brands, restaurants, and gas stations.

Compracá stores are not centrally managed, which means that a store's performance is deeply dependent on the knowledge its team has about local customers (and how to positively influence their price perception). In order to understand how each team is handling this task, a store performance analysis was performed. A series of key performance indicators (KPI) were selected, and the stores were ranked according to their performance in each KPI (being 1 the best score and 6 the worst).

Table 1 Stores' scores regarding their performance according to pre-determined KPIs

Store	Total
Coimbra	19
Carregado	21
Camarinha	22
Porto de Mós	25
Entroncamento	26
Buraca	34
Massamá	-

A total of 6 KPIs were considered: monthly sales volumes per m^2, monthly sales volume per employee, net sales fluctuations (between March 2019 and March 2020 and between February 2020 and March 2020) and average transaction (also between March 2019 and March 2020 and between February 2020 and March 2020).

Overall, the Buraca store is the location which shows the most signs of underperformance across a large range of KPIs.

2.2 Market Study

2.2.1 Consumer Profile Evolution
Before making a purchasing decision, consumers will usually gather information and decide based on convenience, quality, price competitiveness, or curiosity to try a new product or brand (Oliveira-Castro, 2003). They choose according to the principle of utility maximization, that is, according to the outcome that will bring them the utmost level of satisfaction (Mata, 2013).

For example, consumers' perceived value for money is relative and therefore it depends on other players' pricing decisions (Kitchen & Proctor, 2001). Moreover, store loyalty (measured by intent to continue shopping, intent to increase purchases, and intent to recommend the store to other consumers) depends on service quality and merchandise quality perception, factors which consumers also evaluate by comparing players and brands. Perceived value plays a vital role in the determination of store loyalty intention if there is a high degree of competitor attractiveness (Sirohi et al., 1998).

For less differentiated items, customers are usually less receptive to price increases, since substitute stores or brands which will provide the same degree of satisfaction at a lower price, can be easily found (Radha, 2007).

Economic context also plays a vital role in consumer's choices and preferences. During the 2010-2014 economic crisis, this hypothesis was proven when habits shifted in order to restrain consumption to the essential minimum.

In 2019, Portugal's economy was improving, as indicators such as the unemployment rate decreased from 11,1% in 2016 to 6,5% (PORDATA, 2020). Therefore, consumer preferences ought to change too. In a study published by Centromarcas (2019), Portuguese consumers were shopping more frequently for the first time in 4 years. The average price of purchased items has also been subject to a 3,2% increase when compared to the homologous period. Simultaneously, Portuguese consumers have, on average, achieved higher savings, with an increase from 126€/year in 2018 to 141€/year in 2019 (Centromarcas, 2019). Higher savings can be justified by consumers are purchasing more private labels products (supermarkets' own labels) than manufacturers' brand products. By the end of 2019, the monetary volume consumers spend on distributor's private label products had increased by 2,9% when compared to the homologous period, while the same indicator for manufacturer label products increased solely by 0,1% *(Silva in Jornal Económico,* 2019). According to Deco,(2019), Portuguese consumers' average basket is already composed of 39% of private label products.

2.2.2 The COVID-19 Effects on Consumer Preferences
The International Monetary Fund predicts that the unemployment rate, which was 6,5% last February, will increase up to 13,9% and that the Portuguese real GDP will decrease by 8%, when compared to the homologous period. It's expected that these trends will start reversing by 2021 (IMF, 2020).

While unemployment rates rising and real GDP is decreasing, disposable income (available money for consumers to spend) is tendentially decreasing, which leads to restrictions on consuming (Mata, 2013). However, fluctuations in consumerism will not affect all products equally since not all products are equally needed. Income elasticity of demand is a metric used to quantify variations on products' (or services') demand when consumer's real income fluctuates, *ceteris paribus* (Mata, 2013). With less disposable income (or lower real income) and with the need for essential products unchanged, it is expected that consumers will abstain themselves from buying high-end brands to start purchasing less expensive brands. According to income elasticity definition, in these situations, demand for inferior goods will rise while common goods demand will contract (Mata, 2013). Since the supermarket's own brands are generally less expensive, these brands' products are considered to be inferior goods. Therefore, the demand for these products is expected to rise at the expense of a decrease in manufacturer's product's demand. Besides affecting demand, the pandemic has also influenced the Portuguese consumers' preferred shopping channels. E-commerce and home delivery, especially for 50+ customer, are booming (Deloitte, 2020).

2.2.3 Dietary Regimes Shift
In recent years, the number of inhabitants who adopted a "veggie lifestyle" has skyrocketed (vegetarians, vegans and flexitarians). According to Lantern (2019), in "The Green Revolution 2019" study, about 9% (764.000 people) of the Portuguese population is currently practicing either flexitarianism, vegetarianism or veganism (Associação Vegetariana Portuguesa, 2019). The study also concludes that the primary justification for switching diets is health awareness. The steep increase of inhabitants following these regimes is naturally accompanied by an increase in demand for vegetarian, vegan, and overall healthier products. In order to

adapt, supermarkets evaluate the feasibility of carrying the products these diets require (animal protein substitutes, eggs, and dairy replacements, organic fruits and vegetables, and biological dairy products).

2.2.4 Competitive Environment
Data regarding *Compracá* and its direct competitor's market share fluctuations can be consulted in Table 2.

