

A Work Project, presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics.

The key factors shaping dog food purchases in Portugal

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The Dog Food Market in Portugal: A
Literature Review on Market Analysis
and Research Questions

Abstract of the individual work

My personal section focuses on the current state of the Portuguese dog food market, the main brands and the factors that influence consumers' purchasing decisions.

First, an overview of the market. The global pet food market has experienced significant growth in recent years. In 2023, the total value of the global market is about \$120.87 billion and is expected to reach \$193.65 billion by 2032, with an average annual growth rate of 5.45%. The Portuguese pet food market is also showing a growth trend, with a market value of \$833 million in 2023 and is expected to reach \$1.097 billion by 2029, with an average annual growth rate of 4.7%. 72% of households in Portugal own at least one pet, well above the global average of 58%. The expansion of the pet food market is mainly driven by the increasing emphasis of pet owners on pet nutrition, especially the growing demand for high-quality, specialized pet food.

Second, I study the impact of the COVID-19 pandemic. Pet adoptions have surged during the pandemic, with many families choosing to keep pets for emotional support during quarantines, a trend that is common across the globe. In North America and the UK in particular, the rise of remote working has led to an increase in pet adoption as people have more time to care for their pets. Portugal has also seen a significant increase in pet adoption demand, particularly for dogs and cats.

Third, I introduced the pet humanization trend. The humanization of pets (that is, treating pets as family members) is driving the demand for high-quality pet food. Many pet owners are increasingly concerned about their pets' health and are willing to pay a premium for natural, organic, grain-free, high-end pet food. In addition, consumers are also paying more attention to customized and personalized pet food, such as products tailored to the different life cycles and health conditions of pets. The application of digital technology and e-commerce has also enabled pet food manufacturers to provide personalized diet solutions to consumers.

Fourth, I introduced the health and sustainability of pet food. As pet owners' concern for their pets' health continues to increase, the demand for natural, organic and functional pet foods continues to rise. In particular, issues such as digestive health, immune system and weight management are driving the demand for probiotic-rich and prebiotic pet foods. Younger consumer groups, such as millennials and Gen Z, are more receptive to these new products, and they are more likely to choose pet food with good quality, transparency and ethical production methods.

Fifth, I have studied the market competition of pet food. The pet food market is becoming increasingly competitive with many multinational companies dominating this market. Companies such as Mars Pet Foods have secured their market share with product diversity and strong marketing strategies. Younger consumers are less loyal to brands and pay more attention to product quality and transparency of the production process, which puts higher demands on traditional pet food brands. Brands need to attract and retain consumers through innovative product and marketing strategies.

I then analyzed several of the major brands we studied: Advance, PorSi, Purina, and Royal Canin. Advance focuses on providing high-end nutritional products and is committed to providing scientific and professional nutritional support for pets through cooperation with research centers and universities. Advance's products are tailored to your pet's age, weight and other characteristics, with a focus on sustainability and social responsibility. PorSi is an Intermarche supermarket brand that focuses on low-cost, basic pet foods that meet the basic nutritional needs of most pets. Despite the lower price, it lacks organic ingredients and sustainability features. As a premium brand, Purina offers scientifically formulated pet food with an emphasis on providing high-quality nutritional support through scientific research. Purina's products cover the different life cycle and health needs of pets, with a focus on high-quality raw materials. Royal Canin specializes in providing customized nutrition solutions for

pets, providing personalized diet solutions according to the pet's breed, health status and other factors. The brand emphasizes scientific research and high-quality nutrition.

Finally, I analyzed the application of sustainability in pet food. With consumer concerns about environmental protection and sustainability, the importance of sustainable practices in pet food production is increasing. More and more pet food companies are committed to using environmentally friendly raw materials and packaging to reduce resource consumption in the production process. In addition, pet food companies are starting to focus on reducing the carbon footprint of the production process and experimenting with alternative protein sources, such as microalgae.

However, despite the many potential, there are still challenges to advancing sustainable development. Some consumers have a low acceptance of new raw materials and are not fully aware of the sustainability implications of their consumption behavior. Therefore, the joint efforts of business, government and consumers are essential to promote the sustainable development of the pet food industry.

This paper presents five research questions to delve into the decision-making process of consumers when purchasing dog food in the Portuguese market. Research questions include:

1. What are the attributes that Portuguese consumers most value in dog food?
2. What are the preferences of Portuguese consumers regarding attributes they value the most in dog food?
3. How do consumers perceive the scientific and developmental aspects of each brand's dog food production?
4. How do consumers perceive each brand's essence, reputation, and emotional appeal?
5. How do demographic factors such as age, occupation, and income affect the willingness to pay a premium for sustainable dog food products?

These questions are designed to help brands develop more targeted marketing strategies and provide theoretical support for future research.

Abstract of the group work

The group work provides a comprehensive analysis of the pet food market in Portugal, with a particular focus on the factors influencing consumers' preferences and purchasing decisions for dog food. The research identifies key attributes such as price, health benefits, organic ingredients, sustainability, and product availability, and explores how these factors shape consumer behavior.

This part utilizes a mixed-methods approach, combining Perceptual Mapping and Conjoint Analysis, to understand how consumers perceive different brands and the weight they assign to various product features when making decisions. Through Perceptual Mapping, the analysis shows how brands like Advance, PorSi, Purina, and Royal Canin are positioned in the market based on consumer perceptions of attributes such as innovation, credibility, and attractiveness.

The importance of sustainability is also a significant theme in the research. While consumers show a preference for sustainable products, especially those with biodegradable or recyclable packaging, their willingness to pay a premium for such products remains cautious. Price continues to be the most important factor influencing consumer choices, followed by health benefits, organic ingredients, and the availability of products.

In terms of demographics, younger consumers, full-time workers, and higher-income individuals tend to be more willing to pay extra for sustainable options. However, these factors are not the sole determinants, as price sensitivity remains a key consideration for many consumers.

Based on these findings, the study offers strategic recommendations for brands. Royal Canin should continue to focus on the premium market, emphasizing its scientific formulas and

customized products for specific pet health needs. Advance can strengthen its market position by increasing product innovation and boosting its credibility. Purina should highlight its health benefits and sustainability efforts in marketing, while PorSi can focus on its price advantage while improving the nutritional quality of its products.

Finally, this part notes some limitations, including the reliance on online surveys and the narrow scope of brands studied. Future research could further explore the emotional and psychological factors influencing consumer decisions and track changes in consumer behavior over time.

In conclusion, the Portuguese pet food market is driven by a complex set of consumer preferences, with sustainability, health benefits, and price being key determinants in purchasing decisions. Brands that can balance these factors effectively and innovate within the market are likely to stand out.

Group part

(Ana Filipa Abreu Ribeiro + Ekaterina Kiounel +LI YU+ Lou Bayle + Marta Tracana Nécio Marques)

Introduction

The pet food industry has undergone significant growth in recent years, driven by shifting consumer attitudes and increased pet ownership worldwide. Despite economic challenges as the COVID-19 pandemic, the sector demonstrated resilience, adapting to new demands, and maintaining a steady trajectory of growth (Pet Industry Data Book 2023). Portugal is no exception to this trend, as the Portuguese Animal Information System (SIAC) reported that the country currently has over 4.19 million registered dogs, of which over 3 million are canines (Global PETS 2024). This rise indicates a significant increase in pet ownership, as well as the growing importance of pets as integral members of households (Global PETS 2024).

While global research has provided insights into consumer behaviour and market positioning within the pet food industry, remains a gap in research that specifically focuses on Portugal's dog food markets. This thesis aims to address this gap by investigating the preferences of Portuguese consumers and the alignments with the offerings of key industry players such as Advance, PorSi (Intermarche's brand), Purina, and Royal Canin. The goal is to explore how factors such as product availability, health benefits, organic quality, sustainability, and price influence consumer choices.

Millennials and Gen Z increasingly base pet food choices on sustainability (LEK Consulting 2024). A recent Euromonitor International survey showed that, normally, pet owners are more concerned about climate change and actively pursue "green activities" to improve the environment, than non-pet owners (Euromonitor International 2024; Interzoo 2024). Consumer concern for sustainable pet food drives production, packaging, ingredient choices, as well as marketing. The 2023 EuroPet Market Trends survey showed that 64% of EU pet food consumers prefer paying more for products in biodegradable or recyclable packaging.

This thesis explores how sustainability importantly influences Portuguese dog food consumer preferences and behaviour. Therefore, in this thesis, sustainability is regarded as one of the key factors influencing consumer preferences in the Portuguese dog food market, and this study will explore in depth how sustainability affects consumer behaviour in the Portuguese dog food market.

Furthermore, such research ideally suits Portugal's demographic and socioeconomic landscape. Portugal's unique demographic and socioeconomic landscape make it an ideal setting for such research. The country has seen a rise in urbanization and shifts in family structures such as smaller households and delayed parenthood, leading to increase reliance on pets for companionship (Torres 2022). Younger generations, specifically Millennials (born 1981-1996) and Gen Z (born 1997-2012) are leading the way in pet ownership, accounting for 33% of pet owners (Forbes 2024). This shift has fuelled demand for premium health-conscious pet products that reflect care and quality (Pet Industry Data Book 2023). Portugal's market dynamics mirror global trends while offering unique regional insights, making it a valuable yet under-research markets compared to larger countries (Pet Industry Data Book 2023). Therefore, exploring consumer preferences, in Portugal, provides an opportunity to understand both evolving local needs and broader global patterns.

The study adopts a mixed-methods approach, combining perceptual mapping and conjoint analysis. These methods allow for detailed exploration of how consumers perceive competing brands and the trade-offs they make when choosing dog food. Perceptual mapping will visualize the positioning of brands into the consumers mind, relative to one another, based on key attributes. While conjoint analysis, will evaluate consumer preferences for specific product features. This comprehensive methodology enables an understanding of consumer decision making and processes, helping brands adapt their strategy to better meet market demands.

This thesis is structured to provide a cohesion exploration of Portuguese dog food markets. Following this introduction, a literature review will examine existing studies and consumer behaviour, brand positioning and trends within the pet food industry while identifying relevant gaps in Portugal. The research questions section outlines the specific factors under investigation, such as price sensitivity, health concerns and sustainability. The methodology section details the data collection and analysis techniques employed, while the discussion section presents findings and their implications for brands operating in this market. Finally, the thesis is concluded with practical recommendations for industry player and suggestions in future research.

1. Perceptual Map

7.1. Objectives Of The Perceptual Map

Perceptual mapping is applied across various marketing research, helping to bridge complex data with practical business application. Gigauri (2019, 45) identified the perceptual mapping as a valuable technique for translating consumer perception into a visual form, which helps in simplifying the interpretation and application in real-world scenarios. This tool is commonly used by both academic researchers and industry professionals, as it offers insight into market segments and identifies opportunities for innovation and differentiation (Gigauri 2019, 45).

In practice, businesses leverage Perceptual Map to uncover gaps in the market, identifying unmet consumer needs and spot strategic opportunities for entering new markets and repositioning existing product. This is especially useful in competitive environment, with low competition or to differentiate a product (Gigauri, 2019). By transforming raw data into

actionable insights, perceptual maps help industries make more effective and informed strategic decisions.

The two common approaches are the Attribute Rating Method (AR) and the Overall Similarity Method (OS) (Dillon et al. 1990). The first mentioned method consists of consumers evaluating brands or products taking into considerations different attributes, for example, price, design, subscription model, quality, and others (Dillon et al. 1990). Conversely, the Overall Similarity Method shifts the focus away from specific attributes, instead focus on the consumer evaluation concerning the overall similarity or dissimilarity between brands (Dillon et al. 1990). This method is particularly useful when the research seeks to understand holistic perceptions, especially when the key differentiating attributes cannot be explicitly identified (Dillon et al. 1990).

For this thesis, the Attribute Rating Method (AR) was chosen as the most suitable approach. This method enables the construction of perceptual maps that illustrate how consumers perceive dog food brands. By evaluating specific brand attributes such as science-based, trustworthy, and informative, this approach provides insight into the positioning of these brands in the minds of consumers. The Attribute Rating Method is particularly appropriate for this thesis, as it facilitates a structured analysis of the attributes defining the brands, thereby, contributing to a deeper understanding of consumer perceptions and behaviour within the dog food market.

7.2. Design Of The Perceptual Map

To obtain valuable insights about how consumer perceive the selected dog food brands within the Portuguese market, we created a survey using Google Forms. Google Forms is a versatile and user-friendly tool which enables researchers to design surveys efficiently. Its features make it possible to quickly formulate questions within different sections, customize diverse response

types, and disseminate the survey easily across several channels, including social media and email. Additionally, one of Google Forms' many notable features is the ability to transfer collected data to Google Sheets. This smooth integration makes data analysis and computations easier, allowing us to focus more on understanding the results rather than manually handling data. (Hsu and Wang 2017).

The survey was organised into different sections (Figure 16, Appendix). The first section is dedicated to screening questions, which were designed to qualify respondents. Participants were first asked if they currently own a dog or had owned one recently, if they answered negatively, their participation was immediately terminated. Subsequently, respondents were questioned if they usually buy dog food in Portugal. Those who say that they do not purchase dog food in the country were also directed to conclude the survey. These screening questions were essential in reducing the sample size and guaranteeing that only those with relevant and firsthand experience in buying dog food were included in the data collection. This approach is crucial to improving the validity and reliability of our findings.

In the second section of the survey, titled "Brand Familiarity and Attribute Ratings," only respondents who met the screening criteria by answering "yes" to both initial questions were invited to participate. This section began by assessing participants' familiarity with four selected dog food brands: Advance, PorSi, Purina, and Royal Canin. Evaluating brand familiarity was a critical step, as it provided essential context for interpreting the subsequent ratings of specific brand attributes. Participants were then, asked to evaluate each brand based on a series of defined attributes. For each attribute, a question was presented, and responses were collected using a five-point Likert scale. According to Carifio and Perla (2007), the five-point Likert scale effectively captures the intensity of respondents' ideas, allowing for a more nuanced analysis of consumer impressions. A strong negative association with the attribute is represented by a score of 1, and a significant positive association is represented by a score of 5.

The structured approach of this section sought to guarantee a thorough and consistent comprehension of customer perceptions, which would subsequently be used to build the perceptual map.

2. Bonus Question

8.1. Sustainability Consideration In Our Study

Sustainability has become an increasingly significant factor influencing consumer behaviour across various industries, including the pet food market. This trend reflects a growing awareness of environmental impacts and the desire for ethical purchasing decisions (Grunert et al. 2014). Our primary analysis evaluated key attributes such as price, health benefits, and sustainability in dog food selection. However, it did not directly address consumers' willingness to pay a premium for sustainable products—a critical distinction in understanding the depth of environmental responsibility in consumer preferences.

Research indicates that a significant segment of consumers is willing to pay more for products with sustainable attributes (Grunert et al. 2014). For instance, a meta-analysis of consumer studies on sustainability labels, found that consumers often demonstrate a preference for environmentally friendly products and are willing to pay a premium for these (Grunert et al. 2014). This willingness to pay is heavily influenced by factors such as perceived consumer effectiveness—the belief that individual actions can contribute to environmental preservation (Kovács and Keresztes 2019).

