CATÓLICA LISBON
BUSINESS & ECONOMICS

The Impact of Private-label Assortment Shelf Proportion on Store Brand Preference

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Dissertation written under the supervision of Prof. Paulo Romeiro.

Dissertation submitted in partial fulfilment of requirements for the MSc in Management with specialization in Strategic Marketing at the Universidade Católica Portuguesa.

ABSTRACT

Title: “The Impact of Private-label Assortment Shelf Proportion on Store Brand Preference”

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This study investigates the impact of private-label shelf assortment proportion on consumer preferences for store brands in Portugal, specifically within selected product categories. With the rise in private-label shopping attributed to economic challenges, the research aims to uncover how retailers can explore this aspect to improve consumer preferences.

To achieve this, the research aims to find out how the levels of private-label proportion in product assortments make a difference in consumer preferences and perceptions of said store brand. This study also tries to provide insights into the mediation effect of Brand Equity between shelf proportion and store brand preference, providing retailers a clear path on how to enhance their strategy.

An exploratory survey was created to explore respondents' perceptions and opinions of different stimuli developed based on Portuguese retailers. Secondary data was collected through a Literature Review and explored in order to explore the possibilities of a relationship between the survey analysis and previous studies.

Surprisingly, the study reveals that the Shelf proportion of private-labels does not significantly impact Store Brand Equity, challenging conventional expectations. Additionally, consumer awareness and perceived quality are understood to play pivotal roles in influencing Store Brand Preference, while Store Brand Equity proves to be the strongest factor. In addition, the study revealed a significant impact of Private-label shelf assortment proportion on Store Brand Performance.

SUMÁRIO

Este estudo investiga o impacto da proporção do conjunto de produtos de marca própria nas preferências dos consumidores por marcas próprias em Portugal. Com o aumento das compras de marca própria atribuído aos desafios económicos atuais, esta investigação pretende descobrir como os retalhistas podem explorar este aspeto para melhorar as preferências dos consumidores pelas próprias marcas.

Para tal, a investigação pretende descobrir de que forma os níveis de proporção de marcas próprias no conjunto de produtos fazem a diferença nas preferências e perceções dos consumidores em relação à referida marca. Este estudo tenta também fornecer informações sobre o efeito de mediação de Brand Equity entre a proporção e a preferência pela marca própria, fornecendo aos retalhistas uma estratégia sobre como melhorar o desempenho.

Foi criado um questionário para explorar as perceções e opiniões dos inquiridos sobre diferentes estímulos desenvolvidos com base nos retalhistas portugueses. Os dados secundários foram recolhidos através de uma revisão da literatura e explorados de forma a entender as possibilidades de uma relação entre a análise do inquérito e estes estudos anteriores.

Surpreendentemente, o estudo revela que a proporção de marcas próprias nas prateleiras não tem um impacto significativo na Brand Equity da marca própria. Além disso, entende-se que o reconhecimento de marca e a perceção de qualidade desempenham um papel fundamental na influência sobre a preferência, mas a Brand Equity prova ser um fator mais forte. Adicionalmente, o estudo revelou um impacto significativo da proporção do conjunto de produtos de marca própria no desempenho da mesma.

ACKNOWLEDGEMENTS

Throughout the process of finishing this thesis, Professor Paulo Romeiro, my supervisor, has provided me with constant support, direction, and patience, and for that, I am thankful. My appreciation for the class he taught throughout the master's program played a key role in my decision to attend this seminar.

I would especially like to thank my girlfriend, whose unwavering support and inspiration were really helpful, particularly during my doubtful periods when I thought about putting off finishing this thesis. Her confidence in my skills helped me stay motivated and focused on overcoming obstacles.

I am truly appreciative of Panasonic for giving me the chance to intern and for providing the flexibility and assistance I needed to concentrate on my thesis when necessary.

I would also like to express my gratitude to the other participants of my dissertation seminar. Your feedback throughout each session was really helpful in helping me improve the quality of my work.

Lastly, I just wanted to thank everyone who has contributed in any way to this project and its conclusion.

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CHAPTER 1: INTRODUCTION

1.1 Background

This study's area of research pertains to the impact of private-label shelf proportion on store brand preference. This is a topic chosen due to its profound weight from both scholarly and managerial viewpoints and its incredibly relevant impact on the current economic state in Portugal. The ultimate goal is drawing attention to a void in the current literature - making sense of how an array or variety within privately labeled brands could affect buyers' favoritism directed at store brands amidst certain item groups/categories.

In recent years, Portugal has experienced a notable surge in private-label shopping (ECO Sapo, 2023), a phenomenon intricately linked to the prevalent financial challenges faced by numerous families across the country (DECO PROTeste, 2023). As economic constraints tighten their grip on households, consumers are increasingly turning to private-label products as a cost-effective alternative to national brands (ECO Sapo, 2023).

This shift in consumer behavior has prompted retailers to adopt diverse strategies in response to the growing demand for private-label goods. Some retailers have made efforts to enhance the equity of their private-label offerings, investing in quality and brand awareness to foster consumer trust. Additionally, some retailers have opted for a more expansive approach, increasing the proportion of their private-label assortment to cater to a broader consumer base.

While numerous studies delved into understanding bonds between customer preferences & private-label products, not many examined the role of assortment within product categories.

Notable sources in the preliminary literature review include studies by Cobb-Walgren et al. (1995) on store brand performance, Swoboda et al. (2013) on store brand equity and Cuneo et al. (2012) on the relationship between Private-labels and Brand Equity.

Additionally, existing literature indicates the need to investigate how components of Store Brand Equity, like awareness and quality perception, mediate the shelf proportion-preference relationship, which this study seeks to address.

1.2 Problem Statement

The problem addressed in this study is to understand how the shelf proportion of private-label brands influences consumer preferences for store brands while considering the mediating role of store brand equity.

Research Questions:

- How does the shelf proportion of private-label brands influence consumer preferences for store brands?
- What effect does the shelf proportion of private labels have on the store's brand equity?
- What is the effect that consumer private-label awareness and quality perception (separate and merged) have on brand preference?

1.3 Relevance

The research holds both academic and managerial relevance. From an academic standpoint, it contributes to the literature review by offering insights into a recently growing phenomenon – private-labels. It enhances our understanding of the intricate dynamics between private-label shelf proportion and store brand preference, shedding light on specific variables.

From a managerial standpoint, the research done by this paper shall contribute to decisions regarding product management for retailers. It will provide real-life feedback about product shelf proportion and will help companies manage their private brands as smoothly as possible.

1.4 Research methods

Data Collection: The research will involve both primary and secondary data collection. Primary data will be gathered through surveys and interviews with consumers to assess their preferences and perceptions.

Methodology: The study will mainly use a quantitative research method for survey data examination since this strategy grants statistical scrutiny for hypothesis and relation testing. Qualitative data from interviews was used to help build the survey questionnaire without any bias and low-understanding questions.

Sample: The target sample will consist of consumers in the selected product categories, with a focus on individuals who have purchased private-labels and products and are knowledgeable about Mercadona, Continente, Lidl, and Pingo Doce.

Statistical Analyses: On SPSS, correlation analysis is used to calculate the correlation coefficients between store brand preference and the independent variables. Also, a linear regression analysis is needed to examine how independent variables predict store brand preference.

1.5 Dissertation outline

Commencing with a concise overview in the Abstract, the dissertation presents the research's essence, objectives, and key findings. In the Introduction, the study's significance is explored, providing context and outlining the research questions.

Moving to the Literature Review, an examination of existing research on store brand purchasing unfolds. The impact of variables on buying behavior is scrutinized, leading to the formation of a hypothesis. Subsequently, the Conceptual Model chapter introduces and justifies the research's theoretical framework. Key variables and their interrelationships within the context of store brands are delineated.

The Methodology chapter details the research design, data collection, and statistical procedures. It explains the constructs embedded in the questionnaire. In the Results Analysis chapter, a comprehensive examination of questionnaire results is presented, providing both general and in-depth insights.

The final chapter, Conclusions, Limitations, and Future Research, integrates the study's findings, addresses its limitations, and suggests future research paths.

The References section lists all sources cited, adhering to a specific citation style. Supplementary materials, including the questionnaire and raw data, are provided in the Appendix.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Brand Preference

The degree to which customers choose one brand over another in a certain product category is known as brand preference, according to Cobb-Walgren et al., (1995). Several variables, including pricing, product quality, marketing initiatives, and brand equity, can affect consumer choice for a brand.

Ailawadi et al. (2001) found that a consumer's prior exposure to a shop's private-label brand can significantly influence their choice of that brand going forward. The study also showed that retailers may boost consumer demand for and loyalty to their store brands by providing a broad selection of private-label choices to meet customers' needs and preferences, as well as consistent quality and value across all of their private-label brands. It was also found that customers were less likely to have a strong preference for and future buy intention for a shop private-label brand if they had a bad experience with it. The survey also indicated that by offering a wide range of private-label alternatives to suit customers' requirements and tastes, as well as consistent quality and value across all of their private-label brands, retailers may increase consumers' desire for and loyalty to their store brands (Cobb-Walgren et al., 1995).

2.1.1 Store Brand Preference

Although the authors of Brand Equity, Brand Preference, and Purchase Intent don´t provide a direct definition of store brand preference, they use the term to refer to consumers' willingness to choose store brands over private-label brands in each product category (Cobb-Walgren et al., 1995). Another paper by DAM (2020) discusses the concept of brand preference in general, referring to a consumer's positive attitude or inclination towards a particular brand. He states that this preference can be influenced by factors such as brand trust, perceived value, brand image, and brand awareness.

2.2 Private-label Proportion/Assortment

In the paper written by Broniarczyk (1998), it is examined the impact of reducing the number of SKUs on the consumer perceptions of a certain assortment. This study comes from the fact that historically, retailers have been hesitant to this reduction in fear of lowering consumer

perceptions and reducing shopping frequency. To reach a conclusion, the authors developed two different studies.

Study 1 involved a field experiment in which the authors examined the impact of reducing SKU on sales in the box filler category across 23 control and 23 test stores. The results showed that reducing the number from 26 to 16 in this category didn't show a significant loss in category sales between the control and test stores.

The authors, for the 2nd study, conducted a laboratory study in which they investigated the influence of SKU reduction on consumer perceptions of assortments in 5 categories: cereal, cookies, crackers, soup, and yogurt. According to the authors, lowering the number of SKUs in each category had a detrimental influence on perceptions of the category. However, variables such as the availability of favored products and the adaptation of products to consumer demands reduce this effect.

Overall, the results of the study conducted by Broniarczyk et al. (1998), show how that lowering the number of SKUs may hurt consumers' perception of an assortment. But this can be changed by factors such as the availability of favorite products and the fit of said products to the consumers' needs and likes. In addition, the impact of the reduction varies depending on the product category in question.

2.2.1 Private-label Share of Shelf in a Retailer and its effects on Store Brand Preference

Paul-Valentin Ngobo (2011) presents a comprehensive analysis of the relationship between the proliferation of private-label products and store brand preference. The study developed proposes that an increase in the proportion of private-label products within a retailer's product assortment may initially create a favorable effect on store loyalty (Ngobo, 2011).

The author argues that the introduction and maintenance of an extensive range of private-label products may initially serve as a means to attract and retain customers, but the study also mentions that there may exist a threshold beyond which it may potentially result in a decline in store preference (Ngobo, 2011).