Table 2 Market Share Distribution among Compracá's Competitors (Source: SONAE, 2018).

Competitor	Market Share (2017)
Continente	21,9
Pingo Doce	20,8
Minipreço	4,10
Aldi	1,10

Summarily, *Continente* and *Pingo Doce* represent important threats, not only for *Compracá*, but for small companies in general. These players are backed by some of the largest enterprises in Portugal, which means they possess and enlarged capacity to invest and quickly adapt to sudden market shifts. Furthermore, *Continente* and *Pingo Doce* both operate in all store formats, with large assortments of their own brand insignias and able to constantly offer low prices and discounts. This represents a threat for smaller businesses, who are then forced to lower their profit margins to match their competitor's prices.

Minipreço and local stores can be considered less threatening players. According to (BPI SA, 2014), *Meu Super* is the chain that seized more of *Minipreço's* market share, in recent years. One of the possible justifications for this phenomenon is *Minipreço's* over usage of discount policies, as it will be further approached. Moreover, according to Alda (2009) customers generally perceived *Minipreço* as being a cheap brand but not a high-quality or trustworthy insignia.

Lastly, local minimarkets are especially threatening in small market environments and in areas where the average age of the inhabitants is higher, due to their inertia for change. In smaller areas, inhabitants are also more compelled to support local businesses than large supermarket chains.

2.2.5 Driving Forces for Competitiveness
As Porter (1997) stated, "the essence of strategy formulation is coping with competition". Therefore, to achieve resilient pricing strategies, it is critical to understand what enhances competitiveness in the F&G retailing market. The Five Forces framework is a holistic way of looking at any industry and understanding the underlying structural drivers of competition (Porter M., 2008).

Table 3 Summary of Porter's Five Force Analysis

Porter's Driving Force	Intensity
Bargaining Power of Suppliers	Intense
Bargaining Power of Buyers	Moderate
Threat of New Entries	Intense
Threat of Substitution	Intense
Overall Rivalry in the Industry	Intense

3. Literature Review
3.1 Pricing and Adjacent Concepts
Pricing is fundamental for the performance and success of each company. It depends on a variety of different factors such as the company's market vision, segmentation capabilities and how price-demand elasticity is studied and perceived by companies. In pricing, the most fundamental concept, is the concept of price-demand elasticity:

Price-demand elasticity: (colloquially mentioned as elasticity) is a microeconomic tool, which measures how the demand for a particular product (or service) fluctuates when prices vary, in a given market(Mata, 2013). This tool enables the classification of products into three categories: insensitive price products (IPP), sensitive price products (SPP) and supersensitive price products (SSP). Generally speaking, products with lower differentiating characteristics are more sensitive to demand fluctuations when prices increase due to their high substitutability

Furthermore, the fluctuation of one product's price can also influence another products' demand. Therefore, cross-price demand elasticity is also a relevant concept when designing pricing strategies.

Cross-demand price elasticity: measures how fluctuations in one item's price determine fluctuations on demand for another item (Mata, 2013). By correctly analyzing this tool, companies will be able to assess what is their customer's threshold between cross-category complementary benefits (CCC) and cross-category substitution benefits (CCS). In practical terms, it is necessary to assess what is the price point for which customers prefer to go to multiple locations to shop for different products instead of buying all items in one store only, meaning the price point at which CCS benefits surpass CCC benefits (Leeflang & Parreño-Selva, 2012)

Lastly, another concept that dictates the success on pricing strategies is price discrimination, more specifically, third degree price discrimination.

Third degree price discrimination is the act of charging different clients, different prices, for the same product, according to the client's observable characteristics (or client segment)(Fabra & Reguant, 2020)

Research conducted in several different industries has shown that, for the vast majority of cases, price discrimination is at least as profitable as non-discriminatory practices, and that it can be used as a vehicle to increase profits (Norman & Phlips, 1985). However, price discrimination can also be used as a tool to increase competitiveness.

It is reasonable to assume that in geographical areas where purchasing power is lower, customers will display an enlarged willingness to search for saving opportunities and, therefore, price discrimination is encouraged. *Compracá* managers have reported that, in some locations (for example, Buraca), customers display low purchasing power.

3.2 Types of Pricing Strategies
There are three main families of pricing strategies in this market: customer value-based pricing (or simply value-based pricing), cost-plus pricing (setting a mark-up percentage over an item's cost) and competition-based pricing (adapting prices according to competitor's prices).

One of the most widely used strategies is the EDLP strategy, a type of value-based pricing strategy where retailing facilities will market themselves as stores with low prices, or even the lowest prices, across a broad range of different products. Another commonly used pricing strategy is the use of promotions and discounts. This strategy is designated by High-Low or more

commonly Hi-Lo. These strategies are not mutually exclusive and some literature describes the EDLP strategy combined with Hi-Lo as a hybrid strategy (Pechtl, 2004). Consumers who seek each of these strategies are usually different and value different aspects. For example, Pechtl, (2004) has proven that EDLP prone consumers exhibit higher brand preference than Hi-Lo prone shoppers, thus leading to believe that EDLP shoppers are more averse to risk than Hi-Lo strategy seekers. For retailers, this means that EDLP programs should offer more higher-end brands instead of private or virtually unknown labels. Supermarkets who choose to adopt Hi-Lo strategies should do precisely the contrary (Pechtl, 2004). Also, shoppers who purchase larger quantities per store visit tend to prefer EDLP stores (Bell & Lattin, 1998).