In the pet food industry specifically, sustainability considerations are gaining traction. Pet owners are increasingly aware of the environmental impact of their consumption behaviours, which has resulted in a growing demand for environmentally friendly production methods, sustainable ingredients, and recyclable packaging materials (Purina Institute 2024). However, studies suggest that the willingness to pay a premium for these sustainable products remains inconsistent, with only 12% to 16% of consumers globally expressing readiness to spend more on sustainably produced pet food (Pet Food Industry 2023).

The distinction between expressed preferences and actual purchasing behaviour is crucial. If consumers prioritise sustainability only when it incurs no additional cost, it suggests that sustainability functions as a secondary or conditional priority. Conversely, demonstrated willingness to pay more for sustainable products reflects a deeper commitment to environmental responsibility (Kovács and Keresztes 2022). Understanding this dynamic is essential for brands aiming to align their pricing and marketing strategies with consumer values. Positioning products with transparent communication about sustainable practices can enhance trust, loyalty, and the perceived value of sustainable offerings (Grunert et al. 2014).

8.2. Survey Development

To explore consumers' willingness to pay a premium for sustainable dog food products, we utilised the same survey (Figure 16, Appendix) designed for the perceptual map analysis, which included a specific section dedicated to sustainability questions. While the survey's overall design, participant selection criteria, and data collection methodology were comprehensively explained in the earlier chapter focused on perceptual maps, this chapter concentrates exclusively on the analysis of the sustainability section.

The sustainability section of the survey was designed to evaluate consumer attitudes and behaviours, regarding sustainable dog food products. This section included four key questions, each targeting a distinct aspect of consumer decision-making. These questions were developed based on established guidelines for survey-based research to ensure clarity, reliability, and validity (Bryman 2016). Below, the questions and their purposes are presented in detail.

Question 1 - Interest In Sustainable Products

"Suppose your preferred dog food brand offered a sustainable product at a slightly higher price. Would you be interested in buying it?" - Respondents were required to choose between two options: Yes or No.

The purpose of this question was to gauge initial interest in sustainable dog food and determine whether sustainability resonates as a meaningful factor in consumers' purchasing decisions. Binary choice questions, such as this, are widely recognised for their clarity and effectiveness in capturing unambiguous responses (Fink 2017). By framing the question within the context of the respondent's current preferred brand, the survey minimised hypothetical bias that can occur when consumers are presented with unfamiliar scenarios (Krosnick and Presser 2010).

Question 2 - Current Price Paid for Dog Food

"How much do you usually pay for a 10kg package of dry food?"

This open-ended question designed to gather insights into the average price consumers currently pay for dog food, within the sample. By collecting this data, the study aimed to establish a baseline for typical spending, which would serve as a reference point when analysing responses related to willingness to pay for sustainable options. Open-ended questions allow for greater accuracy and variability in responses, capturing real-world price trends without imposing pre-defined limits (Reja et al. 2003).

Question 3 - Willingness To Pay A Premium

"How much more would you be willing to pay for this sustainable dog food compared to your current choice? (consider a 10kg package of dry food)." - Respondents selected one of the following options: €0; €2.5; €5; €7.5; €10; €12.5; €15; €20; Above €20.

The objective of this question was to quantify the additional monetary value consumers are willing to allocate to sustainability attributes. The multiple-choice format allowed for precise measurement of willingness to pay (WTP), while accommodating diverse consumer perspectives. This approach is aligned with contingent valuation theory, which emphasizes the importance of capturing economic preferences in hypothetical but realistic scenarios (Mitchell and Carson 1989). By offering a range of price increments, the question facilitated the

identification of price sensitivity thresholds and detailed segmentation of consumer preferences (Louviere et al. 2010).

Question 4 - Willingness To Switch Brands

"Would you consider trying a different brand if it offers only sustainable dog food options?" - Respondents answered with a binary choice: Yes or No.

This question aimed to assess the potential for sustainability to act as a competitive advantage capable of influencing brand loyalty. Understanding consumers' willingness to switch brands provides valuable insights into the strength of sustainability as a differentiating factor in the marketplace. The usage of a binary response format enabled straightforward analysis of brand-switching tendencies, a critical aspect when evaluating market opportunities for sustainable innovations (Oliver 1999).

8.3. Scope Of The Analysis

This chapter aims to achieve two primary objectives. The first objective is to identify the willingness of consumers to pay a premium for sustainable dog food products. By analysing the collected data, the chapter quantifies the additional monetary value consumers are prepared to allocate to sustainability compared to their current purchasing choices. This analysis offers a direct measure of the economic importance consumers place on sustainability, in the context of dog food consumption.

The second objective involves correlating willingness to pay with specific demographic factors, to provide a nuanced understanding of consumer behaviour. These factors include age, occupation, and income. The analysis examines how different age groups prioritise and assign value to sustainability, recognising that younger consumers, often more attuned to environmental concerns, may exhibit a higher willingness to pay (Euromonitor International 2023). It also considers the influence of professional background and employment status on

spending behaviour, exploring whether occupation shapes consumer attitudes toward sustainable products. Furthermore, the study evaluates the relationship between income levels and willingness to pay, acknowledging that individuals with higher financial capacity are generally better positioned to prioritise ethical and environmental considerations in their purchasing decisions (Nguyen et al. 2020).

By integrating these demographic dimensions, this chapter offers critical insights into the drivers of consumer decisions regarding sustainable dog food products. These findings provide actionable knowledge for market segmentation and strategy development. Thus, this chapter not only quantifies the willingness to pay for sustainability but also elucidates the demographic and socioeconomic variables that influence consumer preferences, contributing to a comprehensive understanding of sustainability's role in consumer behaviour.

8.4. Data Analysis

8.4.1. Interest In Sustainable Products & Willingness to Switch Brands

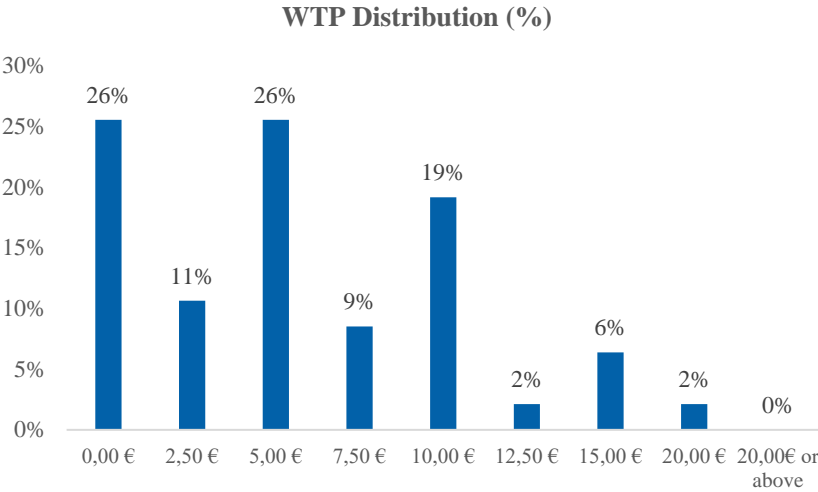
Our analysis reveals that 72% of respondents are willing to purchase a sustainable product at a slightly higher price from their preferred dog food brand. This demonstrates a considerable interest in supporting sustainable practices; however, it is important to note that the question does not specify the exact premium they would need to pay. The lack of a defined monetary value likely contributed to the positive response rate, as respondents may perceive the price increase as marginal.

In contrast, when asked if they would consider switching to another brand that exclusively offers sustainable options—without additional costs—the affirmative responses rose to 82%. This difference highlights two key insights: first, while many consumers value sustainability, they exhibit a lower willingness to pay a premium for it. Second, the higher willingness to switch brands for sustainability, suggests relatively low brand loyalty among

respondents, with sustainability serving as a compelling factor in their decision-making. These findings emphasize the importance of offering affordable sustainable options to meet consumer expectations and leverage their willingness to change for environmentally conscious alternatives.

8.4.2. Identifying Willingness To Pay For Sustainability

Figure 9: Preferred Premium Amounts for a Sustainable Dog Food



The analysis of respondents’ willingness to pay a premium for sustainable dog food revealed diverse consumer behaviours and preferences. Among the participants, 26% (12 respondents) indicated that they were not willing to pay any additional amount, selecting the €0 option. This group represents a significant portion of consumers who do not prioritise sustainability, when it comes at an additional cost. Conversely, another 26% of respondents expressed a willingness to pay €5 more for sustainable dog food, making it the most frequently selected premium amount. This suggests that a substantial share of consumers recognises the value of sustainability, but their willingness to pay is limited to a modest increase in cost. A smaller but notable group, 19% of participants, indicated a willingness to pay €10 more, highlighting a higher level of commitment to sustainability, within this segment. The remaining participants demonstrated varying degrees of willingness to pay, with 11% willing to pay €2.5

more, 9% willing to pay €7.5 more, and 6% willing to pay €15 more. Only two respondents, representing 2% each, selected €12.5 and €20 as their preferred premium amounts. Notably, no respondents selected the option of paying more than €20, suggesting an apparent ceiling in the willingness to pay for sustainability, within the surveyed population.

The mean willingness to pay (WTP) of €5.75 for a sustainable option can be interpreted as a relatively low value, when compared to the average price paid by respondents for a 10kg package of conventional dry dog food, which is €40.55 (Figure 36, Appendix). This represents an average premium of approximately 14.2%, suggesting that while some consumers are willing to pay an extra for sustainability, the additional amount that they are willing to commit is relatively modest.

When contextualized against industry norms for sustainability premiums, the €5.75 mean is on the lower end of the spectrum. Research on consumer behaviour in sustainable product markets often shows that consumers are willing to pay a 20%–50% premium for eco-friendly or organic products (Essoussi and Zahaf 2008). In this case, the average WTP for sustainable dog food falls short of these benchmarks, suggesting that while sustainability is recognized as valuable, it is not a priority strong enough to drive higher financial commitments in this market segment.

The standard deviation (€4.97) and variance (24.71) (Figure 35, Appendix) revealed significant variability in WTP among respondents, pointing to diverse financial capacities, personal priorities, and attitudes toward sustainability. This heterogeneity may be influenced by factors such as income disparities, differing levels of environmental consciousness, or variations in perceptions of the tangible benefits associated with sustainable products. Such diversity complicates market segmentation and highlights the challenge of designing pricing strategies that cater to all consumer groups.

The findings from the analysis of respondents' willingness to pay (WTP) for sustainable dog food products provide important insights into the Portuguese market. Although consumers are becoming more conscious of the significance of sustainability in their purchasing decisions, our findings suggest that this awareness does not yet correspond to a general willingness to pay a significant premium amount for sustainable products. One important finding is that 26% of respondents, a sizable portion of the sample, said they are unwilling to pay more for sustainable dog food. This substantial share of consumers reflects a significant level of price sensitivity, where affordability and practicality outweighing sustainability's perceived value. Such behaviour is consistent with findings in consumer research, where price is often cited as the most critical determinant of purchasing decisions, particularly for everyday products (Hughner et al. 2007). With sustainability being a secondary or non-prioritised attribute. This behaviour underscores a broader reluctance on the Portuguese market to pay for sustainability, when it comes with a higher price tag.

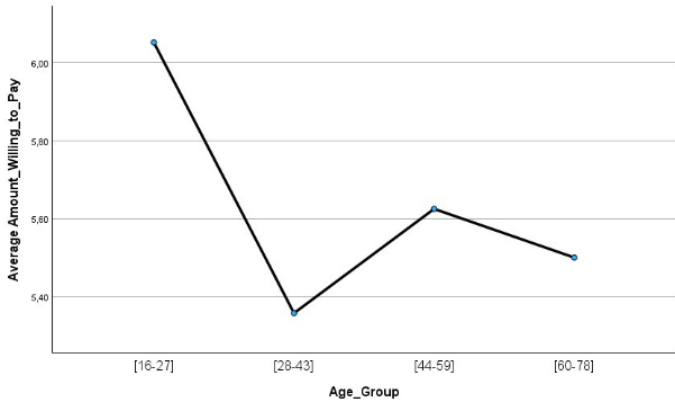
For businesses, this underscores the importance of developing strategies that integrate sustainability with affordability, ensuring that sustainable dog food products can be accessible to a broad range of consumers. Rather than framing sustainability as a luxury, companies can position it as an essential attribute that delivers meaningful benefits to the product, without significantly rising costs. Moreover, storytelling and education should play a pivotal role in marketing efforts. Brands can connect emotionally with consumers by highlighting real-world impacts of their choices (e.g. how purchasing sustainable dog food contributes to reducing carbon emissions, protecting ecosystems, or supporting ethical farming practices). Work in partnership with renowned influencers or veterinarians to establish a connection between sustainability and superior product quality, which promotes a better pet health can also resonate with consumers on a personal level, making the value proposition more persuasive. Finally, fostering trust and transparency is crucial. By providing clear information about the

sustainability credentials of their products, such as certifications, sourcing methods, or environmental impact metrics, brands can build consumer confidence and demonstrate the tangible value of their offerings, which may help bridge the gap between awareness and financial commitment.

8.4.3. How Age Influences The Willingness To Pay More For A Sustainable Product

The analysis of willingness to pay (WTP) for sustainable dog food reveals notable variations across different age groups, reflecting the influence of age on consumer preferences and financial commitment to sustainability. The data highlights both similarities and differences in the mean WTP, range of responses, and variability, within each age segment.

Figure 10: Average Amount WTP by Age Group



Among respondents aged 16 to 27, the mean WTP was €6.05, the highest average across all age groups. This segment exhibited a range of responses from €0 to €15, with a standard deviation of €4.88 (Figure 37, Appendix). These results suggest that younger consumers are reasonably more inclined to pay a premium amount for sustainable products compared to older age groups. Given that younger generations are frequently distinguished by their increased concern for sustainability and social responsibility, the higher mean WTP may indicate a greater

understanding and prioritization of environmental issues. However, the heterogeneity within this group, as indicated by the standard deviation, highlights a diversity of financial capacities or different priorities among younger respondents. Adult respondents aged between 28 and 43 reported a mean WTP of €5.36, the lowest average among all groups. The range of responses in this segment was narrower, from €0 to €10, with a standard deviation of €4.19. The lower mean and reduced range of WTP in this age group may reflect competing financial priorities, such as family expenses or career-related investments, which limit their willingness to allocate additional resources toward sustainable products. Despite this, the standard deviation indicates some level of diversity in attitudes, with a small proportion of respondents willing to pay closer to the upper end of the range. The middle-aged group, aged 44 to 59, exhibited a mean WTP of €5.63, with responses ranging from €0 to €15 and a standard deviation of €4.61. This group's mean WTP is slightly higher than that of the 28–43 age group, suggesting a moderate willingness to pay for sustainability. The broader range of responses and moderate standard deviation indicate varying attitudes within this segment, potentially reflecting differences in financial stability, environmental awareness, and personal priorities. Older adults aged 60 to 78 reported a mean WTP of €5.50, with responses ranging from €0 to €20. This group had the highest standard deviation, at €8.36, indicating significant variability in their willingness to pay. While the mean WTP is comparable to other age groups, the wide range and high standard deviation suggest that some older consumers are willing to make substantial financial commitments to sustainability, while others remain unwilling to pay any premium. This variability may be influenced by factors such as disposable income, retirement status, and individual attitudes toward environmental issues.