2.2.2 Implications of having a higher proportion of private-label products

The allocation of shelf space to private-label products within the retail environment has been associated with several consequences that impose influence over sales, store/store brand preference, and consumer perception. Zameer et al. (2012) indicate that a higher proportion of private-label products can yield the following outcomes:

Elevated Store Brand Performance: The strategic allocation of additional shelf space to private-label products can significantly enhance the overall performance of a retail establishment, resulting in increased total sales (Zameer et al., 2012). This effect can be attributed to the appeal of competitively priced private-label products for cost-conscious consumers, coupled with the flexibility that retailers possess in determining pricing strategies and promoting these products (Zameer et al., 2012).

Consumer Preference for the Store / Store Brand: Consumers may exhibit a predilection for retail establishments that feature a higher percentage of private-label items (Zameer et al., 2012). This inclination arises from the perception that private-label products offer enhanced value in comparison to national brands.

In essence, a higher proportion of private-label products available for purchase can yield increased sales, foster a preference for the retail store, and cultivate a positive reputation among consumers.

A study done by Suárez (2005) suggests that there may be a relationship between shelf space and brand preference, particularly in the context of store brands versus national brands. By observing that retailers allocate more shelf space to their own store brands in certain categories, this study implies that this allocation could influence consumer behavior and brand preference (Suárez, 2005).

The logic behind this suggestion is that increased shelf space for store brands may enhance their visibility and exposure to consumers, potentially leading to higher sales and brand recognition (Suárez, 2005). Conversely, national brands with less shelf space may experience reduced visibility and, consequently, lower sales and brand preference (Suárez, 2005).

H1: A higher proportion of Private-label products positively impacts Store Brand Preference

2.3 Brand Equity

2.3.1 Brand Equity

Brand equity is defined by Walfried Lassar et al. (1995) as the value that a brand brings to a product or service. It is the added value that a brand adds to a product or service in addition to the functional benefits it provides. Perceptions from consumers drive brand equity, which is a crucial aspect of gaining a competitive advantage.

Lane (1993), with the support of Keller and Aaker, suggests and provides an approach for measuring brand equity. They declare the need for this framework by claiming that brand equity is a crucial aspect of a company's success and that it must be measured and monitored at the customer level.

In managerial terms, Walfried Lassar et al. (1995) suggest that companies must measure brand equity in order to achieve a competitive advantage in the market. Keller's framework (Kuhn et al., 2008) is a good tool for measuring customer-based brand equity and can help businesses review their marketing strategies and suggest areas for development.

2.3.2 Brand Equity's Components

There could be many options to define as the components of Brand Equity, but according to Aaker (1991), we should consider the following: brand loyalty, brand awareness, perceived quality, brand associations, and other proprietary brand assets. The latter component is often not considered as they don't have direct relationships with the consumers (Walfried Lassar et al., 1995). These elements can be measured using a variety of techniques, including surveys, focus groups, and brand audits (Walfried Lassar et al., 1995). Companies may build strong brand interactions with customers and gain competitive advantages in the marketplace by knowing and controlling these components.

According to the paper written by Adnan Bashir et al. (2019), based on the previous work done (Aaker, 1991), loyalty is a crucial component of brand equity, and it has been extensively studied in academic literature. Brand loyalty refers to a customer's commitment to repeatedly purchase or patronize a particular brand, despite situational influences and marketing efforts that may cause switching behavior. Brand loyalty is highly essential in value addition in a brand since it gives brand loyal customers for a longer period of time (Aaker, 1991). This is because

brand-loyal customers are more likely to purchase products from the same brand repeatedly, even if they are more expensive than similar products from other brands. In the case of Brand Loyalty, it isn't as relevant to our model because we aim to investigate not only current customers but also potential customers. Therefore, it is not relevant to take loyalty into account (Adnan Bashir et al., 2019).

Brand awareness constitutes the capacity of potential consumers to recognize and recall a brand's affiliation with a specific product category (Adnan Bashir et al., 2019). Positioned as the initial and pivotal stage in brand equity development, it serves as a prerequisite for both brand and customer-based equity. Various factors, including advertising, promotions, and word-of-mouth recommendations, exert influence on brand awareness. Notably, strategic investments in advertising and promotions contribute to heightened brand awareness, and positive word-of-mouth recommendations further enhance the brand's visibility among potential consumers (Aaker, 1991).

Perceived quality encapsulates a consumer's evaluation of a product's overall excellence or superiority (Adnan Bashir et al., 2019), and brands/retailers use it to increase a brand's value proposition. If a certain product has good features, design, and/or package, it is more likely to be perceived as having high quality by consumers.

Brand associations refer to anything that is linked in memory to a brand. These associations can be positive or negative and can be formed through various means, such as advertising, product design, and packaging. This component is seen as weaker in some papers as the overall impact on brand equity is smaller compared to the previous components (Adnan Bashir et al., 2019).

2.3.3 Store Brand Equity and its relationship with Store Brand Preference

In recent years, the concept of store brand equity has garnered more attention in the marketing literature. It is defined by Beristain & Zorrilla (2011) as "a set of assets and liabilities linked to the store brand that add to or detract from the value endowed by a product or service to the retailer and/or its customers." Put differently, store brand equity is the value that a store brand contributes to the total value of a good or service.

In the study done by Beristain & Zorrilla (2011), the components of store brand equity were measured using a multi-item scale. This study chose to use 3 of the components of store brand

equity according to Aaker's model - brand loyalty, brand awareness, and perceived quality (Aaker, 1991).

A variety of theoretical frameworks have been put forth to boost the equity of a particular class of distributor brand, like store brands. These models include tactics like raising the store's reputation, providing competitive pricing, and enhancing the store's brand quality. Retailers can boost customer loyalty and profitability by putting these strategies into practice and improving the value that their store brands offer to consumers.

Overall, store brand equity is an important concept for retailers to understand and manage effectively (Beristain & Zorrilla, 2011). By focusing on the key antecedents of store image and price and implementing strategies to increase the equity of their store brands, retailers can improve their brand management and increase customer loyalty.

According to a study done by Cobb-Walgren et al. (1995), they showcased that consumers were more likely to prefer store brands that had higher levels of brand equity. They suggested that investing in brand equity can lead to increased consumer preference and purchase intentions. In this study, both perceived quality and awareness were used as components of brand equity to analyze their effect on brand preference. Brand Associations were also used, but as the research previously done by Adnan Bashir et al. (2019) stated, due to its lack of effect on Store Brand Preference it is left out of the hypothesis.

H2: Store Brand Equity positively impacts Store Brand Preference.

H2a: Store Brand Perceived Quality positively impacts Store Brand Preference.

H2b: Store Brand Awareness positively impacts Store Brand Preference.

2.3.4 Relationship between Private-label Brands and Store Brand Equity

The paper done by Cuneo et al. (2012) investigates the connection between brand equity and private-label brands. Specifically, the authors created a study (explored in section 2.2 of the Literature Review) that assesses private-label brand equity from a consumer standpoint and investigates how it differs among product categories and private-label brands.

According to the authors Cuneo et al. (2012), it is possible for private-label brands to develop consumer brand equity, but the level of effectiveness differs between categories and brands.

The authors also found in their study that characteristics such as perceived quality, brand awareness, and loyalty influence brand equity.

The results of the study suggest that stores can increase brand equity and consumer loyalty by using private-label products. In order for the effect to be positive, the authors suggest the need to regulate the brand quality and pricing (Cuneo et al., 2012). In addition, Suárez (2005) cites research done by Recio, M. and Roman, M.V. (1999) where they state that stores use their own brands as competitive assets in order to enhance store equity and reputation.

Moving on to the impact that private-label brands may have on brand equity, they have discovered that private-label brands may have a negative effect on the perceived quality dimension of store brands' brand equity, for instance, if they are thought to be of a similar quality to store brands. Similarly, the brand associations component of store brands' brand equity may suffer if private-label products are promoted as being less expensive than store brands (Cuneo et al., 2012).

However, it's also possible that private-label brands could have a positive impact on store brands' brand equity if they help to increase overall category demand and awareness. For example, if a private-label brand introduces a new product format or flavor that becomes popular, this could increase overall category demand and benefit all brands in the category. Additionally, a well-curated assortment of private-label brands could help to enhance the overall image of the store brand and increase its perceived quality and brand associations.

2.3.4.1 Private-label Brand Proportion effect on Store Brand Equity

Positioning private-label products alongside well-established brands significantly influences consumers' perceptions regarding the quality and value of these products, something that is enhanced whenever the proportion is higher. When positioned in proximity to major brands, private-label products may be perceived as superior in quality, potentially leading to increased sales. Furthermore, the conviction that private-label products deliver greater value compared to national brands can influence consumer perception and behavior positively.

Suárez (2005) suggests that retailers allocate more shelf space to their own store brands in certain categories, which could potentially impact the visibility and sales of national brands in

those categories. This implies that store brands may have a higher level of equity in those categories as retailers are devoting more resources to promoting and selling their own brands.

H3: A higher proportion of Private-label products positively impacts Store Brand Equity.

H4: Store Brand Equity mediates the relationship between Private-label Assortment (Proportion) and Store Brand Preference

2.4 Conceptual Framework

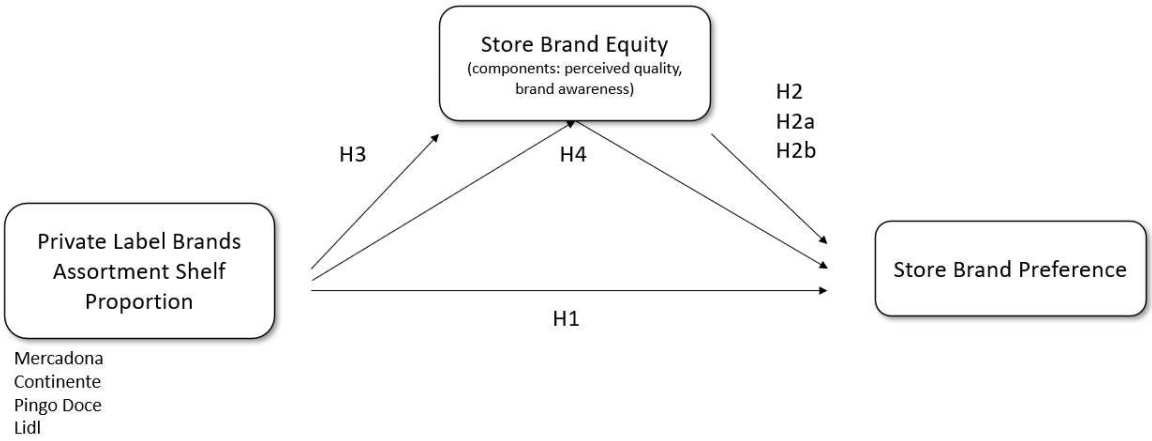

Figure 1 - Conceptual Framework

CHAPTER 3: METHODOLOGY

The objective of this thesis is to investigate the impact of private-label brand shelf proportion on store brand preference. This research approach combines a comprehensive literature review, hypothesis formulation, and quantitative data analysis to gain insights into the drivers of consumer preferences for store brands.

3.1 Research Approach

The research journey begins with an in-depth literature review that encompasses a wide range of topics related to private-label brands, brand preferences, consumer behavior, and brand equity. This review establishes the essential structure for hypothesis generation, assisting in recognizing significant factors and their links.

A versatile investigative method is employed to respond to the research questions and examine the suggested theories. Initially, the exploratory method is employed, involving systematic variable identification and hypothesis formulation based on the findings from the literature review. The exploratory phase serves as a crucial preparatory step in the research process.