3.2.1 Hi-Lo Strategies in the Portuguese F&G market

It is possible to identify a clear trend among players in the Portuguese market. Since 2012 the number of promotional flyers, where brands advertise their temporary discounts, have been tendentially growing (Marktest, 2014). In 2013, the absolute number of discounts was 61.652, whereas, in 2012, was roughly half of that (30.214) (Marktest, 2014). Research points out that this increase was motivated by the unstable economic period Portugal was undergoing (the 2010-2014 crisis).

This tendency persisted through the years. In 2020, until the end of March, the number of total discounts fluctuated roughly between 50.000 and 80.000. However, by March 29th, 2020 the number of published flyers by players in the F&G market decreased 7% when compared to the same period in 2019
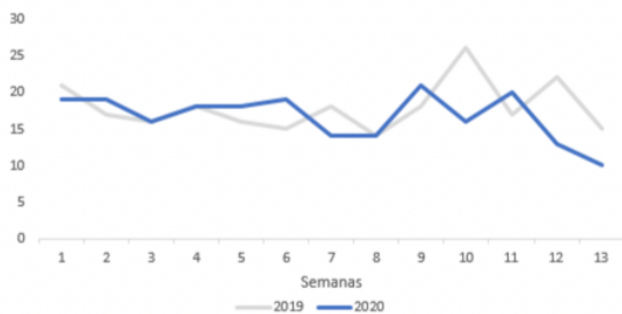

Figure 1 Total Weekly Number of Promotional Flyers published by Portuguese Supermarket Companies (Source: Marktest, 2020).

There so, in situations of unforeseen demand, such as emergency situations, it is reasonable to assume that the Hi-Lo strategy is used less intensely probably as an attempt to control the damages caused by the upstream bullwhip effects.

3.3 Competition-Based Pricing

As customers are becoming more demanding (Ferreira et al., 2011) and as their price perception is increasingly based on comparisons among players (Kitchen & Proctor, 2001), advertising data supports the hypothesis that store choice is the primarily based by utility. Companies must adapt to this reality and adopt strategies that convey to customers that theirs is the store where consumers will get the most value for their money. Furthermore, customers only actively search for products or services at lower prices if there is a price increase in their original chosen product (Cabral & Gilbukh, 2020).

In a competition-based strategy, a player, usually (but not necessarily) the market leader, will set a price, and competitors will adjust their prices, accordingly, aiming to stop the initial player from seizing their market shares. If the initial player then notices that its pricing decision was not effective due to their competitors'

reactions, he will then be encouraged to change its price again. This sequence will continue until one of the players decides to stop making its prices more attractive because it is no longer in the company's best economic interests. The lower profit margins obtained due to this technique are compensated by the increased volume of sales. The extent to which players lower their prices highly depends on the interactions between players and the level of cooperation amongst them. Interest in cooperating is naturally motivated by the financial

return each player can prospectively gain. Regardless, collaboration between players in the market also correlates to the differentiation level of a product or service: it is increasingly hard to maintain cooperation agreements in situations when the products or services are homogeneous (low level of differentiation) (Shapiro, 1989).

3.4 Key Valuable Items, Cross-Category Effects and Managerial Beliefs.

According to Oliver Heinrich and Alberto Mussa (2016), to achieve adequate strategies, stores must succeed in identifying key value categories (KVCs) and key value items (KVIs), meaning the categories, items whose prices customers tend to remember the most. By doing so, stores will be able to price those products more competitively, stimulate customer inflow and improve customer's price perception. To offset their losses on these items, companies may charge higher prices on non-key items. This way, companies are exploiting the benefits of cross-category complementary (or CCC) effects. Put differently, by properly pricing KVIs, customers will be interested in shopping at a certain store because it offers the lowest prices for the items customers tend to remember the most. Customers will then tendentially complement their purchases with non-KVI products. Customers are relatively aware that other stores may offer lower prices for non-KVI products however going to another store would be too inconvenient (Leeflang & Parreño-Selva, 2012).

Setting KVIs' prices differently from non-KVI products should be extended until the benefits of cross- category substitution (CCS) effects surpass the benefits of CCC effects (price points at which customers choose to shop at a location of multiple locations). Companies can manipulate that price point by offering certain discounts (cross-promotional effects) or even by strategically reorganizing isles within the supermarkets. The probability that a price promotion in one category affects the sales of at least one other category is 61%. Within these 61%, 39% of the times, prices promotions positively affect another product's sales (Leeflang & Parreño-Selva, 2012). To identify which products are KVIs and at what price point CCS effects are more valuable CCC effects, different companies resort to different strategies. Large corporate retailers often rely on analytics to improve their revenues and margins. In contrast, smaller store managers still rely on simple sales data, their managerial intuition and on simple heuristics developed over time, rather than subjective knowledge and facts (Rusetski, 2014).

Although store managers have valuable insight about the local markets, studies have proven that managerial misconceptions are recurrent among proximity format managers. Amidst these erroneous beliefs, the premise that impulse buying drives stores' sales and that proximity stores' customers are indifferent to the store price level are the most common (Benoit et al., 2020). Instead, researchers have concluded that urgent purchases drive proximity format stores' sales.

Regarding consumer's price perception, researchers have found that this variable depends on each store's competitive context.