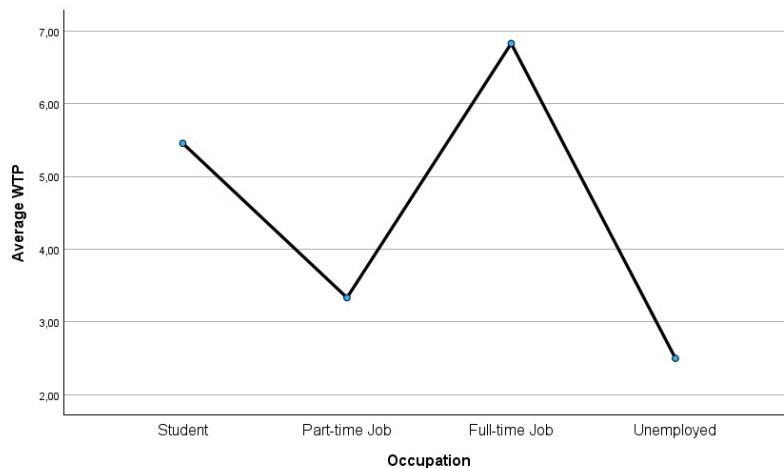
This analysis reveals that age is not a straightforward determinant of willingness to pay for sustainability. Consumer behaviour is shaped by a combination of generational perspectives, life-stage priorities, and individual financial circumstances. Younger customers, however, are

more inclined to place a higher priority on sustainability due to social and environmental values, whereas middle-aged and adult consumers weigh these considerations against their immediate financial obligations.

Research highlights a significant generational gap in sustainable consumption, with younger consumers demonstrating a stronger preference for sustainable products compared to older generations (Statista n.d.). Younger generations, specifically Millennials and Generation Z, are progressively prioritising sustainability in their consumer preferences driven by a heightened awareness of environmental issues and a desire to align purchases with their personal values. This shift reflects a deeper understanding of how consumption habits impact the planet, with many young consumers willing to pay a premium for brands that show commitment to sustainability. (First Insight n.d.). Older generations generally show a less consistent commitment to sustainability. While many seem to be aware of environmental issues and may support sustainable practices, their purchasing decisions often prioritise factors like price, convenience, and brand loyalty over eco-consciousness. Studies suggest that older generations tend to be slower to adopt sustainable products due to a lack of familiarity with newer options or scepticism about their efficacy and cost (Statista n.d.). This group is also more likely to adopt sustainable practices when they see direct financial or practical advantages.

8.4.4. How Occupation Influences The Willingness To Pay More For A Sustainable Product

Figure 11: Average Amount WTP by Occupation Group



The analysis reveals significant variations across different occupational groups, reflecting the influence of employment status on consumer preferences and their financial capacity to prioritise sustainability. The data highlights both similarities and differences in the mean WTP, range of responses, and variability, within each occupational category.

Among students, the mean WTP was €5.45, with responses ranging from €0 to €15 and a standard deviation of €4.16 (Figure 38, Appendix). This group demonstrates moderate willingness to pay a premium for sustainable products, likely influenced by their heightened awareness of environmental issues and a sense of social responsibility, often observed in younger demographics. However, the relatively high variability, as indicated by the standard deviation, reflects differences in financial resources as students often have limited or inconsistent income sources. Respondents working part-time reported a WTP at €3.33, with responses ranging from €0 to €10. This lower average suggests that part-time workers may have more restricted budgets and competing financial priorities, which limit their ability to pay a premium for sustainability. Those with full-time employment exhibited the highest mean WTP at €6.76, with responses ranging from €0 to €20 and a standard deviation of €5.45. This higher average suggests that full-time workers are generally more financially stable and, therefore, more willing to allocate resources toward sustainable purchases. The broader range of responses and moderate standard deviation, however, indicate variability within this group, reflecting

differences in individual priorities, disposable income, and attitudes toward sustainability. Unemployed respondents reported the lowest variability and range in WTP, with a mean of €2.50, and responses ranging from €0 to €5. This group's limited financial resources and lack of stable income likely contribute to their low willingness to pay a premium for sustainable products. The narrow range and lower standard deviation suggest a more uniform reluctance within this segment, emphasizing the critical role of economic stability in shaping consumer behaviour.

From this analysis, we concluded the expected outcome, that individuals with stable employment, such as those in full-time jobs, are willing to pay a higher premium for sustainable dog food. However, students also exhibit a great WTP, which can be attributed to this occupational group being predominantly composed of young people, who are often more environmentally conscious and prioritise sustainability.

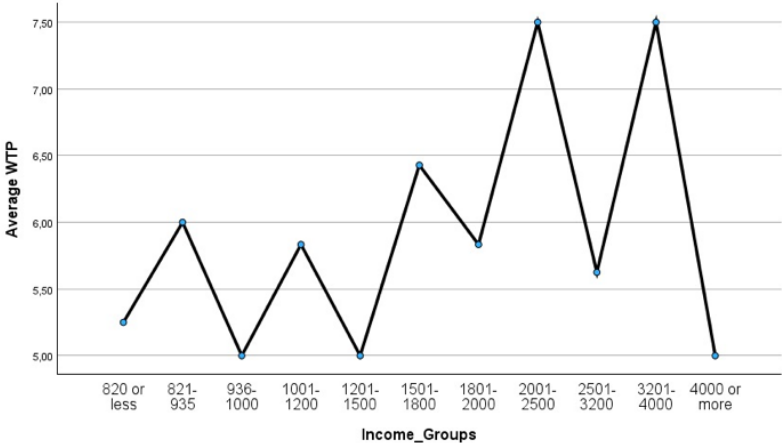
People with stable employment are often more willing to pay a premium for sustainable products, as financial security allows them to prioritise values such as environmental and social responsibility over cost alone. A study shows that consumers with steady incomes are more likely to view sustainable choices as long-term investments rather than immediate expenses (Deloitte 2022). These individuals often perceive their financial stability as an opportunity to support ethical practices, such as eco-friendly production or fair trade, aligning their purchasing power with their principles. Additionally, stable employment provides disposable income, which makes the slightly higher cost of sustainable goods less prohibitive. This trend underscores how economic factors, such as job stability, significantly influence the ability and willingness of consumers to make eco-conscious decisions, in their everyday lives.

People who are unemployed or have a part-time job may still care deeply about sustainability, but their ability to prioritise eco-friendly options in their purchasing decisions is often constrained by financial situations. For this group, affordability and immediate necessity

often take precedence over ethical or environmental considerations (World Economic Forum 2022). Still, research shows that unemployed individuals may still engage in sustainable practices that do not incur extra costs, such as reducing waste, reusing items, or buying second-hand goods (Statista n.d.). While their purchasing power may be limited, their concern for the environment is not necessarily diminished; rather, it is expressed in ways that align with their economic circumstances.

8.4.5. How Income Influences The Willingness To Pay More For A Sustainable Product

Figure 12: Average Amount WTP by Income Group



The analysis of willingness to pay (WTP) for sustainable dog food shows distinct patterns across different income groups, exposing the influence of financial capacity and disposable income when it comes to consumer behaviour. The data highlights notable differences in the mean WTP, range of responses, and heterogeneity, within each income segment.

Respondents with income levels between €2001- €2500 and €3201- €4000 exhibited the highest mean WTP at €7.50, with responses ranging from €5 to €10 (Figure 39, Appendix).

This indicates that consumers in these income brackets are more willing to pay a premium for sustainable products. The narrower range of responses suggests a more consistent willingness among individuals in these groups, potentially driven by their financial stability and capacity to prioritise sustainability in their purchasing decisions.

The income group earning €1501 to €1800 demonstrated a mean WTP of €6.43, with a standard deviation of €4.53 and a range of responses from €0 to €12.50. The relatively high mean presented by this group, suggests a moderate prioritisation of sustainability. The broader range of responses and variability indicate differing financial priorities, within this segment.

Individuals earning €821 to €935 reported the third-highest mean WTP of €6.00, with responses ranging from €2.50 to €10. The fact that individuals which belong to this group are willing to pay an amount like that of higher-income groups, might indicate a strong personal commitment to sustainability or a careful prioritization of their limited financial resources.

The groups with the lowest mean WTP included those earning €936 to €1000, €1201 to €1500, and €4000 or more, with responses ranging broadly from €0 to €10, €0 to €15, and €0 to €20, respectively. These segments showed more significant variability, suggesting diverse attitudes within the groups. For higher-income individuals (earning €4000 or more), this variability may reflect differing prioritisation of discretionary spending, with some willing to invest heavily in sustainability, while others remaining less inclined.

The results of this analysis indicate that there is no clear positive correlation between income and willingness to pay a premium for sustainability. While it might be expected that individuals with higher salaries would allocate more resources toward sustainable products, this pattern is not consistently observed. Our findings reveal that willingness to pay a premium for a sustainable option is influenced by factors beyond income level, which may include individual priorities, spending habits, perceptions of sustainability, social and culture factors. These results underscore the complexity of consumer behaviour, proposing that financial capacity alone does

not determine the value that individuals place on sustainable options. Instead, a variety of personal and contextual factors play a significant role in determining these decisions.

People with higher incomes are not necessarily the ones most willing to pay a premium for sustainable options, because their purchasing decisions are influenced by diverse factors, beyond financial capacity. Research suggests that while higher-income individuals often have the means to afford sustainable products, they may prioritise other attributes, such as brand prestige, convenience, or personal preferences, over sustainability (PwC 2024). Additionally, some high-income consumers may exhibit scepticism about the effectiveness of sustainable options, or view sustainability as a secondary concern when compared to quality or luxury.

In contrast, people with lower or middle incomes who value sustainability as a personal or ethical priority might demonstrate a stronger willingness to allocate their limited resources toward environmentally friendly products, even if it means sacrificing the consumption in other areas (Deloitte 2022). This shows that attitudes and values toward sustainability often outweigh mere financial capacity in influencing consumer behaviour.

3. Conclusion

The pet food market has seen significant growth in recent years, driven by changing consumer preferences and increasing pet ownership. This growth has intensified competition, pushing brands to adopt distinct strategies and positioning to meet diverse consumer needs. This thesis provides significant findings that contribute to the understanding of the pet industry, addressing existing gaps in the Portuguese market. By combining interviews with perceptual mapping and conjoint analysis, we explored how these attributes affect consumer perceptions, behaviours, purchasing decisions, and brand preferences.

Through conjoint analysis, we were able to examine Portuguese consumers' choice of dog food, focusing on the key attributes that influence their decisions. From the attribute perspective,

the five attributes most valued by Portuguese consumers are availability, health benefits, organic quality, price, and sustainability. Our findings align with existing literature, as the results reveal that price is the primary attribute considered by consumers. However, for Royal Canin, health benefits attribute is a priority attribute, with consumers preferring to choose dog food with health benefits. Another important factor is sustainability and organic quality, which emerges as a highly significant consideration. The same applies to organic ingredients, which play a significant role in enhancing product attractiveness. Although they receive less attention than other factors, consumers also tend to choose products with full availability and those produced with organic ingredients.

These results provide a reference for the optimization of products, suggesting that the focus should be on price, health benefits, and sustainability to meet the needs of major consumer groups. Moreover, throughout the study of the main attributes, it was possible to identify the “perfect” combinations of those attributes. However, it is evident that in the real world, combining the highest-scoring attributes with the lowest price would be unfeasible for brands. Despite the unrealistic scenario presented by conjoint analysis, its application was crucial to understanding the impact of the attributes used in our analysis. Moreover, through analysis using the simulator, we were able to predict consumer preferences in different market scenarios.

The perceptual analysis, conducted in this thesis, explored four prominent pet food brands - Advance, PorSi, Purina, and Royal Canin, understanding where Portuguese consumers associate these brands with nine diverse attributes, including innovation, trust and attractiveness.

Our findings can provide a valuable foundation for the selected brands to craft well-informed and consistent strategies tailored to their unique strengths and market positioning. Additionally, these findings highlight key areas where each brand can improve, whether by enhancing their product development processes, investing in more innovative solutions, or refining their marketing strategies to more effectively communicate their value propositions.

Sustainability is playing an increasingly pivotal role in shaping consumer behaviour across various industries, including the pet food market. Our findings highlight the growing importance of this factor, particularly among younger generations, who demonstrate the highest appreciation for sustainability and a greater willingness to pay a premium for such products. However, despite this trend, our results reveal that Portuguese consumers, as a whole, are not yet prepared to translate their concern for sustainability into a willingness to pay higher prices for sustainable dog food options.

Overall, our thesis provides important insights into the key attributes influencing the decision to purchase dog food among Portuguese consumers, highlighting the importance of a deeper understanding of consumer behaviour and preferences. It is a comprehensive solution that balances functionality, cost performance and environmental awareness. It can appeal to consumers who are concerned about the long-term health of their pets. By building consumer trust in the brand, the perfect product can also form a long-term emotional connection and resonance with consumers, consolidate its market position, and win long-term loyalty and support from consumers.

Ultimately, this thesis provides practical and guiding insights for companies, policy makers and researchers to contribute to relevant discussions and drive product optimization and development in the dog food market. In the context of today's increasing focus on sustainable development, it provides guidance for dog food industry practice and brand strategy. Additionally, our research addresses a gap by providing further and distinct investigation into consumer preferences in the Portuguese dog food market, providing new perspectives and insights into this underexplored industry.

4. Managerial Implications

The research provided valuable findings into consumer behaviour and preferences, in the Portuguese pet food market, that can be translated into actionable strategies. Those implications

relate to the study outcomes by investigating the attributes in consideration, including availability, health benefits, organic quality, price, and sustainability.

Price is considered a significant factor for consumers, still, there is a consumer segment willing to pay a premium for products that deliver enhanced value through attributes such as health benefits, sustainability and organic quality. Having in mind those different consumer segments, companies should consider implementing tiered pricing strategies to attract and retain a wide range of consumer segments (Nagle and Müller 2017, 45). Consequently, higher-income consumers who focus on superior quality and personalised features can buy premium product lines, while more affordable options can attract cost-conscious buyers while maintaining essentials. Thus, for companies to capture a broader market share it is crucial to balance quality and price while considering the diverse needs of the Portuguese pet food market (Springer 2013).

The results revealed the increasing relevance of health benefits in dog food. Considering that finding, companies should develop and prioritize products that respond to certain dog health needs such as digestive health, joint care, and weight management. Focusing on the pet owners' segment who highly value their pet's well-being, products enriched with functional nutrients and tailored formulations can impress those consumers. Furthermore, marketing strategies should emphasize these health-related attributes, effectively communicating their value to consumers and reinforcing those products' role in enhancing pet's quality of life (Kotler and Keller 2016).

Additionally, the findings underscored the growing importance of sustainability as a determinant factor in the dog food market. To meet the expectations of environmentally conscious consumers, companies must integrate sustainable practices throughout their operations. Those practices include implementing recyclable packaging, minimising carbon footprint and source ingredients ethically. This not only constitutes a response to the eco-

conscious demand but can serve as a key differentiator. In addition, transparently communicating those sustainable efforts can empower consumer trust and foster long-term loyalty (Verhoef and Bügel 2017; Nuttavuthisit and Thøgersen 2017). Thus, dog food brands should optimise brand positioning to attract target customers more effectively.