Subsequently, the research transitions into the explanatory method, where the primary goal is to empirically test the formulated hypotheses and elucidate the underlying relationships between variables. This approach involves the design and execution of a structured survey instrument tailored to the research framework, focusing on private-label product shelf proportion, store brand equity components, and store brand preference. Demographic questions are included to facilitate segmentation and bias assessment.

This study predominantly concentrates on the collection and analysis of quantitative data to measure and quantify the relationships between private-label product shelf proportion, store brand equity components, and store brand preference in various product categories. The reliance on quantitative data allows for a systematic and statistically rigorous examination of the research questions and hypotheses.

By synthesizing insights from existing literature, conducting quantitative data analysis, and capitalizing on the strengths of the explanatory method, this research approach aims to provide a comprehensive understanding of how private-label brand shelf proportion influences store

brand preference in the context of categories. The methodological procedures have been carefully designed to yield robust and reliable results.

3.3 Primary Data

The primary data for this research was obtained with an exploratory survey. Surveys have benefits such as low costs, quick response times, and accessibility to a large audience regardless of their location. For example, reaching a big population is quick and easy, and there are no costs associated, so it makes a good option for country-wide analysis. Furthermore, online surveys have demonstrated efficacy in gauging consumer attitudes and behaviors and have been utilized to inform marketing theory. All things considered, surveys are an excellent way to collect information for marketing research and can offer insightful information about the preferences and behaviors of consumers (Ilieva et al., 2002).

One-on-one validation interviews were conducted to ensure the effectiveness and unbiased approach of the survey stimuli. These interviews engaged participants in direct discussions, allowing for real-time clarification of questions and in-depth feedback. This process enhanced the clarity and precision of the survey questions, ensuring that the data collected would be reliable and unbiased.

3.3.1 Pre-Interviews

During the early stages of survey creation, a vital measure was included to improve the efficiency and fairness of the survey prompts. It meant doing individual pre-interviews with participants to improve the questionnaire and decrease the possibility of bias or misinterpretation.

The main objective of these validation interviews had two distinct purposes. Initially, the interviews were conducted to assess the comprehensibility of the survey questions. Participants actively participated in direct discussions, offering immediate insights into their understanding and analysis of each subject. This procedure played a crucial role in detecting any possible ambiguity, guaranteeing that the survey questions were unambiguous and easily comprehensible.

Furthermore, the interviews were conducted with the purpose of mitigating any biases present in the survey stimulus. Through engaging participants in discussions regarding the survey content, any inadvertent biases or assumptions inherent in the questions were acknowledged and corrected. The proactive strategy aimed to develop a survey instrument that would produce dependable and impartial results.

3.3.1.1 Approach

The validation interview participants were meticulously chosen to accurately reflect the varied demographic characteristics of the survey's target audience. Participants were given the opportunity to engage in open-ended discussions, enabling them to openly express their opinions and interpretations. The iterative structure of the interview process facilitated prompt modifications in response to participant comments.

3.3.1.2 Effects on Survey Design

The knowledge acquired from the validation interviews was crucial in improving the survey questionnaire. Modifications were implemented to the phrasing of the questions, the available choices for responses, and the overall organization in order to guarantee that participants would consistently and accurately understand and answer the survey.

3.3.1.3 Outcome

The validation interviews improved the clarity of survey questions and helped create a stronger and more impartial instrument. The inclusion of participants' direct participation enhanced the final survey, rendering it a more efficacious instrument for gathering significant data.

3.3.1.4 Conclusion

By incorporating validation interviews into the survey production process, there is a clear dedication to ensuring methodological rigor and the quality of the data. The study's findings

were made more reliable and valid by involving participants in the creation of the survey, which helped to reduce any potential problems with clarity and bias.

3.3.2 Survey

3.3.2.1 Data Collection

The primary objective of this study is to gather essential data regarding consumer preferences for store brands in the shower gel and packaged milk product categories. These categories were selected based on insights from the literature review, which indicated that private-label tend to be more effective in categories where consumers exhibit lower brand loyalty and are more price-sensitive (Cuneo et al., 2012).

Considering the consumer preferences and market dynamics within these categories, the focus of this research is particularly relevant. The selected categories encompass items where consumers often seek cost-effective choices while being less tied to specific brands. To effectively investigate this, a survey was designed that employs a range of stimuli related to private-label brand shelf proportion in these categories.

Data collection took place from 20 November to 5 December. The survey was conducted through online questionnaires distributed primarily via social media platforms, including Facebook, LinkedIn, Instagram, and WhatsApp.

The target population consists of consumers who regularly engage with bakery/pastry and premade food products. To ensure alignment with this criterion, control questions will automatically exclude respondents who have not purchased any products from these categories.

To facilitate the objectives of this study, respondents were presented with a visual stimulus that corresponded to the specific scenario within their respective survey. These scenarios were thoughtfully designed to align with the research goals and systematically randomized across all respondents. Each questionnaire featured one of eight distinct scenarios, each displaying a different image. These scenarios included variations such as product sections of each store within the bakery/pastry and premade foods categories, with private-label products highlighted. The deliberate inclusion of these diverse scenarios in the survey design enables us to quantitatively assess the impact of each scenario on consumer preferences within the context

of the chosen product categories. This approach allows us to gain a comprehensive understanding of how these scenarios influence store brand preferences.

This data collection approach aims to provide valuable insights into the influence of private-label brand shelf proportion on store brand preferences in the selected product categories, allowing us to draw meaningful conclusions from the survey results.

3.3.2.2 Stimuli Development

A methodical approach was employed to develop the stimuli for this study. Following the selection of the specific product categories, the next steps involved capturing visual representations of the product lines from various supermarkets within these categories.

In step two, photographs of the product displays were taken, ensuring a comprehensive and unbiased representation of the private-label brand assortments in the chosen supermarkets.

In step three, image editing in Photoshop was conducted to remove any branding elements, ensuring that the focus of the stimuli was solely on the private-label products.

Subsequently, step four entailed subjecting these images to validation through one-on-one interviews with participants. This critical step aimed to confirm the effectiveness and neutrality of the stimuli.

Once the images were validated, they were seamlessly integrated into the survey platform. This allowed for the exploration of public sentiment and preferences regarding each private-label shelf proportion within the chosen product categories, as outlined in step five.

The data gathered from this process is a vital component of the study, as it can be correlated with the various other variables to draw meaningful insights and conclusions.

3.3.2.3 Measurement / Indicators

The survey measured the respondent's perception of the independent variable by presenting stimuli to participants. Since this variable is not measured by specific goods or a conventional scale, the stimuli, which represent diverse assortments found in various stores, were used as a way for participants to indicate their preferences.

The store brand equity (mediator) was measured through Likert scale questions, adapted to a 5-point scale as follows: 1 - Strongly Disagree; 2 - Somewhat Disagree; 3 - Neither Agree nor Disagree; 4 - Somewhat Agree; 5 - Strongly Agree

Components of the Mediator:

1. Perceived Quality:

The participants were asked to evaluate how much they agreed with statements about how good store brand products were. The study employed a 5-point Likert scale, which was modified from the original 7-point scale. The statements were:

- "Store's own brand is of high quality."
- "Store's own brand is trustworthy."
- "Store's own brand gives me the result I am looking for."

2. Brand Awareness:

The study analyzed participants' awareness of the store brand using a Likert scale. The scale used was a 5-one, which was changed from the original 7-point Likert scale. The statements were:

- "I can tell the difference between Store's own brand and other brands in the store."
- "I associate the products from the Store's own brand with certain positive characteristics (e.g., good price or good quality)."
- "Buyers of Store's own brand are people who 'know how to shop' (who shop smartly, in your opinion)."
- "Buying a product that belongs to the Store's own brand gives me trust."

The survey also contained Likert scale questions to assess opinions about the dependent variable - store brand preference.

- "I feel that the store's own brand is appealing to me."
- "I prefer Store's own brand to others of its type."
- "I prefer the Store's own brand if everything else is equal (accessibility, price, etc.)."

- "In general, I prefer Store's own brand."

The Likert scale used to measure the components of Store Brand Equity was modified from the research conducted by (Beristain & Zorrilla, 2011). The scale had a Cronbach's alpha reliability coefficient of 0.7. The Likert scale questions used to assess store brand preference came from (DAM, 2020) and showed a high level of reliability with a Cronbach's alpha coefficient of 0.8, indicating the strength and consistency of the measurement.

Framework	Measure	Items	Scale	Reference	Cronbach α
IV	Product Assortment Proportion of Shelf of Private Label Brands	*na*	*Stimuli*	*na*	*na*
Mediator	Store Brand Equity	7	7-point Likert Scale (need to be adapted to a 5 point scale)	Beristain, Jose Juan, and Pilar Zorrilla (2011)	0.7
	Component 1: Perceived Quality	3			
	Component 2: Brand Awareness	4			
DV	Store Brand Preference	4	5-point Likert Scale	Dam, T. C. (2020)	*0.8*

Table 1 - Operational Model

Perceived Quality	Brand Awareness
Beristain, Jose Juan, and Pilar Zorrilla (2011)	Beristain, Jose Juan, and Pilar Zorrilla (2011)
Perceived quality Qual1 Brand X olive oil is of high quality Qual2 Brand X olive oil is trustworthy Qual3 Brand X olive oil gives me the result I am looking for	***Brand awareness/associations*** Awass1 Awass2 Awass3 Awass4

Store Brand Preference	
Dam, T. C. (2020)	
The measurement items of the constructs from previous research were reviewed and adapted to suit the study circumstance. A 5-point Likert scale ranging from "1 = completely disagree" to "5 = completely agree" was performed. In this present research, we adapted four items	Brand preference 1. I feel that this phone brand is appealing to me 2. I prefer this phone brand to other brands of its type 3. I prefer this phone brand if everything else is equal 4. In general, I prefer this phone brand

Figure 2 - Model Construct Questions

3.3.2.4 Data Analysis

SPSS analysis was performed on all of the survey data. Three different analyses were conducted: mediation, linear regressions, and descriptive statistics.

To analyze Hypotheses 1, 2 (a and b), and three, a Linear Regression was used. For the first one, the regression identified any impact that the independent variable (Private-label Product Assortment Shelf Proportion) had on the dependent variable (Store Brand Preference) of our model (Sweet & Grace-Martin, 1999). For Hypothesis 2, the analysis was the same but investigated the impact of the mediator (Store Brand Equity) and its components (Perceived Quality and Brand Awareness) on the dependent variable (Store Brand Preference) (Sweet & Grace-Martin, 1999). Finally, the last regression analysis was conducted for Hypothesis 3, which analyzed the relationship between the independent variable (Private-label Product Assortment Shelf Proportion) and the mediator (Store Brand Equity) (Sweet & Grace-Martin, 1999).

Moving on, descriptive statistics was used to understand the respondents' perceptions of the store brands in question and their stimuli individually.

Lastly, to explain the mediation aspect of the model, a mediation analysis was conducted while using the PROCESS tool in SPSS. The test tried to explain if the mediator had an indirect effect on the relationship between the independent variable and the dependent variable. Based on (Hayes, 2012), the correct model to develop the analysis is PROCESS Model 4, which allows the verification of the effect of a mediator on the relationship between *X* and *Y*.