When a larger format store is near a proximity store (less than 500 meters), customers tend to believe that proximity stores' prices are higher (Benoit et al., 2020).
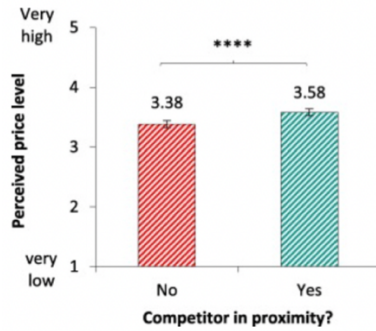

Figure 2 Competitor's Distance Influence on Customer Price Perception. (Source: Benoit et al., 2020).

4. Methodology

In this chapter the methodology to obtain the goals presented in section 1 will be presented and justified. This includes discussing the chosen model to approach the *Compracá* case study, the data gathering procedure and all the assumptions that were adopted.

Figure 3 Methodology Overview

4.1 Managerial Insights Survey
Since pricing at *Compracá* is not a completely centralized decision, it is of upmost importance to evaluate how this task is being managed. To do so, a series of questions were developed, approved by the company, and then presented to all of *Compracá's* teams. The questions are:

1 What drives customer purchases?
2 How does your store price its products?
3 How often does your store research its competitor's prices?
4 How often does your store ensure that some specific products' prices are not damaging the entire category margin?
5 How do you ensure a specific product's margin does not damage the entire category margin? Please specify for which category.

These questions were specifically designed to evaluate three elements inherent to management that directly impact effectiveness: knowledge, proactivity and coherence.

4.2 Choosing a Strategy
Compracá requested a particular methodology to achieve this dissertation's goals. This strategy is based on shadowing its closest competitor's prices, for a selected number of items and adjusting *Compracá's* prices accordingly.

4.3 Choosing Stores

Initially, and due to its geographic proximity to Lisbon, the Massamá and the Buraca stores were chosen as pilot stores. This proximity would allow frequent visits and close contact with *Compracá* collaborators. However, due to the COVID 19 pandemic, this approach had to be reviewed since it was no longer viable.

After discussing this thematic with *Compracá*, it was collectively decided that these stores were still a good sample for the study. The Buraca store was chosen due to its overall underperformance across a diverse range of KPIs and the Massamá store was chosen due its demonstrated ability to adapt quickly and deal with situations of unforeseen demand (such as the COVID-19 pandemic).

4.3.1 Identifying competitors
This approach begins with the identification of the store's main competitors. The information was provided by *Compracá* and both stores have *Minipreço* as a primary competitor.

4.3.2 Choosing each store's SSP, SPP and IPP
After a brief clarification of the differences between SSPs, SPPs and IPPs to the store managers, the teams were asked to compile a list containing several items from each category. These were the products the stores consider to be the most important. The list provided by the Buraca store follows:

4.3.3 Data gathering and treatment
The Massamá team agreed to cooperate and collect the necessary data. However, and after two attempts, the team never proceeded to do so. The team transmitted that their unavailability to collaborate was due to their shortage of staff. Due to time constraints, this store was not included in the study.
The Buraca store proceeded to collect prices for one week; however, when the store manager went on vacation (after the first week of data collection), the staff members did not continue the work. In sum, the data that was made available for improving *Compracá's* pricing strategies is:

- Monthly sales records, divided by product and by store;
- Prices and quantities sold, from table 29, 30 and 31 (Appendix B), during one work week (from October 19th 2020 to October 25th 2020).

4.3.4 Adjusting Prices
Compracá seeks to practice lower prices than its competitors for SSPs (98% of their price), the same price as its competitors for SPPs and to maximize its profit for IPPs and suggested a methodology that incorporates these requisites.
The following approach fits into this paper's framework and involves building a decision tool (a table), in which the products' costs, markups and competitors prices are presented. This way, it is possible to have comprehensive understanding of the stores' pricing problems and about what are the best pricing decisions.

4.3.5 Customer's price perception
Improving a customer's price perception about the stores, in this context, translates into instilling the idea that *Compracá i*s a low-prices store. To accomplish this goal, it is necessary to access what are the consumer's ideal price points. To determine these, the Van Westendorp Price Sensitivity Model (henceforth vW) will be applied.
In essence, the vW is a heuristic method of collecting data on acceptable price points, followed by a simple graphical procedure

for finding an item's optimal price. It comprises a series of four questions:

1. At what price would you find the item so pricey that you would not consider purchasing it? (Too expensive)
2. At what price would you consider the item so inexpensive that you doubt its quality? (Too cheap)
3. At what price would you find the product expensive but would give some thought into buying it? (Expensive).
4. At what price would you consider the item to be a bargain? (Cheap/good value).

To validate the accuracy of this data, a fifth question will be added:

5. What price do you believe is fair?

All collected answers would have to be analyzed, to determine their validity. For example, if a customer for any product provides an answer in which he considers the price to question 2 to be higher than to question 1, then that answer is not coherent, and should be excluded.