While these attributes are important, another relevant factor is product availability, impacting the business success as highlighted by the research findings. To satisfy the different consumer expectations, companies must invest in comprehensive distribution networks that seamlessly combine online and offline channels (Verhoef, Wagner, and Herhausen 2021; Piotrowicz and Cuthbertson 2019). E-commerce popularity constitutes an opportunity to attract tech-savvy consumers who value convenience. At the same time, maintaining a strong presence in physical stores responds to the traditional buyers' expectations (Grewal, Roggeveen, and Nordfält 2017). A carefully designed distribution strategy not only improves accessibility but also minimises the risk of customer attrition due to stock shortages, fostering trust and reliability (Verhoef, Wagner, and Herhausen 2021; Piotrowicz and Cuthbertson 2019).

Simultaneously, organic considerations are becoming increasingly influential in driving consumer purchasing decisions. Consequently, leveraging certifications and transparent labelling is crucial to bolster consumer confidence and brand credibility (Jahn, Schramm, and Spiller 2005; Wognum et al. 2011). By positioning themselves as champions of responsible and organic resources, companies can foster lasting loyalty and build ethical relationships with the audience (Verhoef and Bügel 2017; Nuttavuthisit and Thøgersen 2017).

Additionally, our analysis reveals valuable insights into consumer perceptions and preferences in the Portuguese pet food market, focusing with four selected brands. By understanding the unique strengths and challenges of Advance, Por Si, Purina and Royal Canin we would like to propose specific solutions to enhance their positioning, meet consumer needs, and capitalize on market opportunities effectively.

Royal Canin demonstrate a strong position, emphasizing it as a trusted choice for discerning pet owners. To sustain this leadership, the brand should continue prioritizing veterinary-endorsed, evidence-based formulations while investing in advanced products that address niche health concerns, such as aging pets and breed-specific needs. It's crucial to emphasize its premium quality by integrating clear messaging around scientific excellence, quality assurance, and veterinary trust. Campaigns should focus on storytelling that highlights tangible outcomes, such as improved health, vitality, and pet longevity, creating an emotional connection with consumers while reinforcing the brand's role as a reliable solution for their pets' well-being.

Advance seems to hold a positive position in the market but falls short of Royal Canin, to bridge this gap, Advance should focus on enhancing product innovation by introducing a wider range of flavours and formulations tailored to specific health needs. Improving the brand's scientific credibility is also essential, the brand could highlight its commitment to science-based production through transparent communication of its research and product development processes. Collaborating with veterinarians and nutritionists to endorse and validate its products can build trust and position the brand as a more credible alternative. Additionally, increase familiarity among consumers is crucial, which can be achieved through targeted marketing campaigns focusing on its key strengths, such as balanced nutrition and functional health benefits.

Purina should address weaker perceptions around scientific credibility and premium quality, two attributes that are particularly important in the actual pet food market. By expanding its portfolio of health-oriented formulations, including those targeting specific nutritional needs or health concerns, Purina can align itself more closely with consumer expectations in these areas. This approach should be supported by transparent and informative communication, which can help reinforce trust and reliability. To differentiate itself further in a crowded market, where we found brands like Advance and Royal Canin, Purina should also aim to establish greater

distinctiveness. Which may include offer sustainable options, like refillable packaging or upcycled ingredients, to further enhance its appeal to sustainability-focused consumers.

Finally, to improve its brand perception, PorSi should focus on enhancing product value by developing cost-effective yet credible formulations that address basic pet health needs, such as balanced nutrition, digestive support, and weight control. To bridge the gap in reputation and trustworthiness, PorSi must implement targeted marketing campaigns that emphasize its practicality, reliability, and strong price-to-value ratio. Highlighting its ability to provide essential nutrition at an affordable price will resonate with budget-conscious consumers.

5. Study Limitations

Despite the valuable insights gained from this research, several limitations must be acknowledged to provide context for the results. These study limitations reflect the inherent challenges of conducting consumer research and indicate factors to be improved in future research.

Market Fluctuations

Market dynamics are inherently fluid, as highlighted by the Brookings Institution (2018), markets often experience short-term volatility, emphasizing the importance of considering temporal perspective when analysing market behaviours (Brookings Institution, 2018). In the present thesis, the results are based on cross-sectional data, which can only reflect the preferences of consumers in the specific time under investigation, and consumer behaviour may change with changes in social values, market trends, and brand marketing strategies, resulting in a lack of dynamic perspective.

Secondary Data Bias

The use of secondary data, such as articles and academic papers, can distort the evidence base. Substantial gaps and limitations in datasets may introduce biases in research findings (Baldwin, Murray, and Widaman 2022). Moreover, secondary data may also lack granularity or relevance to certain markets, impacting the accuracy of the analysis and conclusions (Gaffney and Matias 2018).

Online Survey Distribution Bias and Survey Scope

The use of online survey distribution channels including Google Forms, social media platforms, and messaging apps like WhatsApp, introduces potential biases in the sample population. While these online channels are effectively reaching a larger audience, they may overrepresent younger, tech-savvy individuals who are frequent internet users (Statista, 2023). Consequently, this survey distribution method can inadvertently exclude older and less digital consumer groups, resulting in sample population bias. These imbalances limit the generalisability of findings across all market segments. Consequently, the conducted surveys may not include the diversity in the Portuguese dog-owning population. Variations in regional, cultural, and socio-economic factors may not be fully represented in the surveys, limiting the generalizability of the results.

Brand Scope

Consumer behaviour in the dog food market is notably varied, shaped by a wide array of brands beyond the selected ones with an increase of pet food brands (Statista 2023). Although, the selected brands are major players in the Portuguese market, excluding smaller competitors may result in a less comprehensive understanding of consumer preferences. By not including a broader range of brands, the survey results can be impacted by the perceptions and preferences of consumers who usually buy other brands' products. Furthermore, this thesis solely explores the Portuguese market, not including other global markets. Following a comparative analysis

could have contextualised the results, emphasizing unique or universal trends in Portuguese consumer behaviour. Additionally, it could provide insights that would complete and better justify some findings.

Narrow Focus on Dog Food

Considering adjacent pet categories including treats and accessories, could result in a more holistic approach of consumer behaviour. Despite the substantial growth of the dog food market, certain segments can be considered niche segments (Expert Market Research 2023). This constitutes a constraint in gathering a substantial number of responses from consumers. This limitation brings difficulties in achieving a representative sample size, potentially impacting the generalisability of insights and conclusions drawn from the research.

Additionally, one complexity of the dog food market lies in the fact that the buyer (pet owner) is not the final consumer. Thus, analysing attributes including flavour and texture is a challenge as the preferences of the pet cannot be directly assessed by the owner. Relying on indirect factors such as pets' reactions or veterinary recommendations can introduce bias and an additional layer of complexity.

Lack of Emotional and Psychological Analysis

Even considering emotional and psychological insights from past studies, this research focuses solely on tangible attributes such as availability, health benefits, organic quality, sustainability, and price. Understanding consumer behaviour requires analysing emotional and psychological factors, which provide a more holistic view of consumer decision-making processes (Springer n.d.). In the pet food market context, factors like the emotional bond between owners and their pets can provide valuable insights that influence consumer decisions and, consequently, allow a more comprehensive understanding of consumer preferences.

Lack of Exploration of Emerging Trends

The research did not explore some emerging trends including vegan or insect-based dog food (Verified Market Reports 2023; Allied Market Research 2020). Analysing those innovations could allow a forward-looking perspective on the market while investigating new consumer preferences. Moreover, factors, such as flavour, packaging design, or brand loyalty, were not thoroughly examined. Including these dimensions could provide a more comprehensive understanding of consumer preferences.

Market share

In addition to the previous, conjoint interviews are designed to capture consumer preferences for specific attributes and levels included in the survey, if all brands have the same availability. However, as highlighted by Orme and Johnson, (Orme 2008) in the real world, not all consumers have the same awareness and knowledge of each brand. For example, advertising or promotions can significantly influence consumer behavior. Moreover, while conjoint analysis reflects potential preferences for a product, it does not necessarily mean that consumers can purchase that product. As such, while conjoint analysis is a useful tool for predicting preference shares, it cannot predict market shares, as it does not capture all factors that can affect consumer behavior.

Drawbacks of Similar Attributes

A significant drawback of this thesis was the high correlation among the evaluated attributes, with $r > 0,95$. From one perspective, it shows that respondents evaluated the attributes uniformly, but on the other hand, it led to an overarching perception of brand quality. While this consistency emphasizes the coherence on consumer perceptions, it also introduced an analytical challenge, as Principal Component Analysis (PCA) could only identify one significant dimension, restricting the ability to uncover nuanced differences between brands.

6. Future Research Suggestions

Considering the outlined limitations, future research could achieve a more thorough understanding of the dog food market by addressing these constraints.

Current research uses static data, while consumer behaviour may adjust dynamically due to changes in social trends, market trends, and brand strategies. Thus, future studies could adopt longitudinal research methods to observe the evolution of consumer preferences over different periods.

Secondly, the sample size should be larger to cover more consumer groups, especially consumers of different ages, incomes, and geographical regions, ensuring the results reflect the Portuguese market diversity. Also, expanding primary data collection methods could diminish the usage of secondary sources, and consequently, minimise biases.

Additionally, including a wide variety of brands, pet food product categories and emerging trends, could provide a more comprehensive view of consumer preferences. To strengthen findings on consumer preferences, future studies should incorporate emotional and psychological factors. This would shed light on how the bond between pet owners and their pets' influences purchasing decisions.

To conclude, future research could explore other potential drivers of consumer preferences, such as environmental awareness, education, and cultural or social influences, to better understand the factors underpinning consumer decisions in the dog food market.

Individual part

2.2. Market Overview – Market & Brands

2.2.1. Market Landscape

The global pet food market has experienced remarkable expansion in the past years, in 2023 the market was valued at approximately USD 120.87 billion and is forecasted to reach USD 193.65 billion by 2032, growing at a compound annual growth rate (CAGR) of 5.45% (Fortune Business Insights 2024). The Portuguese pet food market was valued at USD 833 million in 2023 and was projected to reach approximately USD 1,097 million by 2029, with a compound annual growth rate (CAGR) of 4.7% (StrategyHelix 2024). Moreover, in Portugal 72% of households own at least one pet, surpassing the global average of 58% (Statista, 2023). This growth is related to the increasing awareness among pet owners about the importance of adequate nutrition for their pets, coupled with the growing availability of high-quality, premium, and specialized pet food products (Lahner et al. 2020). Recent studies revealed that the trend towards premium pet food highly contributes to the substantial market expansion, as consumers are willing to pay more for organic, grain-free, and more nutritious products (Euromonitor International 2023).

The COVID-19 pandemic impacted the pet food market, a study revealed that during extended periods of isolation and uncertainty, many individuals and families opted for pet ownership to receive comfort and emotional support (Hawkins et al. 2020). This trend was observed worldwide, as shelters and adoption centres reported unprecedented levels of demand, driven by people seeking for psychological benefits of pet companionship (Morgan et al. 2020). In North America, the increase in dog adoption was amplified by the rise of remote work as individuals gained more time and flexibility to care for pets (American Pet Products Association 2023). Similar patterns were evident in the United Kingdom, as an estimated 3.2 million households adopted a pet during the COVID-19 pandemic period (BBC News 2021). During

this period, pet adoptions surged by 32% due to the companionship necessity of individuals and families during isolation (Statista, 2023). In addition, Portuguese shelters reported a significant rise in adoptions with higher demand for dogs and cats than ever before (Fernandes and Santos 2023).

On the other hand, pet humanization drives the demand for high-quality pet food (Dotson and Hyatt 2008; Kumar, Goswami and Pathak 2024). Dotson and Hyatt (2008) found that pet owners' emotional investment in their pets increased significantly, and pets are regarded as members of the family, which is directly reflected in the consumption expenditure of high-end pet food (Dotson and Hyatt 2008). Recent research noted that 91.89% of pet owners treat their pets as integral family members, resulting in an increased expenditure on premium products that mirror human health and wellness preferences (Global Business Insights 2023). In addition, pet humanization is also related to the trend of pet food customisation and personalization, nowadays consumers buy functional food designed according to the specific needs of their pets (Kumar et al. 2024). Naakka (2021) mentioned that digital technology and e-commerce application in the dog food market have given manufacturers the ability to offer customized dietary solutions, allowing them to tailor their products to meet the specific needs of dogs based on their life stages, as well as to create products prepared for dogs with health issues (Naakka 2021).

One of the largest factors that contribute to the increasing demand for natural, organic, and functional pet food is the growing consumer concerns regarding pet health and pet food ingredients (Kumar et al. 2024). For example, digestive health, as revealed by studies, has a profound impact on animal health, therefore pet food infused with probiotics and prebiotics is in demand among consumers (Kumar et al. 2024). Consumers are also increasingly aware of their pets' living environment, causing an increased preference for sustainability (Kumar et al. 2024). Producers and manufacturers are now looking for alternatives that can lessen the effects

of production processes on the climate such as sustainable protein sources (Kumar et al. 2024). The younger consumer groups, such as millennials and Gen Z, have a higher acceptance of new products, and are more willing to buy pet food with good quality, transparency, and ethical production, bringing the high-end and diversified market further (Naakka 2021).

The pet food market is getting more competitive and is defined by several multinational companies (Naakka 2021). An enterprise like Mars Petcare dominates a share of the global pet food market and leverages product diversity and marketing strategies to reinforce its hold on this market (Naakka 2021). Moreover, younger consumers are less brand loyal to dog food products, devoting much more attention to product quality and transparency of manufacturing processes (Naakka 2021). Therefore, this puts forward higher requirements for traditional pet food brands, which need to attract and retain consumers through innovative products and marketing strategies (Naakka 2021). For example, Kumar et al. (2024) mentioned that enterprises can engage with consumers and build a relationship of trust by providing "solutions" rather than selling products (Kumar et al. 2024). In the process of pursuing product differentiation and clear market positioning, enterprises must also consider how to control costs without sacrificing the cost-effectiveness and cost performance of products (Kumar et al. 2024).

Furthermore, the pet food market is being changed by digital operations and e-commerce (Naakka 2021). With the rise of e-commerce, consumers have access to a greater variety of kibbles, and brands are more engaged and communicative with consumers (Naakka 2021). For instance, subscription services have become an important growth point for many companies, providing consumers with a convenient food purchase experience and enhancing consumer loyalty (Naakka 2021).

Technology is profoundly influencing the development of the pet food industry and the future direction of innovation (Kumar et al. 2024). Pet food manufacturers leverage artificial intelligence (AI) and machine learning (ML), to analyse consumer buying behaviour, as well

as optimize pet food recipes to understand what consumers want. Thus, making pet food product development and marketing strategies more precise (Kumar et al. 2024). The incorporation of novel ingredients and bioactive compounds to enhance the health status of pets and meet their specific health requirements, is also applied in the pet food sector (Kumar et al. 2024). It can also provide more adequate personalized nutritional support for pets and promote their general health (Kumar et al. 2024).

2.2.2. Key Players In The Dog Food Market

Due to the development of the pet food market at a high speed, there is a great number of brands pouring into the market, which have different quality, price, nutrition ingredient of pet food, implement different brand positioning and marketing strategies, according to different consumer groups and demands (Basson 2014). Currently, the pet food market is divided into companies that have established their own brand image and companies that are trying to establish a new brand image, by entering the market (Kim 2022).