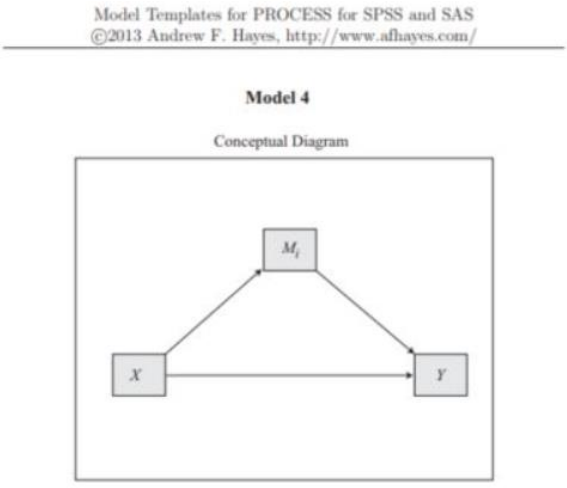

Figure 3 - PROCESS Model 4

To analyze the hypotheses formulated in this study, a systematic approach was employed in attributing values to the assortment proportion of each product category. In the survey, participants were presented with visual representations of product assortments through photographs of store shelves. A percentage scale was implemented to quantify the extent of private-label presence within each stimulus.

The scale ranged from low to high assortment, categorizing the proportion of shelf space or products dedicated to private-label brands. Specifically, a low assortment was defined as 0-33%, a moderate assortment ranged from 34-66%, and a high assortment represented 67-100%. This percentage-based scale provided a nuanced and quantifiable measure to consider the proportion of private-label offerings within each stimulus, ensuring a comprehensive analysis of the hypotheses.

Retailer	**Product**	**Percentage**	**Assortment Level**
Continente	Shower Gel	30%	Low
Continente	Milk	35%	Medium
Pingo Doce	Shower Gel	38%	Medium
Pingo Doce	Milk	25%	Low
Mercadona	Shower Gel	98%	High
Mercadona	Milk	86%	High
Lidl	Shower Gel	80%	High
Lidl	Milk	30%	Low

Table 2 - Assortment Proportion Value

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Results

4.1.1 Preparing the Data

Upon survey closure, the results were analyzed based on the total number of responses received - 360, of which 296 were considered valid after excluding unrealistic response times, non-compliance with prerequisites, and the identification of outliers.

Initial Observations									360
Failed Screeing Questions									19
Uncompleted Responses									31
Total									310
Stimuli	C1	C2	M1	M2	L1	L2	P1	P2	Total
Observations	39	39	34	39	38	40	40	41	310
Repeated IP's									
Failed Manipulation	3	4			1	3	2	1	14
Outliers									
Valid Observations	**36**	**35**	**34**	**39**	**37**	**37**	**38**	**40**	**296**

Table 3 - Data Collection

It was not possible to confirm via the IP that the responders did not respond twice, but since the multiple submissions toggle was switched on, it is confirmed that nobody was able to respond multiple times. This toggle verifies that each device can only respond once.

4.1.2 Sample Characterization

A total of 298 individuals participated in the study, offering crucial data regarding their behaviors and characteristics. The majority of participants (79.9%) reported consuming packaged milk inside their household in the preceding six months. By contrast, 20.1% reported not consuming packaged milk throughout this time frame.

When asked about their usage of shower gel products in the preceding six months, a substantial percentage of participants, 98.0%, affirmed their usage. Only a small fraction (2.0%) reported abstaining from using any throughout this time frame.

In terms of how old the participants were, the biggest group (43.6%) was between 18 and 24 years old. The other groups included those aged 25-34 (28.5%), 35-44 (7.4%), 45-54 (11.7%), 55-64 (7.0%), and 65 or older (1.7%).

When it comes to where participants were from, most of them (90.9%) were from Portugal. Other countries were represented, like Germany, Italy, the United Kingdom, Austria, and a few others.

Moving on to income levels, 32.6% of participants earned less than €20,000, 36.9% earned between €20,000 and €39,999, and 14.1% fell in the €40,000 - €59,999 range. Looking at occupation, more than half (52.0%) were working, 35.9% were students, 6.4% were unemployed, 2.3% were retired, and 3.4% responded “other.”

Education-wise, 39.3% had at least a Bachelor's degree, 38.6% had a Master's degree or higher, and 19.1% finished at least High School. Only 2.0% had a doctoral degree, and 1.0% had other educational backgrounds.

During the survey, a grand total of 298 stimuli were displayed, with each stimulus being linked to certain products. If participants responded affirmatively to any of the two control questions for both product categories (packaged milk and shower gel), they were subjected to a single randomized stimulus. If they responded negatively to both questions, they would discontinue their participation in the survey.

The presentation of stimuli was segmented based on product categories and store brands:

Packaged Milk Products:

- The brand "Continente" was presented 35 times, representing 11.7% of the acceptable responses.
- The "Mercadona" and "Lidl" brands had 39 and 37 presentations, respectively, accounting for 13.1% and 12.4% of the valid responses.
- The brand "Pingo Doce" had the highest occurrence rate, appearing 40 times, which accounted for 13.4% of the total.
- The milk stimulus was displayed around 37 times on average.

Shower Gel Products:

- The brand "Continente" was used on 36 occasions, accounting for 12.1% of the valid responses.
- The products "Mercadona" and "Lidl" had comparable frequencies, with each appearing 35 times, accounting for 11.7% of the total occurrences.

- The product "Pingo Doce" was presented 38 times, accounting for 12.8% of the total presentations.
- The shower gel stimulus was displayed an average of approximately 39 times.

The survey received a total of 298 valid responses, which allowed for a thorough comprehension of how participants interacted with different stimuli related to bottled milk and shower gel items. The revised mean presentation frequencies now precisely capture the degrees of participant involvement across various product categories and stimuli.

4.1.3 Measure Reliability Analysis

Although old literature proves that the constructs used in the survey pass the reliability tests, a new Cronbach's alpha test was created for the constructs that were constituted by more than 1 item.

Before running the test, some changes were made to accommodate the goal of the analysis. The items of the Store Brand Equity construct were merged to accommodate both the Perceived Quality and Brand Awareness at the same time. In order to confirm the effectiveness of this change, a reliability test was made for both items separately.

Perceived Quality reached a Cronbach's alpha of 0,843, confirming its positive reliability as expected due to the previous literature that was studied. In addition, a reliability test was also run for Brand Awareness, and it also confirmed its expectations as a Cronbach's alpha of 0,732 was reached.

Although both items separately passed the reliability test successfully, when they were merged, the Store Brand Equity construct got a Cronbach's alpha of 0,858. This proves that by making this change, the reliability of the analysis increased. In terms of the Store Brand Preference construct, it was also previously studied by literature that proved its reliability. In the case of this analysis, its Cronbach's alpha was 0,864.

In conclusion, it is possible to affirm that the reliability test was successful throughout. The following table shows the changes that were made and the subsequent effect on the reliability tests.

Constructs	# of items	Cronbach's alpha
Perceived Quality	3	0,843
Brand Awareness	4	0,732
Store Brand Equity	7	0,858
Store Brand Preference	4	0,864

Table 4 - Construct Reliability

In terms of multicollinearity, after running a diagnostic on SPSS, no signs were detected, as the value of the VIF stayed below 10 in all instances (as seen in the Appendix section).

4.1.4 Hypothesis Testing

4.1.4.1 Descriptive Statistics

In terms of the construct of Perceived Quality (PQ), Mercadona stands out as the store brand with the highest mean PQ rating at 3.84, suggesting that consumers associate this brand with a superior product quality experience. Lidl closely follows with a mean of 3.79, while Continente and Pingo Doce exhibit slightly lower mean ratings at 3.77 and 3.55, respectively.

Moving to Brand Awareness (BA), the means ranging from 3.60 to 3.78 across store brands suggest a relatively consistent level of awareness between consumers and these brands. The perceptions of both Mercadona and Lidl were above average, whereas both Continente and Pingo Doce demonstrated below-average results.

Store Brand Equity (SB Equity) reflects consumers' overall evaluation of a store brand, encompassing all the items observed through the perceived quality and brand awareness constructs. The results confirmed what was observed in the previous two constructs: Mercadona was highlighted by respondents as the superior store brand, followed by Lidl. Continente also scored above average, leaving Pingo Doce as the only below-average score.

Store Brand Preference (SB Preference) introduces a dimension of consumer choice and loyalty. The means fluctuate from 2.69 to 3.46, highlighting higher varying levels of preference across store brands. Mercadona emerges as the preferred brand with a mean of 3.46, while

Pingo Doce exhibits a lower mean of 2.69. The higher standard deviation score shows a higher dispersion in preferences.

Construct	Store Brand	n	min	max	mean	std. Deviation
PQ	Continente	71	1	5	3,77	0,75
	Mercadona	74	2	5	3,84	0,703
	Lidl	75	1	5	3,79	0,848
	Pingo Doce	78	1	5	3,55	0,649
	Average	-	-	-	**3,73**	**0,738**
BA	Continente	71	2	5	3,61	0,745
	Mercadona	74	2	5	3,72	0,693
	Lidl	75	2	5	3,66	0,75
	Pingo Doce	78	2	5	3,6	0,613
	Average	-	-	-	**3,65**	**0,738**
SB Equity	Continente	71	2	5	3,69	0,686
	Mercadona	74	2	5	3,78	0,653
	Lidl	75	2	5	3,72	0,733
	Pingo Doce	78	2	5	3,57	0,567
	Average	-	-	-	**3,68**	**0,661**
SB Preference	Continente	71	1	5	3	0,931
	Mercadona	74	1	5	3,46	0,848
	Lidl	75	1	5	3,16	0,946
	Pingo Doce	78	2	5	2,69	0,82
	Average	-	-	-	**3,07**	**0,926**

Table 5 - Descriptive Statistics Summary

4.1.4.2 Hypothesis Testing

H1: Product Assortment Proportion of Shelf positively impacts Store Brand Preference

Based on the ANOVA analysis, the regression model is statistically significant (p-value = 0.004). This indicates that the Assortment Proportion of Shelf is significantly related to the dependent variable (Store Brand Preference). Assortment Proportion of Shelf is individually significant (p-value = 0.004), reinforcing its importance as a predictor.

The Durbin-Watson statistic for the model (Assortment Proportion of Shelf predicting Store Brand Preference) is 1.821. It is important to note that a Durbin-Watson value between 1.5 and 2.5 is often considered acceptable, but values outside this range may warrant further investigation (Sweet & Grace-Martin, 1999).

The Pearson correlation coefficient between Store Brand Preference and Assortment Proportion of Shelf is 0.168. This positive correlation suggests a weak but positive linear relationship between the two variables.

The R-squared test measures the proportion of the variance in the dependent variable (Store Brand Preference) explained by the independent variable (Assortment Proportion of Shelf). In

this case, the R-squared is 0.028, indicating that only about 2.8% of the variability in Store Brand Preference is explained by the Assortment Proportion of Shelves.

The standardized coefficient (Beta) for the Assortment Proportion of the Shelf is 0.168. Beta provides a measure of the strength and direction of the relationship between the independent and dependent variables after standardizing them. In this context, the positive Beta suggests that a one-unit increase in the Assortment Proportion of Shelves corresponds to a 0.168 standard deviation increase in Store Brand Preference.

Overall Interpretation:

The statistically significant regression model, positive Beta, and positive correlation collectively suggest that an increase in the Assortment Proportion of Shelves is associated with a higher Store Brand Preference (Store Brand Preference). However, it's essential to acknowledge that the explained variance (R-squared) is relatively low, indicating that other factors not included in the model contribute to store brand preference.