After compiling a significative number of valid answers, the final result should resemble the following graph:
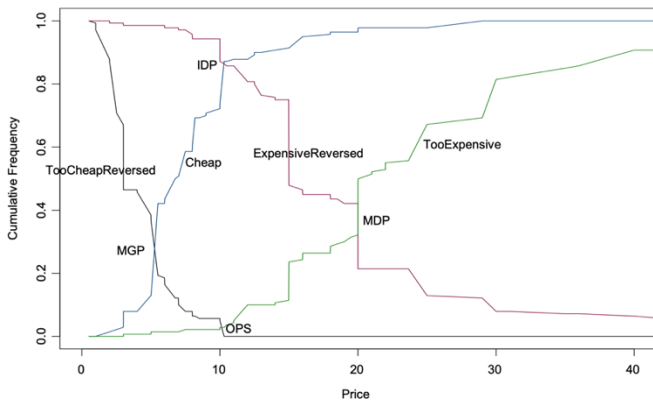

Figure 4 Graphic obtained when plotting the answers of the vW method, with the "Too Cheap" and "Cheap" curves reversed (Source: (Lipovetsky, 2006)

The interception of the "Too Cheap Reversed" and "Cheap Reversed" curves is called the Marginal Cheapness Point (MGP) and the interception between the "Extensive Reversed" and "Too expensive Reversed" curves is called the Marginal Expensiveness Point (MDP). For this data treatment, the range of prices between the MGP and the MDP indicates the prices most customers believe are fair.

The MGP is lower bound of an acceptable price range (lowest price the consumer is willing to pay without mistrusting the product's quality) while the MDP is the upper bound of the range (maximum price the customer is willing to pay for that product). Furthermore, this analysis also provides the OPS, which is the optimal price point for the item in question, and the IDP (or indifference point) that is the price point in which there is the same number of answers for the two questions.

To assess if the implementation of this methodology was successful some extra questions will be added to the questionnaire:

On a scale from 1 to 10, how likely would you:

1. Continue shopping at this store;
2. Increase the amount of goods purchased at this store;
3. Recommend this store to other shoppers.

Ideally, this assessment should be performed before and after adjusting prices, to fully quantify their impact on customer's perception.

This methodology's most restrictive limitation is that it requires extensive data collection and treatment and performing it for all products at the stores is unfeasible. This methodology should be mainly used for new products for which the stores do not know how to price or for value destroying items (products for which the store loses money meaning products with consistently negative margins recorded).

To draw statistically relevant conclusions, there is a minimal number of answers that need to be collected (274 at Buraca and 275 at Massamá).

4.3.6 Structured and Semi-Structured Interviews with experts

Thus far, all analyses and conclusions have been reached by analyzing literature and by discussing matters with *Compracá's* team. To obtain the best and the most comprehensive results possible, a series of interviews, with successful players in the F&G retailing market, were conducted.

5. Result Analysis

5.1 Managerial Insights Survey

Each of the questions mentioned in the previous chapter was designed to evaluate each team's knowledge, proactivity and coherence. To simplify the analysis of the answers each store provided, a qualitative scoring system was implemented. If the answer provided by a store is satisfactory and demonstrates a good performance in the parameter that same question is evaluating, then the store is assigned a (+) for that question. If the answer is not satisfactory, a (-) is assigned. In the cases no answer was provided, the stores were assigned a (0), and when the answers or the overall evaluation was not conclusive, the store was assigned a (?).

Table 4 Overall Scores at Compracá's Stores

Store	Effectiveness
Buraca	-
Camarinha	--
Luís Gonzaga	+
Massamá	+
Carregado	?
Entroncamento	?
Porto de Mós	+

Overall, the Buraca and Camarinha stores are the locations with the most significant problems regarding their managerial insights. It Is interesting to notice that the stores that provided the least satisfying answers to this survey are also the locations with the largest decrease in revenue between 2018 and 2019, thus confirming a possible correlation between revenue fluctuations and managerial knowledge.

5.2 Price data

Notwithstanding the fact that data was collected for a short period, its review still gives some perception of the store's problems. The Buraca team was requested to pick their store's most valuable items or, in other words, the products customers demand the most and that simultaneously generate weighty profits for the store.

The data collected at the Buraca store showed that at *Minipreço* SSP are, on average, 12,72% cheaper, SPPs are 1,68% cheaper and IPPs are 0,85% cheaper.

To further understand the reasons that lead to some product's unsuccessful sales, two immediate measures should be taken: firstly,
the product's price elasticity should be calculated and secondly the vW method should be applied.

5.2.1 Adjusting Prices
The results of the price adjustment guidelines provided by *Compracá* are presented in section 4.6. These guidelines were only disregarded when the adjusted price was lower than the item's cost. In these situations (Cheese "Atabafado" and Oranges), it was assumed that the item would be sold at their cost price. On the category IPP, a 10% price increase was implemented, as an attempt to offset the RRP decreases on SSP and SPP (with the exception of Deodorant "Axe", since its price is already significantly higher than at MInipreço).

5.2.2 Financial Impact
To understand the financial impact that these prices adjustments would have on the store, some simple scenarios were developed.

Scenario 1: Prices are adjusted and demand remains unchanged
In this scenario, the company would lose 95,35€ in revenue. Since the decreases in RRP are obtained by decreasing the profit margins, all the money lost with the adjustments would be profit.

Scenario 2: Prices adjusted and demand increases 10% for SSP and 5% for SPP.
When calculating the adjusted revenue and profit in this scenario, one more factor was considered: for SPP, when for a specific item the price at *Minipreço* is higher than the price at *Compracá*, no price adjustment is applied, meaning that the price the store currently practices was considered. Otherwise, it would not be coherent, for a SPP, to assume its demand would increase given that its price rose.
In this scenario, the company would still loose money (49,48€).