This thesis focuses on the following four brands, Advance, PorSi, Purina, and Royal Canin, as they represent different market positions and target consumer groups, in the Portuguese pet food market. These brands cover a wide range of market segments from high-end to economy, enabling a comparative analysis to fully reflect the needs and preferences of different groups of Portuguese consumers (Hobbs and Shanoyan 2018; Son and Son 2024; *Purina® - Alimentation Pour Chien Et Chat*, n.d.; Royal Canin - Alimentation Équilibrée Et De Qualité Pour Chiens Et Chats, n.d.; Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.; Marca PorSi | Intermarché, 2024).

Advance

Advance is a brand specialized in advanced nutrition, offering high-quality products developed by the brand's veterinarians (Advance: Expert Nutrition for Dogs and Cats | Advance

Affinity, n.d.). “For over 25 years, Advance has been dedicated to research and development of quality nutrition that helps your dog’s defences, in collaboration with research centres and international universities.” (Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.)

On the brand's website, consumers can take a test to discover the most appropriate food for their pets or even schedule an appointment with a vet (Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.). Moreover, the brand is known for high-quality ingredients, carefully selected for their nutritional characteristics, “(...) to ensure that they provide everything necessary for a balanced diet.” (Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.)

This brand offers specialized products based on different dog characteristics, such as age, weight, and other specific needs (Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.). Additionally, it has high availability, as it can be purchased through all possible channels (supermarkets, veterinaries, and online). Advance has also demonstrated a commitment to sustainability and social responsibility, aiming to “improve our impact by making our activities more sustainable and socially responsible.” (Advance: Expert Nutrition for Dogs and Cats | Advance Affinity, n.d.)

Por Si

PorSi is a supermarket brand from Intermarché, focusing on offering cost-effective solutions for a broad consumer base (Marca PorSi | Intermarché, 2024). This brand provides a complete and well-balanced offering that meets the primary needs of dogs (Marca PorSi | Intermarché, 2024). According to the website, the brand ensures that pets receive basic and adequate nutrition to support their diet (Marca PorSi | Intermarché, 2024). Additionally, through the website, the brand offers a service that allows scheduling an appointment at their veterinary clinic.

Furthermore, it states that their food is developed by Intermarché veterinarians, addressing essential nutritional requirements (Marca PorSi | Intermarché, 2024). However, there is no indication that balanced nutrition is derived from organic or sustainable sources. As such, we consider that this brand neither offers organic food, nor promotes sustainability in its products. Even though PorSi is a supermarket brand and is accessible in all Intermarché stores across the country, this product has lower availability, as it is not sold through other channels, such as vet stores or online platforms, compared to other brands. Additionally, the brand positions itself at a price of approximately 20 euros for a 10-kilogram package, appealing to consumers who prioritize affordability and cost-effectiveness in the pet food market (Marca PorSi | Intermarché, 2024). As such, this brand mainly focuses on price and does not emphasize attributes such as health benefits, organic ingredients, or high availability.

Purina

Purina is a leading brand in the premium pet nutrition segment, offering scientifically formulated products designed to meet the unique needs of dogs (Son and Son 2024). Those products are developed by Purina's team of veterinarians, animal nutritionists, and scientists. Purina focuses on delivering innovative solutions that promote the long-term health and well-being of pets (Son and Son 2024). The brand emphasizes "Backed by decades of research, Pro Plan offers high-performance nutrition that supports your pet's immune system, digesting and overall vitality, helping them lead healthier and happier life." (Purina® - Alimentation Pour Chien Et Chat, n.d.).

On the brand website, pet owners can access resources to understand their pets' dietary needs, including tailored food recommendations and expert advice (Purina® - Alimentation Pour Chien Et Chat, n.d.). The brand prides itself on using high-quality ingredients such as, real meat at the first ingredient, combined with nutrients like omega, fatty acids, antioxidants, and probiotics to support specific health needs (Purina® - Alimentation Pour Chien Et Chat, n.d.).

Purina brand offers specialized formulas for dog based on life stages (puppy, adult, and senior), sizes (small, medium, and large), breed, and specific health needs like sensitive digestion, skin and coat care, and joint health (Purina® - Alimentation Pour Chien Et Chat, n.d.).

The brand position itself as a premium brand, Purina's pricing reflects its quality, with products costing approximately 40 euros to 60 euros for 10-kilogram bag, depending on the specific formula (Purina® - Alimentation Pour Chien Et Chat, n.d.). By focusing on high-quality science-driven nutrition, Purina appeals to pet owners seeking optimal health for their pets (Son and Son 2024).

Royal Canin

Royal Canin is a renowned brand specializing in tailored pet nutrition, offering premium quality developed in collaboration with veterinarians and nutrition experts (Xu 2023). For over 50 years, the brand has been committed to research and development in pet nutrition, aiming to meet the uniqueness of dogs, through science-based solutions (Xu 2023).

On Royal Canin's website, pet owners can find a variety of resources tailored to their pets' nutritional needs, including tools to select the most suitable food (Royal Canin - Alimentation Équilibrée Et De Qualité Pour Chiens Et Chats, n.d.). The brand features carefully selected quality ingredients, formulated for specific health needs, life stages or breeds, to provide pets with a tailor-made balanced diet (Royal Canin - Alimentation Équilibrée Et De Qualité Pour Chiens Et Chats, n.d.). Royal Canin offers a broad range of specialized products, catering to various characteristics like age, breed, size, lifestyle, and specific health conditions such as allergies, digestive issues, or weight management (Royal Canin - Alimentation Équilibrée Et De Qualité Pour Chiens Et Chats, n.d.). It is widely available across veterinary clinics, pet specialist stores, and online platforms, ensuring accessibility for consumers (Royal Canin - Alimentation Équilibrée Et De Qualité Pour Chiens Et Chats, n.d.).

Positioned as a premium brand in the dog food market, Royal Canin's products are priced similarly to competitors in the premium segment, at around 40 euros for 10-kilogram package, depending on the specific formula (Xu 2023). Moreover, this brand focuses on quality products but doesn't sell dog food with organic ingredients. By targeting pet owners who prioritize their dog's health and well-being, the brand appeals to those willing to invest in science-backed veterinarian-recommended nutrition (Xu 2023).

2.6. Sustainability In The Pet Food Market

Cat and dog food has a significant impact on environmental sustainability, especially with the rise in pet ownership and the increasing meat content in pet food, rendering it necessary to find ways to achieve environmental sustainability (Okin 2017). The sustainability of pet food has attracted the attention of consumers and enterprises, becoming the innovation and development direction of the pet food industry. (Swanson, Carter, Yount, Aretz and Buff 2013; Meeker and Meisinger 2015; Deng and Swanson 2015; Cabrita, Guilherme-Fernandes, Valente, Almeida, Lima, Fonseca, and Maia 2022; Eagan et al. 2022; Acuff, Dainton, Dhakal, Kiprotich, and Aldrich 2021).

Efforts to promote sustainability in pet food production are critical to the long-term health of pets and the environment (Kumar et al. 2024). Swanson et al. (2013) highlighted the uniqueness of the pet food industry, which is closely related to livestock production and the human food system (Swanson et al. 2013). They suggest that a coordinated industry-wide effort to reduce pollution and achieve sustainable breakthroughs can be further pursued by ingredient buyers, formulators, and nutritionists through improved formulation design, proactive consumer education, and marketing strategies, all of which can bring about a more sustainable pet food system (Swanson et al. 2013). Meeker et al. (2015) also highlighted the important impact of refined ingredients on the sustainability, quality, and safety of pet food (Meeker et al.

2015). Deng et al. (2015) discussed future aspects and perceptions of companion animal nutrition and sustainability, addressing key issues such as dog and cat metabolism, aging, and clinical disease, and advances in gut microbiome research (Deng et al. 2015).

Research exploring consumer attitudes toward the environmental sustainability of pet food is also an area deserving close attention, as current evidence-based science shows that consumers' concern for sustainability continues to rise, with an emerging deeper understanding of the issue (Swanson et al. 2013). In terms of grain-free diets and sustainability of pet food, the study said there is remaining work to be done in educating the public about what to feed their pets (Conway et al. 2018). Eagan et al. (2022) studied the sustainability of pet food using phages and explored consumer attitudes towards this approach. They found that most participants lacked confidence and expressed serious concerns about food safety. (Eagan et al. 2022). In addition, Acuff et al. (2021) discussed that veterinarians play an active role in promoting sustainability in pet food by educating pet owners about sustainability, guiding customers through scientific feeding and providing dietary advice (Acuff et al. 2021). Fantechi et al. (2023) explored the importance of consumer preferences in promoting sustainable practices, finding that people who value product sustainability are willing to pay more for pet food, and if the benefits of such food are publicised and popularised in advance, consumers are even more inclined to accept and choose it (Fantechi et al. 2023).

Pet food production is already sustainable in some ways (Acuff et al. 2021). For example, some companies have reduced their consumption of natural resources and energy, by making pet food using by-products from human food production (Acuff et al. 2021). The pet food industry also uses all kinds of energy efficiently, even better than some human food processing industries (Acuff et al. 2021). Cabrita et al. (2022) explore the potential of microalgal species as alternative food resources for dogs, highlighting the importance of assessing the relationship between nutritional composition and metabolomics profiles, along with the nutritional

requirements of dogs (Cabrita et al. 2022). In the pet food packaging sector, Kumar et al. (2024) found that there are both opportunities and challenges for sustainability in the US market, the pet food sector is in line with global sustainability goals, being the importance of sustainable practices emphasized (Kumar et al. 2024). The study focuses on the packaging of pet products (Kumar et al. 2024), eco-friendly packaging can not only reduce the impact on the environment but also attract consumers and ensure product quality, which is a win-win situation for consumers and enterprises. The pet industry can continue to innovate in sustainability with R&D efforts contribution (Kumar et al. 2024).

To promote the long-term sustainability of the pet food industry, effective measures need to be taken (Acuff et al. 2021). Enterprises should opt for environmentally friendly produced raw materials and packaging materials (Acuff et al. 2021). Pet owners also need to improve their feeding practices to reduce unnecessary nutrient intake and avoid overfeeding (Acuff et al. 2021). Furthermore, there is the need of improvement of the efficiency of waste and resource management (Acuff et al. 2021). Achieving these goals requires collaboration upstream and downstream of the pet food industry, including input from suppliers, technological innovation from producers, and consumer choice of sustainable products (Acuff et al. 2021). However, despite the potential, many challenges remain when promoting sustainable practices in the pet food industry (Acuff et al. 2021). Some consumers still hold negative attitudes towards novel raw materials and cannot fully trust such products, factors that limit the implementation of sustainability measures (Acuff et al. 2021). In addition, many pet owners fail to fully appreciate the direct impact of their consumption behaviour and decisions on the sustainability of the industry (Acuff et al. 2021). Future improvements in the pet food industry will largely depend on pet owners' interest and action on sustainability issues (Acuff et al. 2021).

7. Research Questions

In this thesis, we aim to explore the impact of five attributes (availability, health benefits, organic quality, sustainability, and price) on consumers' decisions when buying dog food. To gain a more comprehensive and in-depth understanding of the Portuguese dog food market, with a particular focus on four dog food brands, we propose five research questions. These research questions were based on the current needs, on the theoretical basis of consumer behaviour research, and its practical significance within this market. These research questions are not only a deepening and extension of the consumer behaviour analysis, but also a powerful supplement to the research gaps in the Portuguese dog food market. By comprehensively analysing the influence of key attributes, this study aims to provide empirical support for brand strategies and development of the market. Furthermore, this thesis can serve as a theoretical foundation for future research.

Research question 1: What are the attributes that Portuguese consumers most value in dog food?

Green and Srinivasan (1978, 103) emphasized that the validity of conjoint analysis depends on the selection of attributes that are meaningful to the target audience, which can be reliably identified through interviews (Green and Srinivasan 1978, 103). Similarly, Gigauri (2019, 45) noted that perceptual mapping analysis relies on accurately determining the key factors consumers use to distinguish brands and products, which can be successfully revealed in initial qualitative research (Gigauri 2019, 45). Given that, our analysis begins with an examination of key attributes influencing dog food purchasing decisions in Portugal. For the first research question, preliminary interviews were conducted, which will be more in-depth described in the next chapter. This research question would serve as a base for our study,

allowing us to identify the most relevant attributes that influence dog food purchase decisions in the Portuguese market.

Guided by Freeman's findings, which highlighted that dog food consumers are often influenced by multiple attributes, five attributes were selected as a foundation for our further study (Freeman et al. 2013; Buff et al. 2014). These attributes are availability, health benefits, organic quality, price, and sustainability, the obtained attributes.

Research question 2: What are the preferences of Portuguese consumers regarding attributes they value the most in dog food?

We further examine the relative importance of those attributes in the consumer decision-making process. Drawing on insights from Boya and Dotson, we aim to deeper analyse the answer to the first question, exploring the trade-off and preference patterns of consumers across different attributes (Boya, Dotson and Hyatt 2015; Tesfom and Birch 2010). Through this question, we seek to explore each dog food attributes and respective evels to maximise consumer preferences.

Research question 3: How do consumers perceive the scientific and developmental aspects of each brand's dog food production?

As pet owners become increasingly aware of the health benefits derived from appropriate nutrition, the pet food market is witnessing a growing demand for scientifically designed products (Burger and Baker 2020). According to Chrysochou and Krystallis (2011), products that present credible scientific evidence are more likely to gain consumers' trust. This is particularly important in the pet food market, where brands often highlight scientific advancements in product development to build consumer trust (Grunert andWills 2007).

Consumer behaviour in the pet food market is increasingly influenced by the desire for products supported by scientific evidence, consequently, brands that effectively communicate the science base behind their product production are more likely to earn consumer trust and loyalty (Alexander 2019). Similarly, Davidson and Treadwell (2017) emphasize that consumers are more inclined to trust health-related products when they are marketed with credible scientific information.

In this sense, the presented research question aims to explore how each brand is associated in terms of having science, innovation and other factors behind their product developments.

Research question 4: How do consumers perceive each brand's essence, reputation, and emotional appeal?

Brand essence refers to the core values associated with a brand, influencing consumer expectations and connections (Kapferer 2003). Additionally, a positive brand reputation, as noted by Fombrun (1996) fosters trust, enhancing long-term consumer loyalty and repeat purchases. Emotional appeal, as discussed by Kahneman (2011), plays a relevant role in shaping consumer decisions, often outweighing rational considerations like price and availability. In markets such as pet food, consumers consider their pets as family members, turning emotional factors such as care and responsibility central to the decision-making process (Freeman et al. 2013; Jyrinki and Leipamaa-Leskinen 2005). Furthermore, Social Identity Theory suggests that consumers use their purchases to express their values, further sustaining the importance of their emotional connection to brands (Tajfel and Turner 1986).

Thus, studying the perception of consumers about the essence, reputation, and emotional appeal of each brand is critical to a more comprehensive and deep understanding of the preferences and behaviours that consumers exhibit when purchasing dog food.

Research question 5: How do demographic factors such as age, occupation, and income affect the willingness to pay a premium for sustainable dog food products?

Demographic factors are being examined through this research question which is focused on localised research on the global hot topic of sustainable development. In recent years, with consumer concern for environmental protection, sustainability has become an attribute valued by the pet food industry. (Swanson et al. 2013; Meeker and Meisinger 2015; Deng and Swanson 2015; Cabrita et al. 2022; Eagan et al. 2022; Acuff et al. 2021). The study by Mota-Gutierrez et al. (2024) shows that consumers with higher incomes are more inclined to pay a premium for sustainable products and that the younger generations are more sensitive to environmental protection issues. Therefore, we choose to delve into the impact of demographic factors. Through Statista, we identified key demographic trends in Portugal, such as the steady increase in average wages across Europe, which has improved consumers' ability to afford higher-priced products. Given this factor, we believe it is valuable to study the willingness to pay a premium for sustainability within this market (Statista, 2023).

