



In-Store Location of Sustainable Food Products: An Analysis of the Impact of Different Placement Strategies on its Demand

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1. INTRODUCTION

1.1 Topic Presentation

Consumers are becoming more and more sensitive to sustainability matters and not only on the products they buy but also on the way the industry is acting. The food manufacturing takes a big responsibility when speaking on this subject. Not only it is responsible for 25 percent of global greenhouse gas emissions, as it uses 50 percent of the world's tillable land and vanishes a big part of its freshwater (Gatzer & Ros, 2021). This concerns take a direct effect on the demand for sustainable products that increased four-times more than the other products on the market. As such, retailers must adopt their strategy to this new reality.

The pandemic situation, with COVID-19, has led consumers to realize how important it is to take care of themselves and of the environment. Consumers' consciousness of health, nourishment and sustainability when consuming products had become bigger (Eltze, 2021). It increased the demand for sustainable products as so as the willingness to pay for this kind of products, of the ones that could afford. In fact, businesses that were already taking strategies that protect the environment had demonstrated to be more resistant to realities such as the one we are living, with COVID-19 (Gatzer & Ros, 2021).

With the increase on the demand for sustainable products, it becomes important for brands and grocery stores to focus on the transparency of the information that they pass for the consumers and the way it reaches them (Mikko, 2021). Former studies defend that official stamps which identify organic products, give consumers a perception of trust, something that is valued by consumers when acquiring these distinct products (Denver & Christensen, 2014). At the same time, public policies and official badges can be compromised from its efficiency on giving information to the consumer when the assortment is larger. As the assortment of products becomes broader consumers will look for information from more products and as so consider more products for its set. Therefore, they will evaluate less attributes and consider only the principal ones, brand and price (Dörnyei, Krystallis, & Chrysochou, 2017). Once sustainability badges may not be considered as principal attributes, they might not influence the choice of buyers when dealing with large assortments. In these cases, subjective knowledge takes an important part on the consumption of organic products (Denver & Christensen, 2014). It is also studied that the amount of attributes can influence the evaluation on the product. One

extra attribute on the package can differentiate a product from its competitor, even more if it is a hedonic product (Dörnyei et al,2017). It means that one more attribute on a sustainable food product could lead the consumer to choose it instead of the product that is right on the side, but that was not produced and packed on sustainable standards. That is an interesting fact to study and expand.

Something to evaluate also would be the impact of the price on choosing products from the set. Higher prices that sustainable products usually have can be something that leads consumers to prefer non-sustainable products. That can also happen because these products are still perceived as special products (Bezawada & Pauwels, 2013), by the reason of being new or limited in the market still or by its price itself.

There are characteristics that can influence consumers on their purchasing decisions. Some of them were mentioned, associated to sustainable food products. From those inputs, it can be presumed that brands and market itself can have a play on that, but retailers can also be responsible for the choice of the consumers. For example, as stated on the study of Dörnyei et al (2017), if retailers promote areas with big assortment of products they may benefit the most well-known brands as consumers create some heuristics on the decision and they choose according to principal attributes such as brand and price.

Anecdotal evidence suggests that a strategy often followed by retailers seems to be the creation of targeted areas. This approach that defines smaller groups of products by its secondary attributes, may promote smaller brands that differ from its competitor and stand out by other attributes, apart from brand name and price. The main question remains on whether the consumers are willing to visit these targeted areas to get different products such as more sustainable food products instead of choosing it on its proper aisle.

1.2 Academic and Managerial Relevance

Food industry have been exploring our ecosystem in an unsustainable way as well as using methods that are not that healthy for us (Gatzer & Ros, 2021). The consumption of sustainable food products would contribute to protect our land and reduce part of the pollution that nowadays is created by this manufacturing. Since this perception and concern in the retail industry has been rising, an interesting topic to study would be around the perception that consumers have on sustainable food products and how they can be influenced to consume more of it, as substitutes of other items.

Despite that, a lot is known on the sustainable food products characteristics and on the awareness of the consumers for this subject, but less is known and studied regarding the impact of in-store location management for sustainable products on consumers preferences. To better understand the impact of different strategies on this subject on the consumers choice we need to understand consumers journey and its predisposition to look for and buy products on that route, as well as their perception and openness to sustainable products (Hui, Bradlow, & Fader, 2009).

The reality nowadays is that customers have a lot of information at their disposal when they want to take a decision regarding several products from the same category. It brings a difficult task for consumers when taking choices and also for retailers when selecting the assortment that they must have on their shelves, either by the number of products they should have, or by the type of products they should highlight, or even by the range of prices they must post (Dörnyei et al, 2017).

This study can help retailers on the adoption of new in-store placement strategies in order to promote the consumption of sustainable food products. By saying that, a possible effect might be to attract the less sustainable consumers for these emerging products or even turn the pro-sustainable consumers shopping more efficient and smarter. If this study allows us to draw conclusive results, a long-term strategy can be put in place to keep consumers and the sustainable market attractive. The possible strategy taken from future results can even motivate tier one brands to extend the organic market and make it grow in a sustainable way.

1.3 Problem Statement

This dissertation aims to identify which sustainable food products location strategies in retail stores promote more the consumption of that products. Specifically, it aims to study whether it is better to place sustainable food products in a targeted area versus spreading it among other products from the same category. The goal is to demonstrate which strategy captivates more consumers to buy sustainable food products as substitutes of non-sustainable food products and how.

1.4 Research Questions

To get a final answer on the problem statement presented there are some steps to go through. It is important to know how consumers perceived sustainable food products as

well as how much are they willing to choose them and what would take them doing it. It is also important to study consumers shopping journey and how the involvement of the consumers can have an impact on that.