5.2.3 Basket Comparison
To get a comprehensive understanding of the price points each store offers, a basket comparison analysis follows. The choice of products to include in this hypothetical basket was limited to the products chosen by the store, since the Buraca team was only available to check competitor data once and for those specific products. The chosen basket comprised 12 items, 4 of each sensitivity category (SSP, SPP and IPP) and from different categories, namely| (Bakery, Fruits&Vegetables, Soft Drinks, Dairy, Charcuturie, Fishmonger, Home Apparel, Breakfast, Hygiene and Wine&Liquor). Furthermore, according to Deco (2019), 39% of the products purchased by Portuguese consumers are already from private labels. This was also taken into consideration.
After adding the costs of the items, the ticket price at *Compracá* is 23,55€ and 19,82€ at *Minipreço* (approximately 16% less expensive). However, the Buraca team has reported that the item Deodorant "Axe" was on sale at *Minipreço* and that its regular RRP is 2,50€ more expensive, shortening the price gap between baskets to 5,2%.
In spite of the small difference, in general items are less expensive at *Minipreço*. Furthermore, there are items for which the difference in prices is almost 50% when the item is in a promotional period. These differences can severely affect the overall perception customers have about the store, especially in situations where customers buy small quantities of the products.
It is important to keep in mind that this basket was chosen out of a very limited range of products and that it was performed aiming to demonstrate the effects of comparing a group of products *versus* comparing them individually.

5.3 Customer's Price Perception
Due to security reasons, imposed by the COVID-19 pandemic, this part of the methodology was not performed.

5.4 Interviews with Experts

5.4.1 Interview with João Puga, Category Manager at Jerónimo Martins Polska
The Jerónimo Martins Group does not operate only in Portugal. In Poland, the company is responsible for Biedronka, the market-leading brand for the supermarket segment.
According to João Puga, the brand's success in Poland is due to their flawlessly executed pricing and marketing strategies, which assures customers that Biedronka is the supermarket with the lowest prices in the country.
Similarly to Portugal, the Polish F&G retailing market has a high concentration of players who practice different strategies, which ultimately results in a competitive market environment.
João Puga reinforced that conveying to customers that Biedronka is an everyday low prices store is a time-consuming task. It requires constantly researching competitor's prices (ideally weekly) and performing thorough analysis on Biedronka's own cost structure, in order to enable prices adjustments and offering the lowest prices in the market. The category manager also pointed out the importance of having an efficient and reliable supplying structure.

5.4.2 Interview with Miguel Mateus, the National Category Leader for Home Cleaning at SONAE MC, in Portugal
Miguel Mateus has been working in the F&G retailing market for over 7 years. The SONAE category leader also pointed out that for the proximity format, each pricing case is very particular and that trying to define rigid strategies for stores that operate in significantly different locations can lead to financial unsuccess.
In his opinion, there are two crucial mistakes managers of proximity format stores make: firstly, managers try, at all expenses, to compete with their competitors' prices and often forget that their stores are a "one-stop shop". Convenience stores should convey to its customers that their products are worth their premium price, either due to their quality or simply because of the superior shopping experience, when compared to other formats. One of the ways stores can do this is, for example, by expanding their schedules or by offering particular services.
Secondly, in his opinion, financial unsuccess can be a consequence of failing to identify what items in the store customers value the most (also referred to as the key valuable items). Properly identifying these items and creating good value propositions for costumers is key to improve any store's pricing strategies.
Lastly, Mr. Miguel pointed out that the importance of adopting flexible and dynamic pricing strategies.

5.4.3 Interview with Jorge Farinha, a member of *Soprei*'s administration
Soprei is a wholesaler based in Sertã, in Castelo Branco that supplies over 500 clients.
The majority of establishments this wholesaler supplies are similar to *Compracá's* stores: small supermarkets located in residential areas. *Soprei* offers a large range of brands (both private and manufacturer's brands). When asked about their pricing policies, Mr. Farinha replied that before agreeing to supply any location,

clients have to agree to some terms. For example, for some brands, supermarkets have to obey fixed promotional flyers, which means that they will have no control over those product's markup percentages (since the supplier will be setting both the product's costs and its price point). When asked if stores react negatively to this type of impositions, the response was interesting. The *Soprei* administrator explained that *Soprei*'s clients are highly receptive to these kinds of strategies, since they recognize that there is a high and growing demand for promotional strategies in the market. Additionally, Mr. Jorge added that clients who have embraced strategies that include temporary promotions and carrying large assortments of private label products have been able to grow their sales volume and overcome times of adversity. In Mr. Jorge's opinion, the lack of modernization was pointed as a clear factor, namely the lack of flexibility in shifting pricing strategies, the lack of investment in modern and clean infrastructures, the lack of attention to close competitor's moves and the lack of overall capacity to link all these factors and adopt prices to local markets. In an era when customers have access to all supermarket's prices in a matter of seconds paying close attention to competitor's moves, being perceptive and strategic are the most important factors for success.