By understanding the different behaviours within different demographic groups, companies can better adjust their marketing strategies, product pricing and brand positioning related to sustainable product.

8. References

Acuff, H. L., Dainton, A. N., Dhakal, J., Kiprotich, S., and Aldrich, G. "Sustainability and Pet Food: Is There a Role for Veterinarians?" *The Veterinary Clinics of North America: Small Animal Practice* 51, no. 3 (2021): 563–581. Accessed November 7, 2024

<https://www.sciencedirect.com/science/article/pii/S0195561621000206?via%3Dihub>.

Advance: expert nutrition for dogs and cats / Advance Affinity. (n.d.). Accessed October 4, 2024 www.advance-affinity.com. <https://www.advance-affinity.com/en/homepage>

Alexander, P. "Consumer Behaviour in the Pet Food Industry: A Study of Factors Influencing Purchasing Decisions." *Journal of Consumer Behaviour* 18, no. 1 (2019): 51–61. Accessed October 18, 2024 <https://doi.org/10.1080/10942912.2021.1879133>.

Allied Market Research. *Vegan Pet Food Market Size, Share & Analysis (2020–2030)*. 2020. Accessed November 14, 2024 <https://www.alliedmarketresearch.com/vegan-pet-food-market-A15847>.

American Pet Products Association (APPA). *Pandemic Impact on Pet Ownership in North America*. 2023. Accessed October 16, 2024. <https://www.americanpetproducts.org>.

Baldwin, John R., Michael R. Murray, and Keith F. Widaman. "Researcher Bias in Secondary Data Analysis: Implications and Mitigation Strategies." *European Journal of Epidemiology* 37, no. 2 (2022): 123–134. Accessed December 7, 2024
<https://doi.org/10.1007/s10654-021-00839-0>.

Basson, S. *Measuring the Effect of Loyalty Programmes on a Leading Pet Food Brand*. 2014. Accessed November 13, 2024
<https://www.semanticscholar.org/paper/Measuring-the-effect-of-loyalty-programmes-on-a-pet-Basson/6dba37ef73eba00dabf5cdf1083f4786e65cf918v>.

Boya, U. O., Dotson, M. J., and Hyatt, E. M. "A Comparison of Dog Food Choice Criteria Across Dog Owner Segments: An Exploratory Study." *International Journal of Consumer Studies* 39, no. 1 (2015): 74–82. Accessed October 6, 2024
<https://doi.org/10.1111/ijcs.12145>.

Brookings Institution. "What Do Stock Market Fluctuations Mean for the Economy?" 2018. Accessed December 4, 2024
<https://www.brookings.edu>.

Buff, P. R., Dodds, J. W., Morrison, M. C., and Sawaya, M. E. "Consumer Perception of Pet Foods." *Journal of Veterinary Behaviour* 9, no. 4 (2014): 171–177. Accessed October 27, 2024
<https://doi.org/10.1016/j.jveb.2014.04.001>.

Burger, H., and Baker, A. "Health and Well-Being in Pet Food: Consumer Behaviour and the Growing Demand for Scientifically Formulated Products." *Journal of Animal*

Science and Technology 62, no. 3 (2020): 145–158. Accessed November 4, 2024

<https://doi.org/10.1007/s13132-023-01490-8>.

Cabrita, A. R., Guilherme-Fernandes, J., Valente, I., Almeida, A., Lima, S. A.,
Fonseca, A., and Maia, M. "Nutritional Composition and Untargeted Metabolomics
Reveal the Potential of *Tetrademus obliquus*, *Chlorella vulgaris* and
Nannochloropsis oceanica as Valuable Nutrient Sources for Dogs." *Animals* 12, no.
10 (2022): Article 115323. Accessed November 17,
2024 <https://www.mdpi.com/2076-2615/12/19/2643>.

Carifio, J., and Perla, R. "Ten Common Misunderstandings, Misconceptions,
Persistent Myths, and Urban Legends about Likert Scales and Likert Response
Formats and Their Antidotes." *Journal of Social Sciences* 3, no. 3 (2007): 106–116.
Accessed November 8, 2024

Chrysochou, P., and Krystallis, A. "Consumer Perception of Food Quality in a New
Product Market: The Case of Functional Foods." In *Advances in Consumer Research*,
vol. 38, edited by G. J. L. Kjeldgaard, S. Askegaard, and R. B. Wilkie, 315–320.
Association for Consumer Research, 2011. Accessed November 12, 2024
https://link.springer.com/chapter/10.1007/978-3-031-09421-7_10.

Conjoint.ly. "Classification of Conjoint Analysis." Accessed October 22, 2024.
<https://conjointly.com/guides/classification-of-conjoint-analysis/#by-type-of-design>.

Conjointly. "What Is Conjoint Analysis?" *Conjointly*, April 19, 2017. Accessed October 22, 2024. <https://conjointly.com/guides/what-is-conjoint-analysis/>.

Conjointly. "What Is Goodness of Fit?" *Conjointly*, November 29, 2019. Accessed December 10, 2024. <https://conjointly.com/faq/what-is-goodness-of-fit/>.

Conway, D. M. P., and Saker, K. E. "Consumer Attitude Toward the Environmental Sustainability of Grain-Free Pet Foods." *Frontiers in Veterinary Science* 5 (2018): Article 79. Accessed December 2, 2024.

<https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2018.00170/full>.

"Country Report: Portugal – Portuguese Pet Food Producers Tap into Potential." *Global Pet Industry*. Accessed November 10, 2024.

<https://globalpetindustry.com/article/country-report-portugal-portuguese-pet-food-producers-tap-into-potential>.

Davidson, R., and Treadwell, E. "The Impact of Scientific Branding on Consumer Perception of Health-Related Products." *Ecoforum Journal* 6, no. 4 (2017): 234–240. Accessed November 15, 2024.

<https://www.ecoforumjournal.ro/index.php/eco/article/viewFile/1407/834>.

Deloitte. *Global Consumer Sustainability Survey 2022*. Deloitte Insights, 2022, 45–62. Accessed on December 4, 2024 <https://www2.deloitte.com>.

Deng, P., and Swanson, K. S. "Companion Animals Symposium: Future Aspects and Perceptions of Companion Animal Nutrition and Sustainability." *Journal of Animal Science* 93, no. 3 (2015): 823–834. Accessed December 2, 2024.

<https://pubmed.ncbi.nlm.nih.gov/26020861/>.

Dillon, W. R., Frederick, D. G., and Tang, Z. "Decision Issues in Building Perceptual Product Spaces with Multi-Attribute Rating Data." *Marketing Science* 9, no. 2 (1990): 112–127. Accessed November 23, 2024 <https://doi.org/10.1287/mksc.9.2.112>.

Dotson, M. J., and Hyatt, E. M. "Understanding Dog-Human Companionship." *Journal of Business Research* 61, no. 5 (2008): 457–466. Accessed on November 24, 2024 https://www.researchgate.net/publication/222763999_Understanding_dog-human_companionship.

Dovetail. "Conjoint Analysis—Overview, Types, Uses & Examples." *Dovetail*, April 1, 2024. Accessed December 7, 2024. <https://dovetail.com/market-research/conjoint-analysis/>.

Duhan, D. F., Johnson, S. D., Wilcox, J. B., and Harrell, G. D. "Influences on Consumer Use of Word-of-Mouth Recommendation Sources." *Journal of the Academy of Marketing Science* 25 (1997): 283–295.

<https://link.springer.com/article/10.1177/0092070397254001>.

Eagan, B. H., Wang, S., Hall, N., and Protopopova, A. "Consumer Attitudes Toward Bacteriophage Applications to Pet Food." *Frontiers in Veterinary Science* 9 (2022):

Article 102. Accessed November 15, 2024.

<https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2022.921508/full>.

Euromonitor International. *Pet Food Premiumization and Consumer Behaviour Trends*. 2023, 78–92. Accessed December 4, 2024. <https://www.euromonitor.com>.

Euronews. "Pet Industry Soars in Growth." *Euronews*, January 17, 2024. October 7, 2024. <https://www.euronews.com/business/2024/01/17/pet-industry-soars-in-growth>.

"Europe Pet Care Products Market." Accessed October 7, 2024.

<https://www.futuremarketinsights.com/reports/europe-pet-care-products-market>.

"Europe Pet Food Market." Accessed October 7, 2024.

<https://www.mordorintelligence.com/industry-reports/pet-food-market-in-europe-industry/market-size>.

Expert Market Research. *Dog Food Market Size, Share, Price, Trends, Growth, Analysis, Report, Forecast (2023–2032)*. 2023. Accessed October 7, 2024.

<https://www.expertmarketresearch.com/reports/dog-food-market>.

Fantechi, T., Califano, G., Caracciolo, F., and Contini, C. "Puppy Power: How Neophobia, Attitude Towards Sustainability, and Animal Empathy Affect the Demand for Insect-Based Pet Food." *Food Research International* 162 (2023): Article 112056. Accessed November 21, 2024.

https://www.researchgate.net/publication/376620754_Puppy_Power_How_Neophobia_Attitudes_towards_Sustainability_and_Animal_Empathy_Affect_the_Demand_for_Insect-Based_Pet_Food.

Fernandes, M., and Santos, L. "Consumer Behaviour in Portugal's Pet Industry Post-COVID-19." *European Journal of Marketing in Animal Welfare* 39, no. 1 (2023): 77–91. Accessed November 8, 2024.

Fink, Arlene. *How to Conduct Surveys: A Step-by-Step Guide*. 6th ed. Thousand Oaks, CA: Sage Publications, 2017. Accessed November 13, 2024.

First Insight. "The State of Consumer Spending: Gen Z Shoppers Demand Sustainable Retail." Accessed December 4, 2024. <https://www.firstinsight.com/white-papers-posts/gen-z-shoppers-demand-sustainability>.

Fombrun, C. J. *Reputation: Realizing Value from the Corporate Image*. Harvard Business Review Press, 1996. Accessed November 21, 2024.

"Food Access & Availability." Accessed November 21, 2024.

<https://www.tetrapak.com/sustainability/focus-areas/food-access-availability-and-resilience>.

"Food Availability." *ScienceDirect*, 2018. Accessed November 21, 2024.

<https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/food-availability>.

Food Industry Executive. "Understanding and Cultivating Consumer Trust in Pet Food Brands." *Food Industry Executive*, April 2020. Accessed on November 24, 2024 <https://foodindustryexecutive.com/2020/04/understanding-and-cultivating-consumer-trust-in-pet-food-brands>.

Fortune Business Insights. *Pet Food Market Size, Share & Trends Analysis Report*. 2024. Accessed November 7, 2024. <https://www.fortunebusinessinsights.com>.

Freeman, L. M., Chandler, M. L., Hamper, B. A., and Weeth, L. P. "Current Knowledge About the Risks and Benefits of Raw Meat-Based Diets for Dogs and Cats." *Journal of the American Veterinary Medical Association* 243, no. 11 (2013): 1549–1558. Accessed November 8, 2024. <https://doi.org/10.2460/javma.243.11.1549>.

Gaffney, D., and Matias, J. N. "Caveat Emptor, Computational Social Science: Large-Scale Missing Data in a Widely-Published Reddit Corpus." *PLOS ONE* 13, no. 7 (2018): e0200162. Accessed November 21, 2024. <https://doi.org/10.1371/journal.pone.0200162>.

GfK. *Pet Food Market Trends: Premiumization and Humanization*. 2016, 12–34.

Gigauri, Iryna. "Theoretical Foundation and Practice of Perceptual Mapping." *Marketing and Management of Innovations* 3 (2019): 45–55. Accessed November 23, 2024 <https://doi.org/10.21272/mmi.2019.3-04>.

Global Business Insights. *Pet Humanization Trends and Consumer Preferences in the Global Market*. 2023. Accessed October 8, 2024.

<https://www.globalbusinessinsights.com>.

Gong, Y., Xiao, J., Tang, X., and Li, J. "How Sustainable Marketing Influences Customer Engagement and Sustainable Purchase Intention? The Moderating Role of Corporate Social Responsibility." *Frontiers in Psychology* 14 (2023): Article 6-8.

Accessed November 16, 2024.

https://www.researchgate.net/publication/369288677_How_sustainable_marketing_influences_the_customer_engagement_and_sustainable_purchase_intention_The_moderating_role_of_corporate_social_responsibility.

Grand View Research. *Pet Food Market Size, Share & Trends Analysis Report*. 2023.

Accessed October 9, 2024. <https://www.grandviewresearch.com>.

Green, P. E., and Srinivasan, V. "Conjoint Analysis in Consumer Research: Issues and Outlook." *Journal of Consumer Research* 5, no. 2 (1978): 103–123. Accessed

December 7, 2024. <https://academic.oup.com/jcr/article-abstract/5/2/103/1805825>.

Grunert, K. G., Hieke, S., & Wills, J. (2014). Sustainability labels on food products:

Consumer motivation, understanding and use. *Food Policy*, 44, 177–189. Accessed on

November 17, 2024. Accessed November 18, 2024.

<https://doi.org/10.1016/j.foodpol.2013.12.001>

Grunert, K. G., and Wills, J. M. "Perceptions of Health Claims in the European Union: A Review of the Literature." *Food Research International* 40, no. 3 (2007): 281–289. Accessed October 8, 2024. <https://doi.org/10.1016/j.foodres.2006.11.006>.

Hawkins, R., et al. "Pets and Mental Health During the COVID-19 Pandemic." *Journal of Health Psychology* 26, no. 4 (2021): 670–682. Accessed October 8, 2024. <https://doi.org/10.1177/1359105321990793>.

HBS Online. "What Is Conjoint Analysis & How Can You Use It?" *Business Insights Blog*, December 18, 2020. Accessed December 02, 2024 <https://online.hbs.edu/blog/post/what-is-conjoint-analysis>.

Hsu, H.-Y., and Wang, S.-K. "Using Google Forms to Collect and Analyze Data." *Science Scope* 40, no. 6 (2017): 22–25. Accessed November 23, 2024 <https://books.google.pt/books?hl=pt-PT&lr=&id=nk8bpTjutPQC>.

Hughner, Renée Shaw, Pierre McDonagh, Andrea Prothero, Clifford J. Shultz II, and Julie Stanton. "Who Are Organic Food Consumers? A Compilation and Review of Why People Purchase Organic Food." *Journal of Consumer Behaviour* 6, no. 2–3 (2007): 94–110. Accessed on December 4, 2024. <https://doi.org/10.1002/cb.210>.

Jeong, S. *Curation Subscription Box Services: Implications for the Pet Industry*. Master's thesis, 2022. Accessed November 8, 2024. https://digital.library.unt.edu/ark%3A/67531/metadc2048697/m2/1/high_res_d/JEONG-THESIS-2022.pdf.

Jyrinki, H., and Leipamaa-Leskinen, H. "Pets as Extensions of the Self: A Consumer Perspective." *Journal of Consumer Behaviour* 4, no. 2 (2005): 123–131. Accessed November 8, 2024. <https://doi.org/10.1002/cb.163>.