Statistical Measure	**Value**
Regression Model Significance (ANOVA)	$p < 0.001$
Durbin-Watson Statistic	1.606
Pearson Correlation (r)	0.672
R-Squared	0.451
Beta (Standardized Coefficient)	0.890

Table 6 - H1 Analysis

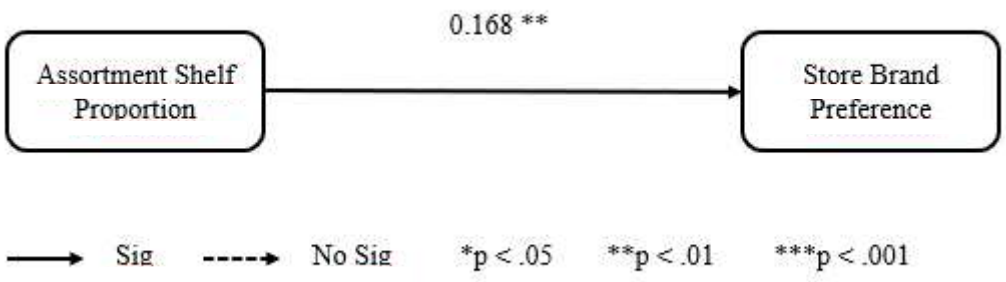

Figure 3 - H1 Visual Representation

H2: Store Brand Equity positively impacts Store Brand Preference.

In terms of significance, the regression model is highly significant ($p < 0.001$), indicating that Store Brand Equity significantly contributes to explaining SBP. Store Brand Equity is also individually significant ($p < 0.001$), underscoring its importance as a predictor of the model.

The Durbin-Watson statistic for the Store Brand Equity predicting Store Brand Preference model is 1.708 – meaning that there is no autocorrelation. The Pearson correlation coefficient between Store Brand Preference and Store Brand Equity is 0.721, indicating a strong positive linear relationship between the two variables.

The R-squared value is 0.520, suggesting that 52.0% of the variability in Store Brand Preference is explained by the model.

The standardized coefficient (Beta) for Store Brand Equity is 0.721, reflecting a substantial positive impact on Store Brand Preference.

Overall Interpretation:

The statistically significant model, high Beta, and strong correlation collectively affirm that Store Brand Equity significantly influences Store Brand Preference. The R-squared value signifies a robust explanatory power. The Durbin-Watson statistic falls within an acceptable range, enhancing confidence in the model's reliability.

Practically, the model suggests that changes in Store Brand Equity are associated with notable variations in Store Brand Preference. While the model is robust, acknowledging potential contributing factors beyond Store Brand Equity is essential for a comprehensive understanding of Store Brand Preference variability. Further investigation into additional variables is warranted for a more comprehensive predictive model.

Statistical Measure	**Value**
Model Significance (ANOVA)	$p < 0.001$
Durbin-Watson Statistic	1.708
Pearson Correlation (r)	0.721
R-Squared	0.520
Beta (Standardized Coefficient)	0.721

Table 7 - H2 Analysis

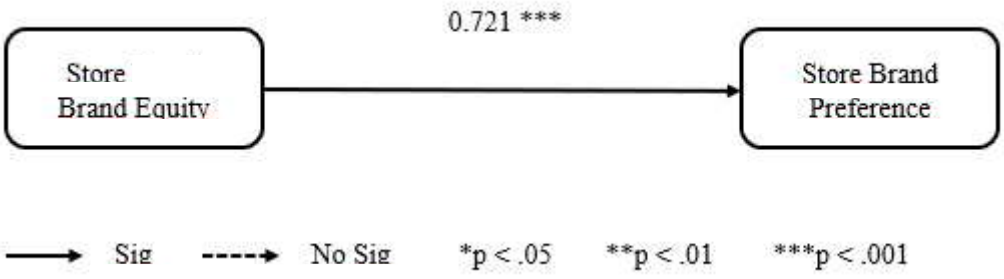

Figure 4 - H2 Visual Representation

H2a: Store Brand Perceived Quality positively impacts Store Brand Preference.

For H2a, the regression model is highly significant (p-value < 0.001), indicating that Store Brand Perceived Quality significantly relates to the dependent variable (SBP). As the previous variable, Store Brand Perceived Quality (Store Brand Perceived Quality) is also individually significant (p-value < 0.001.

The Durbin-Watson test follows the same path as the previous hypothesis, as it is also free of any autocorrelation (1.819).

The Pearson correlation coefficient between Store Brand Preference and Store Brand Perceived Quality is 0.659, suggesting a moderate positive linear relationship between the two variables.

The R-squared is 0.434, indicating that approximately 43.4% of the variability in Store Brand Preference is explained by Store Brand Perceived Quality. A high value but lower than Brand Equity as a whole.

The standardized coefficient (Beta) for Store Brand Perceived Quality is 0.659. A positive Beta suggests that a one-unit increase in Store Brand Perceived Quality corresponds to a 0.659 standard deviation increase in Store Brand Preference. Same as the R-squared, the value obtained is high but not as significant as the one from H2.

Overall Interpretation:

The highly significant regression model, positive Beta, and substantial correlation collectively suggest a strong association between Store Brand Perceived Quality and Store Brand Preference. The R-squared value indicates that a significant proportion of the variance in Store

Brand Preference is explained by Store Brand Perceived Quality. However, as with any model, it's important to consider additional factors not included in the analysis that may contribute to Store Brand Preference.

The Durbin-Watson statistic is reassuring, suggesting no significant autocorrelation in the residuals, ensuring the reliability of the regression model. Further investigation into potential contributing variables beyond Store Brand Perceived Quality may enhance the understanding of the factors influencing Store Brand Preference.

Statistical Measure	**Value**
Regression Model Significance (ANOVA)	$p < 0.001$
Durbin-Watson Statistic	1.819
Pearson Correlation (r)	0.659
R-Squared	0.434
Beta (Standardized Coefficient)	0.659

Table 8 - H2a Analysis

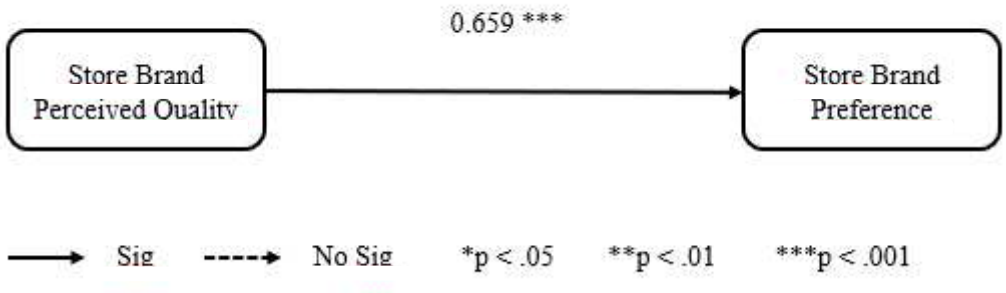

Figure 5 - H2a Visual Representation

H2b: Store Brand Awareness positively impacts Store Brand Preference.

The regression model indicates high significance with a p-value less than 0.001, which shows the significant impact of Store Brand Awareness on Store Brand Preference. This implies that any changes in Store Brand Awareness can be associated with changes in the dependent variable.

Furthermore, when examining the individual predictor significance, it becomes evident that Store Brand Awareness stands out on its own. The individual p-value, also less than 0.001, reinforces the importance of Store Brand Awareness as a predictor in the model. This emphasizes the robust influence that Store Brand Awareness exerts on shaping Store Brand Preference.

As it happened for H2 and H2a, the Durbin-Watson statistic found no signs of autocorrelation and showed a value of 1.606.

Considering the Pearson correlation coefficient (r) between Store Brand Preference and Store Brand Awareness, a substantial positive correlation of 0.672 was noted. This indicates a strong linear relationship between the two variables, further supporting the idea that heightened Store Brand Awareness is associated with an increased preference for the store brand.

The Coefficient of Determination (R-squared) for the model is 0.451, implying that approximately 45.1% of the variability in Store Brand Preference can be explained by Store Brand Awareness. Also, it is lower than the value presented by the Brand Equity variable but somewhat higher than the one presented by the last hypothesis.

Additionally, the Beta (standardized coefficient) for Store Brand Awareness is calculated as 0.890. This standardized coefficient signifies that a one-standard-deviation increase in Store Brand Awareness corresponds to a 0.890 standard deviation increase in Store Brand Preference. This value reinforces the strength and positive impact of Store Brand Awareness as a determinant of Store Brand Preference within the regression model, becoming the predictor with the highest Beta value within H2, H2a, and H2b.

Overall Interpretation:

The highly significant regression model, large beta coefficient, and strong positive correlation collectively indicate that an increase in Store Brand Awareness significantly and positively impacts Store Brand Preference. The model explains a substantial proportion of the variance in Store Brand Preference. However, it's essential to recognize that other unaccounted factors may contribute, and the practical impact should be considered.

The Durbin-Watson statistic supports the reliability of the model, and the results suggest that Store Brand Awareness is a key driver of Store Brand Preference.

Statistical Measure	Value
Regression Model Significance (ANOVA)	$p < 0.001$
Durbin-Watson Statistic	1.606
Pearson Correlation (r)	0.672
R-Squared	0.451
Beta (Standardized Coefficient)	0.890

Table 9 - H2b Analysis

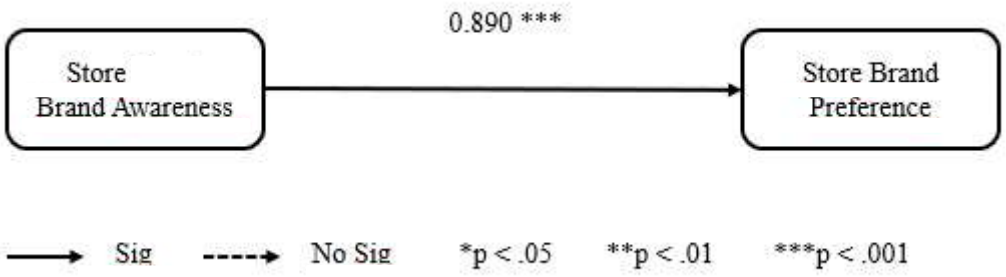

Figure 6 - H2b Visual Representation

H3: Product Assortment Proportion of Shelf positively impacts Store Brand Equity.

After analyzing the significance of the model through the (ANOVA), it is understood that the model is not statistically significant, with a p-value of 0.951. This result implies that the Assortment Proportion of Shelves does not make a significant contribution to explaining the variation observed in the dependent variable, Store Brand Equity.

In addition, when examining the individual predictor significance, the variable, considered on its own, is also not statistically significant, as indicated by a p-value of 0.061. This reinforces the notion that, in isolation, the Assortment Proportion of Shelves does not provide a statistically significant prediction for Store Brand Equity.

The Durbin-Watson statistic for the model, predicting Store Brand Equity based on Assortment Proportion of Shelf, is calculated as 2.225. With a value close to 2, this statistic suggests no significant autocorrelation (Sweet & Grace-Martin, 1999) in the residuals despite its lack of overall significance.

The Pearson correlation coefficient (r) between Store Brand Equity and Assortment Proportion of Shelf reveals a value very close to zero (0.004). This near-zero correlation implies an extremely weak and practically irrelevant relationship between the two variables.

The Coefficient of Determination (R-squared) for the model is close to zero (0.000), indicating that only a very small proportion of the variability in Store Brand Equity can be explained by the Assortment Proportion of Shelves.