5.5 Possible Problems and Limitations
Throughout this chapter it is noticeable that this methodology is notoriously flawed. Its major incongruities are:

- On the first steps, when the teams categorized the products, this task was performed without any objective knowledge or research. The company firmly believes that their teams have valuable insight into its customer's price sensitivity and that there is no need for further sensitivity assessments. However, the data collected (demand and price) do not corroborate that premise.
- Due to COVID-19, data collection was delayed, which affected its accuracy, since it overlapped with the period in which the Portuguese government-imposed restrictions on circulation (from October 30th to November 3rd).
- By talking to the Buraca's team, it is perceptible that pricing tasks rely mostly on the store manager and that collaborators are not generally interested in administrative matters. This team dynamic creates unbalanced situations: when the manager is not at store, price adjustments and competitor research is not performed. The price collection at Buraca was originally planned for two weeks, but when the store manager went on holidays (after the first week) the team claimed that task required too much work and they did not have time.
- When building scenarios 1 and 2, there was a need to consider simple demand approximations due to shortage of data. However, to get more conclusive results, proper demand forecasting models should be used.

5.6 Chapter Conclusion
Thus far, it appears that the afore presented methodology will aggravate *Compracá's* pricing issues even further. Literature on pricing and retailing point out the importance of data and data driven decisions. To improve pricing strategies and profit margins, companies must implement decision-aiding tools that thoroughly analyze data and present optimized solutions.
For these reasons, some improvement suggestions will be presented in the following chapter.

6. Possible Improvements

6.1 Methodology Overview
This new methodology comprises a series of steps which will have as a final deliverable an algorithm to be implemented by the company. The suggested steps follow:

1. Assessing the price elasticity (sensitivity) of all SKUs;
2. Bucket SKUs by level of sensitivity (SSP, SPP or IPP);
3. Define markup policy per bucket (how to choose markup, how often should it be updated and how should promotions be managed);
4. Test implementation;
5. Result Analysis and Improvements.

6.2 Assessing the elasticity (or sensitivity)
To determine a SKU's elasticity, two variables are needed: price (P) and quantity sold (Q). When using the elasticity equation (equation (1)) two time points are first determined, an initial point (for which the price is P_i and the quantity of product sold is Q_i) and a final time point (for which the price is P_f and the quantity sold is Q_f). After having these values, the following equation is applied:

$$\varepsilon = \frac{\Delta Q\%}{\Delta P\%} = \frac{\dfrac{Q_f - Q_i}{Q_i}}{\dfrac{P_f - P_i}{P_i}} \tag{1}$$

All elasticity values would have to be analyzed and appropriate thresholds would have to be defined. If it is not possible to identify appropriate thresholds after a proper data analysis, then it is reasonable to divide all products equally into the three categories: the products with the highest elasticity would be SSP, the products with the lowest elasticity would be IPP and the remaining products would be SPP.
To avoid bias due to the impact of COVID-19 on demand and prices, only data from 2019 was considered. The example of "Fula" Vegetable Oil follows:

Table 5 Fluctuations for Q and P, with respective elasticities, for Vegetable Oil "Fula"(2019).

Period	ΔQ%	ΔP%	$|\varepsilon|$
Jan-Feb	-40,00	-12,00	3,33
Feb-Mar	67,00	9,00	7,44
Mar-Apr	-80,00	47,00	1,70
Apr-May	1400,00	-33,00	42,42
May-Jun	53,00	0,00	---
Jun-Jul	-61,00	15,00	4,07
Jul-Aug	-67,00	-13,00	5,15
Aug-Sep	100,00	17,00	5,88
Sep-Oct	-83,00	14,00	5,93
Oct-Nov	100,00	0,00	---
Nov-Dec	850,00	-24,00	35,41
Average	-	-	12,37

When the price variation parcel was 0 the elasticity tends to infinity. Therefore, in these cases, the value was not considered. Furthermore, P and Q are not always inversely proportional, as it is expected from an essential product such as vegetable oil. This leads to the belief that external factors affected the store's sales, shifting demand (competitor's prices for example). Since there is no available information to assess what caused these same direction fluctuations, the months in which P and Q vary in a

directly proportional manner were not considered. Overall, for this product, elasticities vary between 1,70 and 42,42, averaging at 12,37, without any correlation. This fact confirms that this data might not be appropriate to calculate this product's elasticity. Using weekly or even daily information, that can be extracted from the store's POS system could be a solution for this problem. The aforementioned example was often found among data and for that reason some extra constraints to proceed with the analysis were defined:

1. Only products with a minimal monthly volume of 50 units were considered;
2. If the price did not vary at least 0,05€ between two consecutive months then it is reasonable to assume that if any fluctuations in quantity were not caused by price fluctuations, and therefore it is not accurate to consider data from that interval;

3. After applying these constraints, out of 1652 products, only 12 products were eligible for studying. However, some of these products had considerable elasticity fluctuations. On that account, a third constraint was imposed:

4. If throughout the year the elasticity of the product is not within the [-5;5] interval, then it will not be considered.

After imposing (3), only 3 products followed all constraints: Lettuce, Bread "Bola" (1 unit) and Bread "D'Avó" (5 units). The example of Lettuce follows:

Table 6 Fluctuations for Q and P, with respective elasticities, for Lettuce (2019).