Kahneman, D. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux, 2011. Accessed November 13, 2024.

Kapferer, J.-N. *The New Strategic Brand Management: Creating and Sustaining Brand Equity Long Term*. 4th ed. London: Kogan Page, 2008. Accessed November 13, 2024.

Kaur, S., and Das, M. "Functional Foods: An Overview." *Food Science and Biotechnology* 20, no. 4 (2011): 861–875. Accessed November 8, 2024. <https://doi.org/10.1007/s10068-011-0121-7>.

Kemp, E., Kennett-Hensel, P. A., & Kees, J. (2017). Pulling the plug on greenwashing: The effect of information clarity on consumer purchase intentions. *Journal of Advertising*, 39(1), 45–57. Accessed on November 24, 2024. <https://doi.org/10.2753/JOA0091-3367390104>

Kim, K.-H. "Importance-Performance Analysis (IPA) on the Pet-Food Selection Attributes by the Brand Awareness of Pet-Food." *Journal of the Korea Academia-Industrial Cooperation Society* 23, no. 12 (2022): 287–295. Accessed October 12, 2024.

https://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE11179805&language=ko_KR&hasTopBanner=true.

Kovács, I., and Keresztes, E. R. "Perceived Consumer Effectiveness and Willingness to Pay for Credence Product Attributes of Sustainable Foods." *Sustainability* 14, no. 7 (2022): 4338. Accessed October 12, 2024. <https://doi.org/10.3390/su14074338>.

Krosnick, Jon A., and Stanley Presser. "Question and Questionnaire Design." In *Handbook of Survey Research*, 2nd ed., edited by Peter V. Marsden and James D. Wright, 263–313. Bingley, UK: Emerald Group Publishing, 2010. Accessed on November 21, 2024 <https://web.stanford.edu/dept/communication/faculty/krosnick/docs/2010/2010%20Handbook%20of%20Survey%20Research.pdf>.

Kumar, R., Goswami, M., and Pathak, V. "Innovations in Pet Nutrition: Investigating Diverse Formulations and Varieties of Pet Food." *MOJ Food Process Technology* 12, no. 1 (2024): 86–89. Accessed on November 24, 2024

<https://medcraveonline.com/MOJFPT/innovations-in-pet-nutrition-investigating-diverse-formulations-and-varieties-of-pet-food-mini-review.html>.

Kumar, R., Goswami, M., and Pathak, V. "Promoting Pet Food Sustainability: Integrating Slaughterhouse By-Products and Fibrous Vegetables Waste." *Acta Scientific Veterinary Sciences* 6, no. 1 (2024): 45–54. Accessed October 12, 2024.

https://www.researchgate.net/publication/380183946_Promoting_Pet_Food_Sustainability_Integrating_Slaughterhouse_By-products_and_Fibrous_Vegetables_Waste.

Lahner, P., Koppel, K., and Chambers, D. H. "Understanding Pet Owners' Decision-Making Processes Regarding Pet Food: A Cross-Sectional Study." *Journal of Food Products Marketing* 26, no. 3 (2020): 202–220. Accessed October 12, 2024.

<https://doi.org/10.1080/10454446.2020.1718601>.

Li, S., Chen, X., Ren, Y., and Glauben, T. "The Impact of Demographic Dynamics on Food Consumption and Its Environmental Outcomes: Evidence from China." *Journal of Integrative Agriculture* 23, no. 2 (2023): 414–429. Accessed October 15, 2024.

<https://doi.org/10.1016/j.jia.2023.11.017>.

Lima, D., Ramos, R. F., and Oliveira, P. M. "Customer Satisfaction in the Pet Food Subscription-Based Online Services." *Electronic Commerce Research* 24, no. 5

(2024): 745–769. Accessed October 15, 2024. <https://doi.org/10.1007/s10660-024-09807-8>.

Louviere, Jordan J., David A. Hensher, and Joffre D. Swait. *Stated Choice Methods: Analysis and Applications*. Cambridge: Cambridge University Press, 2010, 112–134.

Accessed December 2, 2024.

Lummis, Jennifer. "The Future of Pet Food: Flexibility and Customisation." *Pet Food Processing*, 2017, 45–62. Accessed on November 24, 2024 Accessed December 7,

2024. <https://www.petfoodprocessing.net/articles/120-the-future-of-pet-food>.

Maitri, W. S., Suherlan, S., Prakosos, R. D. Y., and Subagja, A. D. "Recent Trends in Social Media Marketing Strategy." *Jurnal Minfo Polgan* 12, no. 1 (2023): 842–850.

Accessed October 12, 2024.

https://www.researchgate.net/publication/373341426_Recent_Trends_in_Social_Media_Marketing_Strategy.

Malhotra, N. K., and Dash, S. *Marketing Research: An Applied Orientation*. 7th ed.

Pearson, 2016. Accessed October 12, 2024.

"Marca PorSi | Intermarché." *Intermarche.pt*, 2024. Accessed October 14, 2024.

<https://www.intermarche.pt/porsi/>.

Mcfadden, D. "Conditional Logit Analysis of Qualitative Choice Behaviour."

Frontiers in Econometrics (1972): 105–142. Accessed December 2, 2024.

<https://ci.nii.ac.jp/naid/10007461386>.

Meeker, D. L., and Meisinger, J. L. "Companion Animals Symposium: Rendered Ingredients Significantly Influence Sustainability, Quality, and Safety of Pet Food."

Journal of Animal Science 93, no. 3 (2015): 835–847. Accessed October 26, 2024.

<https://pubmed.ncbi.nlm.nih.gov/26020862/>.

Michel, K. E., Bauer, J. E., and Van Doren, B. A. "Owners' and Veterinarians'

Perceptions of Nutrition for Health." *The Veterinary Journal* 176, no. 2 (2008): 177–

184. Accessed October 21, 2024. <https://doi.org/10.1016/j.tvjl.2008.01.003>.

Michel, K. E., et al. "Evaluation of Commercial and Homemade Diets for Dogs and Cats in the United States." *Journal of the American Veterinary Medical Association* 233, no. 11 (2008): 1699–1703. Accessed October 21, 2024.

<https://avmajournals.avma.org/view/journals/javma/233/11/javma.233.11.1699.xml>.

Mitchell, Robert Cameron, and Richard T. Carson. *Using Surveys to Value Public Goods: The Contingent Valuation Method*. Washington, DC: Resources for the Future, 1989, 25–47. Accessed December 3, 2024.

Morgan, L., et al. "COVID-19 and Pet Adoption Trends: A Global Perspective." *Veterinary Record* 187, no. 10 (2020): 458–464. Accessed October 18, 2024.

<https://doi.org/10.1136/vr.m1234>.

Morgunova, M., and Tu, N. T. *Does Packaging Influence the Consumer? The Impact of Packaging Design on Consumer Purchasing Behavior of Fast Moving Consumer Goods*. Master's thesis, Universidade Católica Portuguesa, 2017. Accessed October 28, 2024.

Mota-Gutierrez, J., Sparacino, A., Merlino, V. M., Blanc, S., Brun, F., Massimelli, F., Vassallo, E., Borra, D., and Massaglia, S. "Socio-Demographic and Cross-Country Differences in Attention to Sustainable Certifications and Changes in Food Consumption." *NPJ Science of Food* 8, no. 1 (2024). Accessed October 18, 2024.

<https://doi.org/10.1038/s41538-024-00274-x>.

Naakka, N. *Co-Creating Value in the Age of Digitalised Businesses – Case Study: The Dog Food and Treats Industry*. Bachelor's thesis, Metropolia University of Applied Sciences, 2021. Accessed October 18, 2024.

<https://www.theseus.fi/handle/10024/499823>.

Naakka, P. "Digital Transformation in the Pet Food Industry." *Pet Food Industry Journal* 34, no. 2 (2021): 12–25. Accessed October 27, 2024.

Nguyen, Tuan, Maria Johnson, and Peter Wilson. "Income and Professional Influence on Sustainable Consumer Behaviour." *Journal of Consumer Studies* 34, no. 2 (2020): 120–138. Accessed October 27, 2024. <https://doi.org/10.1002/jcs.2020.1245>.

"Number of Pet Dogs in Portugal from 2010 to 2023." *Statista*. Accessed October 15, 2024. <https://www.statista.com/statistics/515538/dog-population-europe-portugal/>.

Okin, G. S. "Environmental Impacts of Food Consumption by Dogs and Cats." *PLOS ONE* 12, no. 8 (2017): e0181301. Accessed November 19, 2024.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0181301>.

Oliver, R. L. "Whence Consumer Loyalty?" *Journal of Marketing* 63 (Special Issue, 1999): 33–44. Accessed October 18, 2024.

Orme, Bryan K. *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research*. Madison: Research Publishers LLC, 2010. Accessed

December 2, 2024. https://www.radar-survey.ru/radar-data/instruction/%5BBryan_K_Orme%5D_Getting_Started_with_Conjoint.pdf.

Paetz, Friederike. "The Impact of Premium Brand Positioning in Pet Food Markets." *International Journal of Market Research* 63, no. 3 (2021): 283–302. Accessed December 1, 2024. <https://doi.org/10.1177/1470785320983700>.

"Pet Care Post-COVID Trends in Europe: Sustainability Landscape." *Euromonitor*. Accessed October 28, 2024. <https://www.euromonitor.com/article/pet-care-post-covid-trends-in-europe-sustainability-landscape>.

"Pet Food Conference Report: Emerging Trends Propelling the Industry." *Pet Food Processing*, 2023. Accessed October 28, 2024. <https://www.petfoodprocessing.net/articles/17871-pet-food-conference-report-emerging-trends-propelling-the-industry>.

"Pet Food Industry: Global Trends in Sustainable Pet Food." *Pet Food Industry Journal*, 2023, 45–59. Accessed on November 19, 2024. <https://www.petfoodindustry.com>.

Petfood Industry. "How Premiumization Is Driving Pet Food Evolution." *Petfood Industry*, January 2020. Accessed on November 24, 2024. <https://www.petfoodindustry.com>.

"Pet Food Market." *Fortune Business Insights*, 2024. Accessed October 8, 2024.

<https://www.fortunebusinessinsights.com/industry-reports/pet-food-market-100554>.

Petplan. "The Portuguese Pet Ownership Surge During COVID-19." *Petplan*, 2024.

Accessed October 8, 2024. <https://www.petplan.co.uk>.

Philip Kotler and Kevin Lane Keller, *Marketing Management*, 15th ed. (Pearson, 2016) Accessed October 27, 2024.

Piracci, G., Casini, L., Contini, C., Stancu, C. M., and Lähteenmäki, L. "Identifying Key Attributes in Sustainable Food Choices: An Analysis Using the Food Values Framework." *Journal of Cleaner Production* 416 (2023): 137924. Accessed October 8, 2024. <https://doi.org/10.1016/j.jclepro.2023.137924>.

Poocharoen, S. "The Study on Consumer Behavior in Purchasing Dog Food and Perception Towards BARF for Dogs." *Thammasat University*, 2017. Accessed October 16, 2024.

Purina Institute. "A Holistic View of Sustainability in Pet Food." *Purina Institute Digest*, 7 (2024). Accessed on November 19, 2024

https://www.purinainstitute.com/sites/default/files/2024-11/Purina_Institute_Digest_Volume_7.pdf.

"Purina® - Alimentation pour chien et chat." Accessed December 4, 2024.

<https://www.purina.fr/marques/proplan>.

PwC. *Global Consumer Insights Survey 2024: Prioritizing Sustainability and Other Attributes*. 2024, 58–72. Accessed on December 2, 2024. <https://www.pwc.com>.

Reja, Urša, Katja Lozar Manfreda, Valentina Hlebec, and Vasja Vehovar. "Open-Ended vs. Close-Ended Questions in Web Questionnaires." *Developments in Applied Statistics* 19 (2003): 159–177. Accessed December 2, 2024

Rivaroli, S., Spadoni, R., and Bregoli, I. "What Grounds Our Loyalty Towards 'Authentic Brand Activism' of a Sustainable Food Brand?" *Sustainability* 14, no. 12 (2022): 7341. Accessed October 19, 2024 <https://doi.org/10.3390/su14127341>.

"Royal Canin - Alimentation équilibrée et de qualité pour chiens et chats." *Royal Canin FR*. Accessed December 15, 2024. <https://www.royalcanin.com/fr?srsId=AfmBOoq7hw4f1mO-sryH3QxDA90tDPR66cUIAcI9PEqqSQeGxs6XtmuB>.

Salanță, L. C., Uifălean, A., Iuga, C., Tofană, M., Crotova, J., Pop, O. L., Pop, C. R., Rotar, M. A., Bautista-Ávila, M., and González, C. V. "Valuable Food Molecules with Potential Benefits for Human Health." In *IntechOpen eBooks*, 2020. Accessed October 19, 2024 <https://doi.org/10.5772/intechopen.91218>.

Schiffman, L. G., and Kanuk, L. L. *Consumer Behaviour*. 7th ed. Upper Saddle River, NJ: Prentice Hall, 2000. Accessed November 18, 2024

Shafie, F. A., and Rennie, D. "Consumer Perceptions Towards Organic Food." *Procedia - Social and Behavioral Sciences* 49 (2012): 360–367. Accessed November 21, 2024 <https://doi.org/10.1016/j.sbspro.2012.07.034>.

Simonsen, J. E., Faskeno, G. M., and Lillywhite, J. M. "The Value-Added Dog Food Market: Do Dog Owners Prefer Natural or Organic Dog Foods?" *Journal of Agricultural Science* 6, no. 6 (2014). Accessed November 17, 2024 <https://doi.org/10.5539/jas.v6n6p86>.

Solomon, M. R. *Consumer Behavior: Buying, Having, and Being*. 13th ed. Pearson, 2020. Accessed October 17, 2024

Solomon, Michael R., Gary J. Bamossy, Søren T. Askegaard, and Margaret K. Hogg. *Consumer Behaviour: A European Perspective*. 5th ed. Harlow, UK: Pearson Education, 2013, 245–267. Accessed October 27, 2024

Son, K., and Son, K. "Purina Dog Food Review - Total Vet." *Total Vet*, October 31, 2024. Accessed October 19, 2024 <https://total.vet/Purina-pro-plan-dog-food-review/>.

Springer. "Psychological Influences on Consumer Behaviour." In *Marketing Psychology and Consumer Behaviour*. Accessed December 15, 2024. https://link.springer.com/chapter/10.1007/978-3-031-47515-3_2.

Statista. "Global Pet Ownership Statistics 2023." Accessed December 15, 2024. <https://www.statista.com>.

Statista. "Pet Food Market Worldwide - Statistics and Facts." Accessed December 15, 2024. <https://www.statista.com/topics/7429/pet-food-market-worldwide/>.

Statista. "Social Media Platforms Used by Age Group in Great Britain in 2023." Accessed December 15, 2024. <https://www.statista.com/statistics/1480562/social-media-platforms-used-by-age-group/>.

Statista. (n.d.). Gen Z and millennials: The generational gap in sustainable consumption. Accessed December 4, 2024. Retrieved from <https://www.statista.com/study/102352/gen-z-and-millennials-the-generational-gap-in-sustainable-consumption/>

Stoica, M., and Hickman, T. M. "A Social Identity Theory Perspective on Sustainable Brand Recommendation: The Case of Professional Service Providers." *Journal of Brand Strategy* 12, no. 3 (2023): 300–318. Accessed November 17, 2024. <https://ideas.repec.org/a/aza/jbs000/y2023v12i3p300-318.html>.