Moreover, the standardized coefficient (Beta) for the Assortment Proportion of the Shelf is also very close to zero (0.004), and it is not statistically significant. This reinforces the idea that the variable does not have a meaningful impact on the variation observed in Store Brand Equity, strengthening the conclusion drawn from the overall lack of significance in the regression model.

Overall Interpretation:

The non-significant regression model, negligible Beta, and practically zero correlation collectively suggest that the Assortment Proportion of Shelves does not significantly contribute to explaining the variation in Store Brand Equity (Store Brand Equity). The low R-squared value indicates that the model's explanatory power is extremely limited.

Statistical Measure	**Value**
Regression Model Significance (ANOVA)	p = 0.951
Durbin-Watson Statistic	2.225
Pearson Correlation (r)	0.004
R-Squared	0.000
Beta (Standardized Coefficient)	0.004

Table 10 - H3 Analysis

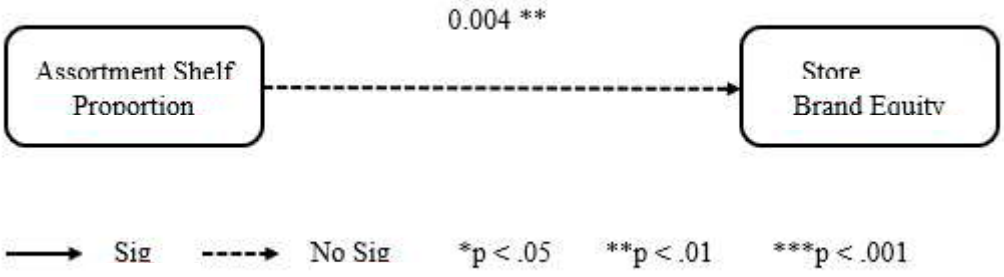

Figure 7 - H3 Visual Representation

H4: Store Brand Equity mediates the relationship between Product Assortment Proportion of Shelf and Store Brand Preference

The analysis conducted using the PROCESS macro in SPSS aimed to investigate the hypothesis that Store Brand Equity (Store Brand Equity) mediates the relationship between Assortment (Assortm) and Store Brand Preference (Store Brand Preference).

The key findings are summarized as follows:

The mediation model for Store Brand Equity (SBE_Av) did not reveal a significant relationship with Assortment (Assortm) ($p = 0.951$), and the standardized coefficient for Assortment in predicting Store Brand Equity was minimal (0.004). Consequently, the overall model fit was not deemed statistically significant.

Conversely, the model for Store Brand Preference (SBP_Av) demonstrated a significant relationship with both Assortment ($p < 0.001$) and Store Brand Equity ($p < 0.001$). The interaction between Assortment and Store Brand Equity did not reach statistical significance ($p = 0.123$).

The total effect model for Store Brand Preference (SBP_Av) indicated an overall significant relationship ($p = 0.004$). The direct effect of Assortment on Store Brand Preference was found to be significant (0.176, $p < 0.001$). However, the indirect effect through Store Brand Equity (SBE_Av) was not statistically significant (0.003).

Standardized coefficients highlighted the strength of relationships after standardizing variables. The standardized coefficient for the direct effect of Assortment on Store Brand Preference was 0.165, and for Store Brand Equity (SBE_Av), it was 0.721.

Bootstrap confidence intervals for the indirect effect through Store Brand Equity included zero, indicating non-significance.

Conclusion: The analysis does not support the hypothesis that Store Brand Equity mediates the relationship between Assortment and Store Brand Preference. While Assortment has a direct and significant impact on Store Brand Preference, the indirect effect through Store Brand Equity was not observed to be statistically significant. These results suggest that the relationship between Assortment and Store Brand Preference is primarily driven by direct effects rather than mediation through Store Brand Equity.

Statistical Measure	**Value**
Overall Model Fit	Not significant
Direct Effect of Assortment on Store Brand Preference	Significant (0.176, $p < 0.001$)
Indirect Effect through Store Brand Equity	Not statistically significant (0.003)

Table 11 - H4 Analysis

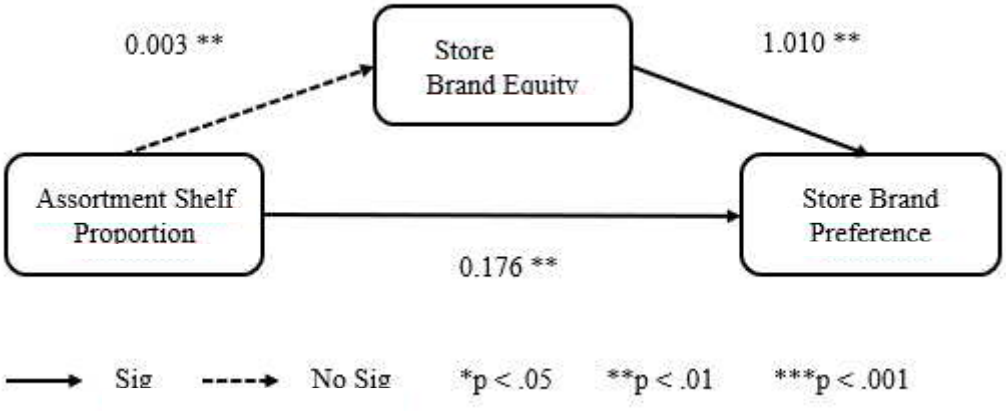

Figure 8 - H4 Visual Representation

CHAPTER 5: CONCLUSIONS AND LIMITATIONS

5.1 Main Findings & Conclusions

Retailer's store brand perceptions:

The analysis of Perceived Quality (PQ), Brand Awareness (BA), Store Brand Equity (SB Equity), and Store Brand Preference (SB Preference) among Mercadona, Lidl, Continente, and Pingo Doce reveals valuable insights into consumer perceptions and preferences within the retail landscape in Portugal.

Mercadona stands out as the leader in perceived quality, with the highest mean PQ rating of 3.84, suggesting that consumers associate this brand with a superior product quality experience. Lidl closely follows with a mean of 3.79, emphasizing a competitive positioning in terms of perceived quality. The consistent level of brand awareness across these store brands, with means ranging from 3.60 to 3.78, indicates that consumers are generally aware of these retail options, although Mercadona and Lidl outscore Continente and Pingo Doce in this regard. Furthermore, when examining store brand equity (the merge of the previous two items), Mercadona emerges as the superior brand, followed closely by Lidl, while Continente maintains an above-average score. Pingo Doce, however, lags behind, reflecting a lower overall evaluation by consumers.

In terms of Store Brand Preference, Mercadona once again takes the lead with a mean preference score of 3.46, showcasing a higher level of consumer loyalty and choice. On the contrary, Pingo Doce exhibits a lower mean preference of 2.69, indicating a comparatively weaker position in consumer preferences.

Research Question 1 (RQ1): How does the shelf proportion of private-label brands influence consumer preferences for store brands?

The study of this RQ delved into the intriguing dynamics between the arrangement of private-label brands on store shelves and consumer preferences for store brands. The findings underscore a meaningful relationship between the two. The statistical significance (p-value = 0.004) revealed by the analysis suggests that the composition of the shelf plays a role in shaping consumer inclinations toward store brands. A noteworthy positive correlation coefficient (0.168) implies that an increase in the variety of store brand offerings positively influences

consumer preferences. However, it's essential to acknowledge the limited explanatory power of the model, as indicated by the relatively low explained variance (R-squared) of 2.8%. This hints at the existence of other factors outside the model that contribute to Store Brand Preference.
In practical terms, the research suggests that optimizing shelf assortment can indeed impact consumer preferences for store brands. Shows that retailers can enhance the power of their store brand by making it a bigger aspect of their product assortment.

Research Question 2 (RQ2): What effect does the shelf proportion of private-labels have on the Store Brand Equity?

Contrary to initial expectations set by the Literature Review, the study reveals a lack of significant influence of the shelf proportion of private-labels on Store Brand Equity.
The statistical analysis, with a p-value of 0.951, does not support a meaningful relationship. The nearly inexistent correlation (0.004) shows the weak and irrelevant nature of this association. Moreover, the R-squared value approaching zero (0.000) indicates an extremely limited explanatory power of the model.
In conclusion, the shelf proportion of private-labels does not appear to be a substantial factor affecting Store Brand Equity based on the study's data.

Research Question 3 (RQ3): What is the effect that consumer private-label awareness and quality perception (separate and merged) have on brand preference?

This facet of the study explored the impact of consumer awareness and perceived quality on Store Brand Preference. The findings shed light on the pivotal role played by both variables. Notably, store brand awareness emerges as a standout factor with the highest correlation (0.672) among the variables analyzed, followed closely by perceived quality (0.659). When merging the two items, we reach an even higher correlation of 0.721, meaning that the effect becomes stronger when we use the Store Brand Equity construct as a whole. Collectively, these factors explain a significant portion of the variability in Store Brand Preference, ranging from 45.1% to 52.0%. Store Brand Equity, again, is the stronger factor that represents 52% of the variability.
In essence, the study suggests that fostering consumer awareness and maintaining perceived quality are crucial strategies for influencing Store Brand Preference. However, it is important to note that retailers should focus on Store Brand Equity as a whole instead of paying more attention to just one of its components.

5.2 Managerial / Academic Implications

5.2.1 Managerial Implications:

The insights derived from this study bear significant managerial implications for retailers operating in the competitive landscape of Portugal's retail sector. Firstly, the research underscores the strategic importance of optimizing shelf assortments to elevate the prominence of store brands. By increasing the variety of store brand offerings, retailers can positively influence consumer preferences, fostering greater brand loyalty and choice.

Additionally, the emphasis on store brand awareness emerges as a critical component for success, particularly for retailers seeking to compete with industry leaders like Mercadona and Lidl. Investments in marketing strategies, including advertising, promotions, and in-store displays, can play a pivotal role in enhancing consumer familiarity and preference. Strengthening store brand awareness is identified as a key driver for gaining a competitive edge in the market.

Quality maintenance and improvement are highlighted as essential aspects of influencing Store Brand Preferences. Consistency in delivering high-quality store brand products, coupled with transparent communication about product attributes, is emphasized. Retail managers are encouraged to focus on building a positive perception of store brand quality, thereby positively impacting consumer preferences.

Furthermore, the study advocates for a comprehensive approach to Store Brand Equity. Rather than isolating efforts on individual components, retailers are advised to consider the holistic nature of Store Brand Equity, encompassing both awareness and perceived quality. Strategic initiatives aimed at enhancing overall Store Brand Equity are deemed more effective in influencing consumer preferences.

5.2.2 Academic Implications:

From an academic perspective, this research contributes valuable insights to the existing literature on consumer behavior within the retail context, particularly in Portugal. The study's findings provide a nuanced understanding of the relationships between shelf assortment, Store Brand Equity, and consumer preferences.

The methodological limitations identified, particularly the relatively low level of variance explained, suggest considerations for future research. Researchers should be encouraged to explore additional variables and use more comprehensive methodologies to improve the explanatory power of models in similar contexts.

In addition, academic researchers are invited to explore cross-cultural applications and investigate the generalizability of the findings to other international contexts. Comparisons across different cultural and market settings can contribute to a broader understanding of the factors that influence Store Brand Preferences.

In summary, this research not only provides actionable insights for retail managers in Portugal but also lays the groundwork for future academic inquiry into the multifaceted relationships between shelf assortment, Store Brand Equity, and consumer preferences within the broader retail landscape.