Period	ΔQ%	ΔP%	$|\varepsilon|$
Jan-Feb	4,00	-18,00	0,22
Feb-Mar	29,00	-8,00	3,63
Mar-Apr	10,00	-20,00	0,50
Apr-May	12,00	-3,00	4,00
May-Jun	5,00	0,00	-
Jun-Jul	15,00	0,00	-
Jul-Aug	5,00	4,00	-
Aug-Sep	-25,00	30,00	0,83
Sep-Oct	-10,00	0,00	-
Oct-Nov	-22,00	0,00	-
Nov-Dec	118,00	-55,00	2,15
Average	-	-	1,89

For this SKU, only 6 data points were eligible for studying. This item's elasticity averages at 1,89. Despite representing a reduced amount of data, this table can help guide pricing decisions and making more accurate forecasts. For example, if the lettuce price were to be decreased in 25%:

$$\varepsilon = \frac{\Delta Q\%}{\Delta P\%} <=> \Delta Q\% = 1,89 \times 25 = 47,25\%. \qquad (2)$$

Then it would be reasonable to consider that demand for this item would increase in about 47,25%. According to the company, this classification is accurate, thus demonstrating that this data analysis and the constrictions that were considered are accurate as well.

6.3 Define a Markup Policy per Bucket
A proposal for an adequate markup policy, per bucket, follows:

Key SSP and SPP: Check Minipreço's promotions and overall price shifts and immediately adjust prices accordingly (weekly). Prices at *Compracá* should be equal or lower

Non-Key SSP and SPP: After the key SSP and SPP, these product's prices should be checked and updated as soon as possible (ideally no longer than 2 days after Minipreço's promotions are advertised). Non-key SSP's prices should be lower than at Minipreços. The non-key SPP should match Minipreço's prices as much as possible, but there is some flexibility to practice slightly higher prices (no more than 5%).

Key IPP: This is the key segment for increasing profitability: products that customers search for the most and for which their willingness to pay is larger. Within SONAE's pre-set range of markups, *Compracá* should try to practice markups as close as possible to the superior limit of the interval. *Compracá* should start by checking competitor's prices twice every month and then evaluate if this measure caused a positive impact on revenue and profit.

Non-Key IPP: These products represent an opportunity for practicing higher markups, but the impact of this practice on general revenue and profit will not be as strong as key IPP (lower demand). This segment of products should be the one to which the team dedicates less effort. Every other segment' 'pricing decisions should be prioritized over this segment. Monthly researchs on competitor's prices should be enough.

6.4 Managing Promotions and Discounts
Ideally, to obtain the highest margins as possible, companies should adopt a promotion planning model based on a robust mathematical model. However, applying such models requires a high level of expertise that the company does not possess. For this reason, on a first instance the company should try to keep their current methodology but taking into consideration the previously presented algorithm regarding the frequency of updates.
Then, if this first attempt does not cause an increase in revenue and profit, the possibility of hiring an expert or outsourcing this task should be considered.

6.5 Next Steps
It was not possible to enforce ne last two steps of this methodology due to scarcity of data and lack of collaboration of behalf of the company.

6.6 Model Limitations
This second methodology was presented as an attempt to improve the methodology presented in chapter 4, considering the limitations encountered. However, there are some constraints that can limit its effectiveness.
First, this methodology will require some initial investment that will only have return in the long run (namely for a software that tracks competitor's prices in real time and on training their employees for performing complex data analysis).
Still regarding the information that this methodology requires, *Compracá* keeps no records of daily sales, tickets or wastage. All this information would have to be periodically gathered to attain the objectives this company seeks to achieve.

Secondly, teams have reported that adjusting prices regularly consumes too much time and that this task is not compatible with their regular workload at the store.

7. Conclusions, Recommendations and Future Work

7.1 Conclusions

This paper aimed to bring some clarity into *Compracá's* most urgent pricing-related issues and to develop a methodology to improve its strategies and its customer's price perception. Due to the scarcity of data, it is difficult to pin-point what *Compracá's* exact issue is and therefore, it was difficult to develop a robust strategy. However, some plausible hypotheses were raised.:

- **Hypothesis 1:** Lack of Managerial Insights among Store Managers
- **Hypothesis 2:** Lack of communication between the company's administration and the stores.
- **Hypothesis 3:** Lack of Interest among Stores' Teams
- **Hypothesis 4:** Unfit Product Assortment
- **Hypothesis 5:** The data that was provided does not portrait reality

It is important to notice that these hypotheses are not mutually exclusive, meaning that one or more can simultaneously be the cause of the Buraca store's pricing issues.

Despite the initially defined objectives, while studying *Compracá's* operation some unanticipated issues arose namely the shortage of reliable data and problems with the teams which compromised the data analysis and collection respectively. Additionally, the COVID-19 pandemic precluded the accomplishment of the "improving customer's perception" objective, since it was not possible to physically inquiry the customers and *Compracá* does not have access to its client's e-mails.

Lastly, it is important to notice that this study was performed during a time in which the F&G retailing market and the average consumer profile are both undergoing thought fundamental changes, factor which greatly increase the complexity of the study.

7.2 Recommendations and Future Work

Summarily, to achieve the objectives that were defined in chapter 1 and to improve this store's pricing strategies, the following steps should be taken:

- Motivate and train employees in pricing matters, so that this task can be progressively and partially decentralized to the stores;
- Obtain more reliable information so that decisions can be made based on objective facts (quantify theft and the effectiveness of promotion items that are close to its expiration date);
- Purchase a software that provides real time data regarding competitor's prices;
- Invest in a structured promotional plan and on its advertisement;

- Conduct customer surveys to measure its customer's price perception. Additionally, these surveys could be used to assess the reasons for the low sales recorded for certain items;
- Add value to the shopping experience at *Compracá* (expand schedule and offer additional services, such as a take-away service);
- Create an online presence.

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