StrategyHelix. "Market Outlook: Portuguese Pet Food Industry." *StrategyHelix*, 2024. Accessed October 6, 2024. <https://www.strategyhelix.com>.

Swanson, Kelly S., Rebecca A. Carter, Tracy P. Yount, Jan Aretz, and Preston R. Buff. "Nutritional Sustainability of Pet Foods." *Advances in Nutrition* 4, no. 2 (2013): 141–150. Accessed November 17, 2024. <https://doi.org/10.3945/an.112.003335>.

Sweeney, Jillian C., and Joffre Swait. "The Effects of Brand Credibility on Customer Loyalty." *Journal of Retailing and Consumer Services* 15, no. 3 (2008): 179–193. Accessed November 17, 2024.

Szakály, Z., Kovács, S., Pető, K., Huszka, P., and Kiss, M. "A Modified Model of the Willingness to Pay for Functional Foods." *Appetite* 138 (2019): 94–101. Accessed on November 17, 2024. <https://doi.org/10.1016/j.appet.2019.03.020>.

Tajfel, H., and Turner, J. C. "The Social Identity Theory of Intergroup Behaviour." In *Psychology of Intergroup Relations*, edited by S. Worchel and W. G. Austin, 7–24. Chicago: Nelson-Hall, 1986. Accessed October 6, 2024

Tengpongsathon, T., and Sarun, W. "Application of Analytical Hierarchy Process for Consumer Preference on Pet Food Product in Thailand." *ResearchGate*, 2020. Accessed October 18, 2024

https://www.researchgate.net/publication/349240842_Application_of_Analytical_Hierarchy_Process_for_consumer_preference_on_pet_food_product_in_Thailand.

"The Portuguese Pet Industry: An Overview." *Global Pet Industry*. Accessed October 5, 2024 <https://globalpetindustry.com/article/portuguese-pet-industry-overview>.

Tian, Y., and Kamran, Q. "A Review of Antecedents and Effects of Loyalty on Food Retailers Toward Sustainability." *Sustainability* 13, no. 23 (2021): 13419. Accessed November 22, 2024 <https://doi.org/10.3390/su132313419>.

Varian, Hal R. *Intermediate Microeconomics: A Modern Approach*. 8th ed. New York: W.W. Norton & Company, 2010. Accessed November 22,

<https://archive.org/details/hal-r.-varian-intermediate-microeconomics-a-modern-approach-8th-edition-w.-w.-norton-co.-2010/page/x/mode/2up>

Verified Market Reports. "Insect-Based Pet Food Market Size and Forecast (2023–2030)." *Verified Market Reports*, 2023. Accessed October 30, 2024

<https://www.verifiedmarketreports.com/product/insect-based-pet-food-market/>.

Vermeulen, B., Goos, P., and Vandebroek, M. "Models and Optimal Designs for Conjoint Choice Experiments Including a No-Choice Option." *International Journal of Research in Marketing* 25, no. 2 (2008): 94–103. Accessed December 1, 2024

<https://doi.org/10.1016/j.ijresmar.2007.12.004>.

Vriens, M., Wedel, M., and Ramaswamy, V. "Latent Class Metric Conjoint Analysis." *Journal of Marketing Research* 28, no. 3 (1991): 277–291. Accessed December 1,

2024. <https://www.jstor.org/stable/40216264>.

Wang, Yiwen, Chenglin Zhang, and Yuanyuan Li. "The Impact of Product Description on Consumer Purchase Intentions: An Empirical Analysis." *Journal of Consumer Behaviour* 20, no. 6 (2021): 1506–1519. Accessed on November 24, 2024.

<https://doi.org/10.1002/cb.1956>.

Watson, P. E., Thomas, D. G., Bermingham, E. N., Schreurs, N. M., and Parker, M. E.

"Drivers of Palatability for Cats and Dogs—What It Means for Pet Food

Development." *Animals* 13, no. 7 (2023): 1134. Accessed on November 24, 2024

<https://doi.org/10.3390/ani13071134>.

Weller, Joe. "Brand Positioning." *Smartsheet*, 2023. Accessed November 30, 2024

<https://www.smartsheet.com/content/brand-positioning>.

"What Is Conjoint Analysis & How Can You Use It? | HBS Online." 2020. Business Insights Blog. December 18, 2020. Accessed October 4,

2024 <https://online.hbs.edu/blog/post/what-is-conjoint-analysis>

Whole Foods Market. "Gen Z Is Hungry for Transparency in Food Sustainability and Quality Amid Climate Concerns, According to New Whole Foods Market Survey."

Business Wire (English), September 23, 2024. Accessed via YouGov survey.

Accessed October 16, 2024

Wilkins, J. L., Bowerman, K. M., and Boyce, C. J. "The Role of Pet Food Visual Branding in Consumer Decision-Making." *Journal of Retailing and Consumer*

Services 49, no. 3 (2019): 235–243. Accessed November 3, 2024

<https://doi.org/10.1016/j.jretconser.2019.01.008>.

Williams, A., Williams, B., Hansen, C. R., and Coble, K. H. "The Impact of Pet Health Insurance on Dog Owners' Spending for Veterinary Services." *Animals*

(*Basel*) (2020): 1–12. Accessed October 19, 2024

<https://pmc.ncbi.nlm.nih.gov/articles/PMC7401533/>.

World Economic Forum. *The Global Sustainability Outlook 2022: Balancing Affordability and Ethical Choices*. 2022, 32–48. Accessed on December 1, 2024. <https://www.weforum.org>.

World Population Review. "Dog Population by Country." *World Population Review*, 2024. Accessed October 6, 2024 <https://worldpopulationreview.com/country-rankings/dog-population-by-country>.

World Small Animal Veterinary Association. "Selecting a Pet Food for Your Pet: WSAVA Global Nutrition Toolkit." *World Small Animal Veterinary Association*, 2021. Accessed October 28, 2024

Xiao, W., Wang, X., and Li, X. "Factors Influencing Consumer Preferences for Pet Food: An Analysis of Urban Households in China." *Journal of Food Products Marketing* 27, no. 3 (2021): 272–285. Accessed October 9, 2024 <https://doi.org/10.1080/10454446.2021.1909864>.

Xu, Z. "Analysis of the Marketing Strategy of Royal Canin - Based on SWOT Analysis." *BCP Business & Management* 39 (2023): 178–185. Accessed November 11, 2024 <https://doi.org/10.54691/bcpbm.v39i.4061>.

Yuan, M. "The Application of Digital Marketing in the Operation and Development of Pet Stores in China." *Finance & Economics*, October 29, 2024. Accessed December 6, 2024 <https://www.semanticscholar.org/paper/The-Application-of->

[Digital-Marketing-in-the-and-of-](#)

[Yuan/90578b020aac27e4c22c1bac332ab1fb35169c29.](#)

Zélia Maria Torres. *Os Animais de Companhia e o Seu Impacto no Mercado Pet em Portugal*. 2022, 10–48. Accessed October 8, 2024

<https://repositorio.ipcb.pt/handle/10400.11/8205>.

Zniva, R., and Weitzl, W. "It's Not How Old You Are but How You Are Old: A Review on Aging and Consumer Behavior." *Management Review Quarterly* 66, no. 4 (2016): 267–297. Accessed October 21, 2024

———. 2024b. "Conjoint Analysis—Overview, Types, Uses & Examples." April 1, 2024. Accessed December 1, 2024 <https://dovetail.com/market-research/conjoint-analysis/>.

———. 2008b. "Models and Optimal Designs for Conjoint Choice Experiments Including a No-choice Option." *International Journal of Research in Marketing* 25 (2): 94–103. Accessed December 1, 2024 <https://doi.org/10.1016/j.ijresmar.2007.12.004>.

———. 2011b. "Functional Foods: An Overview." *Food Science and Biotechnology* 20 (4): 861–75. Accessed November 16, 2024 <https://doi.org/10.1007/s10068-011-0121-7>.

———. 2012b. “Consumer Perceptions Towards Organic Food.” *Procedia - Social and Behavioral Sciences* 49 (January): 360–67. Accessed November 17, 2024 <https://doi.org/10.1016/j.sbspro.2012.07.034>.

———. 2012b. “Consumer Perceptions Towards Organic Food.” *Procedia - Social and Behavioral Sciences* 49 (January): 360–67. Accessed November 28, 2024 <https://doi.org/10.1016/j.sbspro.2012.07.034>.

9. Appendix

Figure 16: Survey Design – Perceptual Mapping and Bonus Question

Section	Question
1. Screening Questions	1. Do you have or recently had a dog?
	2. Do you buy dog food in Portugal?

<p>2.Brand Familiarity and Attribute Ratings</p>	<p>3. Which of the following dog food brands are you familiar with? Please select all that apply.</p>
	<p>4. Science-Based: From 1 to 5 (1 being the lowest and 5 the highest) how science-based is the brand for you?</p>
	<p>5. Innovation: From 1 to 5 (1 being the lowest and 5 the highest) how innovative is the brand for you?</p>
	<p>6. Premium: From 1 to 5 (1 being the lowest and 5 the highest) how premium is the brand for you?</p>
	<p>7. Nutritive Balanced: From 1 to 5 (1 being the lowest and 5 the highest) how nutritive-balanced is the brand for you?</p>
	<p>8. Trustworthiness: From 1 to 5 (1 being the lowest and 5 the highest) how trustworthy is the brand for you?</p>
	<p>9. Attractiveness: From 1 to 5 (1 being the lowest and 5 the highest) how attractive is the brand for you?</p>
	<p>10. Reputation: From 1 to 5 (1 being the lowest and 5 the highest) how good reputable is the brand for you?</p>
	<p>11. Informative From 1 to 5 (1 being the lowest and 5 the highest) how informative is the brand for you?</p>
	<p>12. Flavour Variety: From 1 to 5 (1 being the lowest and 5 the highest) how flavour varied is the brand for you?</p>

3.Sustainability	13. Suppose your preferred dog food brand offered a sustainable product at a slightly higher price. Would you be interested in buying it?
	14. How much do you usually pay for a 10kg package of dry food?
	15. How much more would you be willing to pay for this sustainable dog food compared to your current choice? (consider a 10kg package of dry food)
	16. Would you consider try a different brand if it offers only sustainable dog food options?
4.Demographics	17. How old are you?
	18. What is your current occupation? (Please select the option that best describes your situation)
	19. What is your current monthly gross base salary? (Please select the range that best applies)

Figure 35: Willingness to Pay a Premium for a Sustainable Dog Food:

Descriptive Statistics

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
WTP	47	,00	20,00	5,7447	4,97043	24,705
Valid N (listwise)	47					

Figure 36: Distribution of the Amount Usually Paid for a 10kg Package of Dry Food

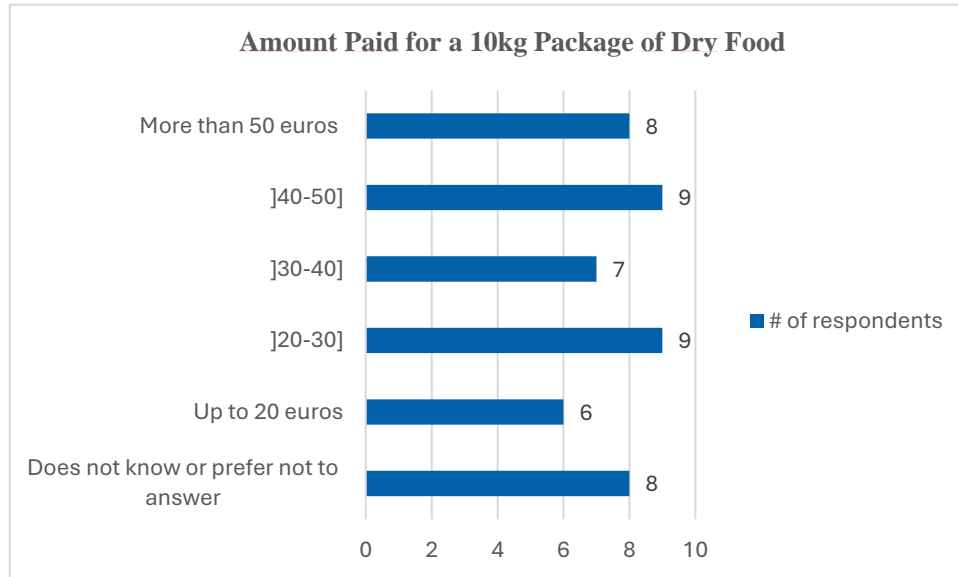


Figure 37: Willingness to Pay a Premium for a Sustainable Dog Food - Distribution for Age Groups: Descriptive Statistics

Descriptives

Amount_Willing_to_Pay

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
[16-27]	19	6,0526	4,88164	1,11993	3,6998	8,4055	,00	15,00
[28-43]	7	5,3571	4,19041	1,58383	1,4817	9,2326	,00	10,00
[44-59]	16	5,6250	4,60977	1,15244	3,1686	8,0814	,00	15,00
[60-78]	5	5,5000	8,36660	3,74166	-4,8885	15,8885	,00	20,00
Total	47	5,7447	4,97043	,72501	4,2853	7,2041	,00	20,00

Figure 38: Willingness to Pay a Premium for a Sustainable Dog Food - Distribution for Occupation Groups: Descriptive Statistics

Descriptives

WTP

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Student	11	5,4545	4,15605	1,25310	2,6625	8,2466	,00	15,00
Part-time Job	6	3,3333	4,08248	1,66667	-,9510	7,6176	,00	10,00
Full-time Job	27	6,7593	5,45148	1,04914	4,6027	8,9158	,00	20,00
Unemployed	3	2,5000	2,50000	1,44338	-3,7103	8,7103	,00	5,00
Total	47	5,7447	4,97043	,72501	4,2853	7,2041	,00	20,00

Figure 39: Willingness to Pay a Premium for a Sustainable Dog Food -

Distribution for Income Groups: Descriptive Statistics

Descriptives

WTP

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
820 or less	10	5,2500	4,77988	1,51153	1,8307	8,6693	,00	15,00
821-935	5	6,0000	3,79144	1,69558	1,2923	10,7077	2,50	10,00
936-1000	3	5,0000	5,00000	2,88675	-7,4207	17,4207	,00	10,00
1001-1200	3	5,8333	3,81881	2,20479	-3,6531	15,3198	2,50	10,00
1201-1500	3	5,0000	8,66025	5,00000	-16,5133	26,5133	,00	15,00
1501-1800	7	6,4286	4,53163	1,71280	2,2375	10,6196	,00	12,50
1801-2000	3	5,8333	8,03638	4,63980	-14,1301	25,7968	,00	15,00
2001-2500	2	7,5000	3,53553	2,50000	-24,2655	39,2655	5,00	10,00
2501-3200	4	5,6250	3,75000	1,87500	-,3421	11,5921	,00	7,50
3201-4000	2	7,5000	3,53553	2,50000	-24,2655	39,2655	5,00	10,00
4000 or more	5	5,0000	8,66025	3,87298	-5,7531	15,7531	,00	20,00
Total	47	5,7447	4,97043	,72501	4,2853	7,2041	,00	20,00