5.3 Limitations and Further Research

Despite the valuable insights gained from this study, it is important to acknowledge several limitations that may impact the generalizability and robustness of the findings:

In terms of the sample characteristics and overall generalization, the analysis study focused on a specific sample in Portugal, exploring consumer perceptions and preferences within two product categories—bottled milk and shower gel. Consequently, the findings may not fully represent diverse consumer groups or be entirely applicable to other product categories or geographic locations.

Moving on to the survey methodology, it can lead to things such as self-reporting biases and subjective interpretations that can influence participants' responses. Also, both the assortment sample and the timing aspect of the study are limited, and longitudinal studies would be necessary to capture changes and trends over an extended period.

Furthermore, regarding the analysis, the model assessing the impact of shelf proportion on Store Brand Preference demonstrated a relatively low explained variance (R-squared of 2.8%) within the context of bottled milk and shower gel, meaning that the generalizability of this finding to other product categories may not be accurate. The mediation analysis examining the relationship between shelf proportion, Store Brand Equity, and Store Brand Preference may

also be influenced by the specific product categories chosen. The complexity of mediation models warrants further investigation, especially when applied to different product categories.

Finally, the study concentrated on the retail landscape within the grocery sector in Portugal. Extending the main findings to other industries or diverse retail contexts requires caution, as consumer perceptions and preferences may differ across product categories and market segments. As well as the fact that the analysis assumes homogeneity in consumer perceptions within each store brand category for milk and shower gel. However, individual preferences and perceptions may exhibit greater variability in other product categories.

To address these limitations and expand on the insights gained, future research routes could include:

Conducting comparative studies across various product categories to explore whether the relationships identified—especially those related to assortment shelf proportion and brand equity—are consistent or differ based on the nature of the products.

Extending research to include a broader range of product types within the retail landscape to better understand the nuances of consumer perceptions and preferences across diverse product categories.

Complementing quantitative findings with targeted qualitative research (interviews, focus groups, etc..) for each product category to uncover specific motivations, attitudes, and perceptions shaping consumer behaviors within those categories. But also creating segmentation analysis for each product category to identify unique consumer segments with varying preferences and perceptions, allowing for more tailored marketing and product strategies.

Investigating factors specific to each product category that may influence or mediate the relationships between shelf assortment, brand equity, and consumer preferences.

Running international comparative studies considering various product categories to assess how cultural and contextual factors impact consumer perceptions and preferences on a global scale.

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APPENDICES

Appendix 1 - Survey Questionnaire

Introduction

Thank you for participating in this survey on store brand preferences in the packaged milk and shower gel product categories. Your insights are invaluable in helping us understand the factors that influence consumers' preferences for store brands.

This survey is part of a research project investigating the impact of private label brand assortment on store brand preference in certain product categories.

Please take a moment to provide your feedback and opinions.

Control Questions

Have you drank milk at home in the past six months?

- ○ Yes
- ○ No

Please indicate which store brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

Have you used any shower gel products in the past six months?

- ○ Yes
- ○ No

Stimuli + Questions C1

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Continente's own brand is of high quality	○	○	○	○	○
Continente's own brand is trustworthy	○	○	○	○	○
Continente's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell the difference between Continente's own brand and other brands in the store	○	○	○	○	○
I associate the products from Continente's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buyers of Continente's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product that belongs to Continente's own brand gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Continente's own brand is appealing to me	○	○	○	○	○
I prefer Continente's own brand to others of its type	○	○	○	○	○
I prefer Continente's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○

Please indicate which store brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In general, I prefer Continente's own brand	○	○	○	○	○

C2

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Continente's own brand is of high quality	○	○	○	○	○
Continente's own brand is trustworthy	○	○	○	○	○
Continente's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Continente's own brand from other brands in the store	○	○	○	○	○
I associate the products Continente's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buyers of Continente's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product that belongs to Continente's own brand gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Continente's own brand is appealing to me	○	○	○	○	○
I prefer Continente's own brand to others of its type	○	○	○	○	○
I prefer Continente's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○

Please indicate which store brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In general, I prefer Continente's own brand	○	○	○	○	○

M1

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Mercadona's own brand is of high quality	○	○	○	○	○
Mercadona's own brand is trustworthy	○	○	○	○	○
Mercadona's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Mercadona's own brand from other brands in the store	○	○	○	○	○
I associate the products from Mercadona's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buyers of Mercadona's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product that belongs to Mercadona's own brand gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Mercadona's own brand is appealing to me	○	○	○	○	○
I prefer Mercadona's own brand to others of its type	○	○	○	○	○
I prefer Mercadona's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○

Please indicate which store brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In general, I prefer Mercadona's own brand	○	○	○	○	○

M2

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Mercadona's own brand is of high quality	○	○	○	○	○
Mercadona's own brand is trustworthy	○	○	○	○	○
Mercadona's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Mercadona's own brand from other brands in the store	○	○	○	○	○
I associate the products from Mercadona's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buyers of Mercadona's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product brand that belongs to Mercadona gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Mercadona's own brand is appealing to me	○	○	○	○	○
I prefer Mercadona's own brand to others of its type	○	○	○	○	○
I prefer Mercadona's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○

Please indicate which store brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In general, I prefer Mercadona's own brand	○	○	○	○	○

L1

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Lidl's own brand is of high quality	○	○	○	○	○
Lidl's own brand is trustworthy	○	○	○	○	○
Lidl's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Lidl's own brand from other brands in the store	○	○	○	○	○
I associate the products from Lidl's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buyers of the Lidl's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product brand that belongs to Lidl gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Lidl's own brand is appealing to me	○	○	○	○	○
I prefer Lidl's own brand to others of its type	○	○	○	○	○
I prefer Lidl's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○
In general, I prefer Lidl's own brand	○	○	○	○	○

○ Pingo Doce
○ Lidl
○ Mercadona

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Lidl's own brand is of high quality	○	○	○	○	○
Lidl's own brand is trustworthy	○	○	○	○	○
Lidl's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Lidl's own brand from other brands in the store	○	○	○	○	○

L2

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

Please indicate which store brand is featured in the photo above:

○ Continente

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I associate the products from Lidl's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○
Buyers of Lidl's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product brand that belongs to Lidl gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Lidl's own brand is appealing to me	○	○	○	○	○
I prefer Lidl's own brand to others of its type	○	○	○	○	○
I prefer Lidl's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In general, I prefer Lidl's own brand	○	○	○	○	○

P1

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

Please indicate which brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Pingo Doce's own brand is of high quality	○	○	○	○	○
Pingo Doce's own brand is trustworthy	○	○	○	○	○
Pingo Doce's own brand gives me the result I am looking for	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I associate the products from Pingo Doce's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○
Buyers of Pingo Doce's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○
Buying a product brand that belongs to Pingo Doce gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Pingo Doce's own brand from other brands in the store	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Pingo Doce's own brand is appealing to me	○	○	○	○	○
I prefer Pingo Doce's own brand to others of its type	○	○	○	○	○

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I prefer Pingo Doce's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○
In general, I prefer Pingo Doce's own brand	○	○	○	○	○

P2

Please observe the following assortment of products.

During the survey, you will be asked about your opinion on the product brand assortment. Therefore, please take your time observing the image.

(Note that the brand in question is highlighted with a red square)

Please indicate which brand is featured in the photo above:

- ○ Continente
- ○ Pingo Doce
- ○ Lidl
- ○ Mercadona

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Pingo Doce's own brand is of high quality	○	○	○	○	○
Pingo Doce's own brand is trustworthy	○	○	○	○	○
Pingo Doce's own brand gives me the result I am looking for	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can tell Pingo Doce's own brand from other brands in the store	○	○	○	○	○
I associate the products from Pingo Doce's own brand with certain positive characteristics (e.g. good price or good quality)	○	○	○	○	○
Buyers of Pingo Doce's own brand are people who "know how to shop" (who shop smartly, in your opinion)	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Buying a product brand that belongs to Pingo Doce gives me trust	○	○	○	○	○

Please indicate your level of agreement with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel that Pingo Doce's own brand is appealing to me	○	○	○	○	○
I prefer Pingo Doce's own brand to others of its type	○	○	○	○	○
I prefer Pingo Doce's own brand if everything else is equal (accessibility, price, etc..)	○	○	○	○	○
In general, I prefer Pingo Doce's own brand	○	○	○	○	○

Demo

What is your age?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 or older

What best describes your occupation over the last 3 months:

- Unemployed
- Employed
- Retired
- Student
- Other

What is your nationality?

What is your education level?

- High School or equivalent
- Bachelor's degree or equivalent
- Master's degree or equivalent
- Doctoral degree
- Other

What is your yearly net household income?

- Less than 20.000€
- €20,000 - €39,999
- €40,000 - €59,999
- €60,000 - €79,999
- €80,000 - €99,999
- €100,000 - €119,999
- €120,000 or more

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Appendix 2 - Descriptive Statistics

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
PQContinente	71	1	5	3,77	,750
BAContinente	71	2	5	3,61	,745
SBPContinente	71	1	5	3,00	,931
SBEContinente	71	2	5	3,69	,686
N válido (de lista)	71				

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
PQMercadona	74	2	5	3,84	,703
BAMercadona	74	2	5	3,72	,693
SBPMercadona	74	1	5	3,46	,848
SBEMercadona	74	2	5	3,78	,653
N válido (de lista)	74				

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
PQLidl	75	1	5	3,79	,820
BALidl	75	2	5	3,66	,750
SBPLidl	75	1	5	3,16	,946
SBELidl	75	2	5	3,72	,733
N válido (de lista)	75				

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
PQPingoDoce	78	1	5	3,55	,649
BAPingoDoce	78	2	5	3,60	,613
SBPPingoDoce	78	1	5	2,69	,820
SBEPingoDoce	78	2	5	3,57	,567
N válido (de lista)	78				

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
SBP Average	298	1	5	3,07	,926
SBE Average	298	2	5	3,68	,661
SBA Average	298	2	5	3,65	,699
SBPQ Average	298	1	5	3,73	,738
N válido (de lista)	298				

Estatísticas Descritivas

	N	Mínimo	Máximo	Média	Desvio padrão
Continente_Av	71	1	5	3,35	,749
Mercadona_Av	74	2	5	3,62	,710
Lidl_Av	75	1	5	3,44	,791
PingoDoce_Av	78	1	5	3,13	,625
N válido (de lista)	0				

Appendix 3 - H1

Estatística Descritiva

	Média	Erro Desvio	N
SBP Average	3,07	,926	298
Assortment Proportion of Shelf	2,00	,867	298

Correlações

		SBP Average	Assortment Proportion of Shelf
Correlação de Pearson	SBP Average	1,000	,168
	Assortment Proportion of Shelf	,168	1,000
Sig. (1 extremidade)	SBP Average	.	,002
	Assortment Proportion of Shelf	,002	.
N	SBP Average	298	298
	Assortment Proportion of Shelf	298	298

Variáveis Inseridas/Removidas[a]

Modelo	Variáveis inseridas	Variáveis removidas	Método
1	Assortment Proportion of Shelf[b]	.	Inserir

a. Variável Dependente: SBP Average

b. Todas as variáveis solicitadas inseridas.

Resumo do modelo

					Estatísticas de mudança				
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Mudança F	df1	df2	Sig. Mudança F
1	,168[a]	,028	,025	,915	,028	8,546	1	296	,004

a. Preditores: (Constante), Assortment Proportion of Shelf

Resumo do modelo[b]

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Durbin-Watson
1	,168[a]	,028	,025	,915	1,821

a. Preditores: (Constante), Assortment Proportion of Shelf

b. Variável Dependente: SBP Average

ANOVA[a]

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	7,149	1	7,149	8,546	,004[b]
	Resíduo	247,602	296	,836		
	Total	254,751	297			

a. Variável Dependente: SBP Average

b. Preditores: (Constante), Assortment Proportion of Shelf

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	2,715	,134		20,315	<,001		
	Assortment Proportion of Shelf	,179	,061	,168	2,923	,004	1,000	1,000

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância	
				(Constante)	Assortment Proportion of Shelf
1	1	1,918	1,000	,04	,04
	2	,082	4,838	,96	,96

a. Variável Dependente: SBP Average

Appendix 4 - H2

Estatística Descritiva

	Média	Erro Desvio	N
SBP Average	3,07	,926	298
SBE Average	3,68	,661	298

Correlações

		SBP Average	SBE Average
Correlação de Pearson	SBP Average	1,000	,721
	SBE Average	,721	1,000
Sig. (1 extremidade)	SBP Average	.	<,001
	SBE Average	,000	.
N	SBP Average	298	298
	SBE Average	298	298

Variáveis Inseridas/Removidas[a]

Modelo	Variáveis inseridas	Variáveis removidas	Método
1	SBE Average[b]	.	Inserir

a. Variável Dependente: SBP Average

b. Todas as variáveis solicitadas inseridas.

Resumo do modelo

					Estatísticas de mudança			
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Mudança F	df1	df2	Sig. Mudança F
1	,721[a]	,520	,518	,643	,520	320,674	1	296	<,001

a. Preditores: (Constante), SBE Average

Resumo do modelo[b]

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Durbin-Watson
1	,721[a]	,520	,518	,643	1,708

a. Preditores: (Constante), SBE Average

b. Variável Dependente: SBP Average

ANOVA[a]

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	132,472	1	132,472	320,674	<,001[b]
	Resíduo	122,279	296	,413		
	Total	254,751	297			

a. Variável Dependente: SBP Average

b. Preditores: (Constante), SBE Average

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	-,649	,211		-3,074	,002		
	SBE Average	1,011	,056	,721	17,907	<,001	1,000	1,000

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância	
				(Constante)	SBE Average
1	1	1,984	1,000	,01	,01
	2	,016	11,257	,99	,99

a. Variável Dependente: SBP Average

Appendix 5 - H2a

Estatística Descritiva

	Média	Erro Desvio	N
SBP Average	3,07	,926	298
SBPQ Average	3,73	,738	298

Correlações

		SBP Average	SBPQ Average
Correlação de Pearson	SBP Average	1,000	,659
	SBPQ Average	,659	1,000
Sig. (1 extremidade)	SBP Average	.	<,001
	SBPQ Average	,000	.
N	SBP Average	298	298
	SBPQ Average	298	298

Variáveis Inseridas/Removidas[a]

Modelo	Variáveis inseridas	Variáveis removidas	Método
1	SBPQ Average[b]	.	Inserir

a. Variável Dependente: SBP Average

b. Todas as variáveis solicitadas inseridas.

Resumo do modelo

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Estatísticas de mudança			
					Mudança de R quadrado	Mudança F	df1	df2	Sig. Mudança F
1	,659[a]	,434	,432	,698	,434	226,741	1	296	<,001

a. Preditores: (Constante), SBPQ Average

Resumo do modelo[b]

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Durbin-Watson
1	,659[a]	,434	,432	,698	1,819

a. Preditores: (Constante), SBPQ Average

b. Variável Dependente: SBP Average

ANOVA[a]

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	110,499	1	110,499	226,741	<,001[b]
	Resíduo	144,252	296	,487		
	Total	254,751	297			

a. Variável Dependente: SBP Average

b. Preditores: (Constante), SBPQ Average

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados	t	Sig.	Estatísticas de colinearidade	
		B	Erro Erro	Beta			Tolerância	VIF
1	(Constante)	-,014	,209		-,068	,946		
	SBPQ Average	,827	,055	,659	15,058	<,001	1,000	1,000

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância	
				(Constante)	SBPQ Average
1	1	1,981	1,000	,01	,01
	2	,019	10,240	,99	,99

a. Variável Dependente: SBP Average

Appendix 6 - H2b

Estatística Descritiva

	Média	Erro Desvio	N
SBP Average	3,07	,926	298
SBA Average	3,65	,699	298

Correlações

		SBP Average	SBA Average
Correlação de Pearson	SBP Average	1,000	,672
	SBA Average	,672	1,000
Sig. (1 extremidade)	SBP Average	.	<,001
	SBA Average	,000	.
N	SBP Average	298	298
	SBA Average	298	298

Variáveis Inseridas/Removidas[a]

Modelo	Variáveis inseridas	Variáveis removidas	Método
1	SBA Average[b]	.	Inserir

a. Variável Dependente: SBP Average

b. Todas as variáveis solicitadas inseridas.

Resumo do modelo

					Estatísticas de mudança			
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Mudança F	df1	df2	Sig. Mudança F
1	,672[a]	,451	,449	,687	,451	243,336	1	296	<,001

a. Preditores: (Constante), SBA Average

Resumo do modelo[b]

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Durbin-Watson
1	,672[a]	,451	,449	,687	1,606

a. Preditores: (Constante), SBA Average

b. Variável Dependente: SBP Average

ANOVA[a]

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	114,938	1	114,938	243,336	<,001[b]
	Resíduo	139,813	296	,472		
	Total	254,751	297			

a. Variável Dependente: SBP Average

b. Preditores: (Constante), SBA Average

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	-,171	,212		-,806	,421		
	SBA Average	,890	,057	,672	15,599	<,001	1,000	1,000

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância (Constante)	Proporções de variância SBA Average
1	1	1,982	1,000	,01	,01
	2	,018	10,543	,99	,99

a. Variável Dependente: SBP Average

Appendix 7 - H3

Estatística Descritiva

	Média	Erro Desvio	N
SBE Average	3,68	,661	298
Assortment Proportion of Shelf	2,00	,867	298

Correlações

		SBE Average	Assortment Proportion of Shelf
Correlação de Pearson	SBE Average	1,000	,004
	Assortment Proportion of Shelf	,004	1,000
Sig. (1 extremidade)	SBE Average	.	,476
	Assortment Proportion of Shelf	,476	.
N	SBE Average	298	298
	Assortment Proportion of Shelf	298	298

Variáveis Inseridas/Removidas[a]

Modelo	Variáveis inseridas	Variáveis removidas	Método
1	Assortment Proportion of Shelf[b]	.	Inserir

a. Variável Dependente: SBE Average

b. Todas as variáveis solicitadas inseridas.

Resumo do modelo

					Estatísticas de mudança				
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Mudança F	df1	df2	Sig. Mudança F
1	,004[a]	,000	-,003	,662	,000	,004	1	296	,951

a. Preditores: (Constante), Assortment Proportion of Shelf

Resumo do modelo[b]

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Durbin-Watson
1	,004[a]	,000	-,003	,662	2,225

a. Preditores: (Constante), Assortment Proportion of Shelf

b. Variável Dependente: SBE Average

ANOVA[a]

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	,002	1	,002	,004	,951[b]
	Resíduo	129,677	296	,438		
	Total	129,679	297			

a. Variável Dependente: SBE Average

b. Preditores: (Constante), Assortment Proportion of Shelf

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	3,678	,097		38,029	<,001		
	Assortment Proportion of Shelf	,003	,044	,004	,061	,951	1,000	1,000

a. Variável Dependente: SBE Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância	
				(Constante)	Assortment Proportion of Shelf
1	1	1,918	1,000	,04	,04
	2	,082	4,838	,96	,96

a. Variável Dependente: SBE Average

Appendix 8 - H4

```
 Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

        Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
   Y  : SBP_Av
   X  : Assortm
   M  : SBE_Av

Sample
Size:  298

**************************************************************************
OUTCOME VARIABLE:
 SBE_Av

Model Summary
        R      R-sq       MSE         F       df1       df2         p
     ,004      ,000      ,438      ,004     1,000   296,000      ,951

Model
             coeff         se          t          p       LLCI       ULCI
constant     3,678       ,097     38,029       ,000      3,488      3,869
```

```
Assortm       ,003       ,044       ,061       ,951      -,085       ,090

Standardized coefficients
           coeff
Assortm       ,004

************************************************************************
OUTCOME VARIABLE:
 SBP_Av

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      ,740       ,547       ,391   178,264     2,000   295,000       ,000

Model
             coeff         se         t         p       LLCI       ULCI
constant      -,999       ,222     -4,508       ,000     -1,436      -,563
Assortm        ,176       ,042      4,211       ,000       ,094       ,259
SBE_Av        1,010       ,055     18,391       ,000       ,902      1,118

Standardized coefficients
           coeff
Assortm       ,165
SBE_Av        ,721

Test(s) of X by M interaction:
         F       df1       df2         p
     2,389     1,000   294,000       ,123

************************** TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 SBP_Av

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      ,168       ,028       ,836     8,546     1,000   296,000       ,004

Model
             coeff         se         t         p       LLCI       ULCI
constant      2,715       ,134     20,315       ,000     2,452      2,978
Assortm        ,179       ,061      2,923       ,004       ,059       ,300

Standardized coefficients
           coeff
Assortm       ,168


************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
    Effect         se         t         p       LLCI       ULCI       c_cs
      ,179       ,061      2,923       ,004       ,059       ,300       ,168

Direct effect of X on Y
    Effect         se         t         p       LLCI       ULCI      c'_cs
      ,176       ,042      4,211       ,000       ,094       ,259       ,165

Indirect effect(s) of X on Y:
          Effect    BootSE   BootLLCI   BootULCI
SBE_Av        ,003       ,046      -,091       ,092
```

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
SBE_Av	,003	,043	-,086	,085

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

------ END MATRIX -----

Appendix 9 - Multicolinearity

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	-,999	,222		-4,508	<,001		
	Assortment Proportion of Shelf	,176	,042	,165	4,211	<,001	1,000	1,000
	SBE Average	1,010	,055	,721	18,391	<,001	1,000	1,000

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

Modelo	Dimensão	Autovalor	Índice de condição	Proporções de variância		
				(Constante)	Assortment Proportion of Shelf	SBE Average
1	1	2,871	1,000	,00	,02	,00
	2	,114	5,025	,03	,93	,06
	3	,015	13,855	,97	,05	,94

a. Variável Dependente: SBP Average

Coeficientes[a]

Modelo		Coeficientes não padronizados		Coeficientes padronizados			Estatísticas de colinearidade	
		B	Erro Erro	Beta	t	Sig.	Tolerância	VIF
1	(Constante)	-1,002	,222		-4,516	<,001		

	Assortment Proportion of Shelf	,177	,042	,166	4,221	<,001	,999	1,001
	SBPQ Average	,471	,069	,375	6,811	<,001	,508	1,970
	SBA Average	,539	,073	,407	7,384	<,001	,508	1,970

a. Variável Dependente: SBP Average

Diagnóstico de colinearidade[a]

				Proporções de variância			
Modelo	Dimensão	Autovalor	Índice de condição	(Constante)	Assortment Proportion of Shelf	SBPQ Average	SBA Average
1	1	3,838	1,000	,00	,01	,00	,00
	2	,132	5,389	,01	,90	,02	,01
	3	,019	14,137	,99	,09	,16	,10
	4	,011	18,822	,00	,00	,82	,88

a. Variável Dependente: SBP Average