The proposed Research Questions are:

Research Question 1: What are the most and less attractive attributes on sustainable food products that lead or do not lead consumers to buy and consume them?

Research Question 2: Which characteristics on food products consumers value most (brand, packaging, price, standards of production, etc)?

A good literature review will help to understand and come to a conclusion on how consumers perceive sustainable food products. Also, the survey will help on getting more answers for these questions.

Research Question 3: What do consumers value most on their shopping journey when they buy sustainable food products?

Research Question 4: Where do consumers look for sustainable food products? On targeted areas or stores, or on standard corridors, looking in each category of products for sustainable options?

To understand the consumers on these topics some literature review will be made to get an overview on the preferences of the consumers on the shopping journey as well as how the demand for sustainable products fits into it. A confirmation will be expected to be found on experimental analysis.

Research Question 5: Are consumers able to pay more for a product if it is in a targeted area?

The empirical test of this thesis, a survey answered by consumers, will look for an answer for this question.

Research Question 6: Pro-sustainability consumers, with high involvement on the subject, act differently from other consumers when they look for sustainable food products?

It is expected to find some literature on this subject to get a perspective on that. On the survey, this interrogation will also be tested to understand the impact that the involvement of consumers can have on their behaviours.

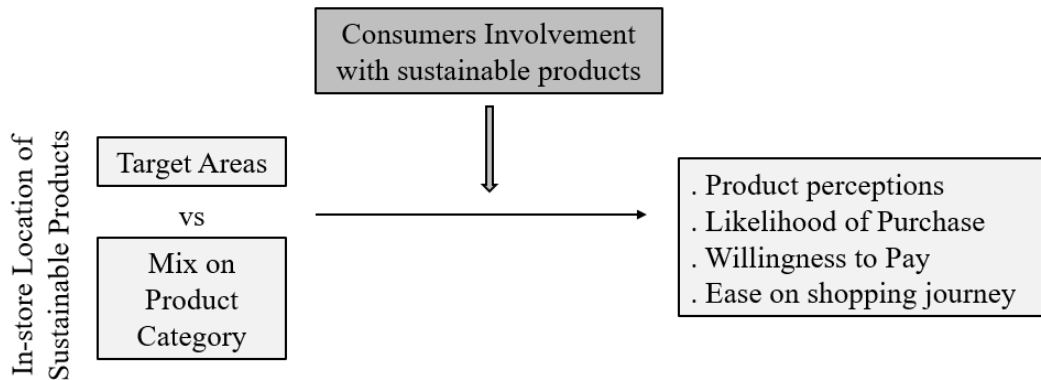


Figure 1 Conceptual Framework

1.5 Scope of Analysis

The study will be concentrated on answering the questions previously presented on the scope of retail stores, in regards to sustainable food products.

1.6 Methodology

A deductive method was used for this study. It started with a literature review that allowed the creation of different hypothesis. This first two stages were very important to create an effective and focused experiment.

For the experimental analysis, firstly different types of consumers were interviewed in regards to their perception on sustainability and the adoptions they might have taken in favour of this subject. After having this overview, a survey was created to get a broader picture on the topic. This survey was answered by Portuguese consumers. The questions were divided in several main topics: sustainable awareness, shopping habits, stimulus reactions and demography questions.

It was expected to share the questionnaire either to and from known people, and so among similar realities, and from college communication channels as well as on the researcher social channels. These two public channels may have reached a broader type of consumers. All the answers were submitted online.

With the answers obtained, a robust analysis was done with the use of the SPSS, a statistical software.

1.7 Thesis Organization

This thesis has 5 chapters.

It starts with an introduction on the main topic, sustainability, where the researcher presents some facts and observations from former studies. On this first chapter is intended to go from the main topic to the specific dissertation question topic, sustainability on food products and the assortment of this products in retail store, and explain why is this an important subject to study in order to get results and conclusions.

The second chapter covers the literature review about the main and more specific topic or other subjects of interest for the study. It supports the statements and hypothesis created. The objective is to get information, facts and studies on the field and raise some questions that need to be answered and analysed. These questions help on the creation of the hypothesis for the test.

Then a chapter presenting the methodology for the experimental study is granted with as much detail as needed for it to be clear for the reader.

After presenting the experimental study the results are introduced and analysed in order to permit some interpretation.

Finally, conclusions must be taken. Conclusions presented either approve or disapprove the statements of the study or even bring up non-significant results for it. Furthermore, eminent limitations are displayed as well as future potential studies that might have been detected.

2. LITERATURE REVIEW

The environment and all the changes that have been seen in it stand as a call to action on how urgent is to spare our resources and protect the world we live in (Chae, 2021). Promoting the consumption of sustainable products can prevent our land from being over explored and reduce the pollution created by food industry. Likewise, producers and retailers are adopting their habits and consumptions manners. The rise on the commercialization of sustainable goods shows to retailers how important is to support sustainability and adopt their approach to conquer the market (Gatzer & Ros, 2021; Kumar, Manrai & Manrai, 2017).

This chapter will be focused on supporting an overview on the important topics for the study that is being developed. It is divided into four subtopics that will be crucial for the understanding of sustainable consumption and consumer behaviours. First subchapter is about sustainable products and how they are perceived in the market. Second one is on the sustainable shopping experience to better understand consumer journey and their choices. Additionally, subchapter three is about in-store product location and how it can have an impact on consumers decisions. Subchapter four will narrow down to consumer involvement and sustainable behaviours issues and finally, the last subchapter is about the purchase intention for sustainable food products.

2.1 Sustainable (Food) Products

Sustainable products are perceived to be less capable answer consumer needs. This empirical judgement leads consumers to take longer to adopt environmentally friendly products rather than common products (Barber, Taylor, & Strick, 2009; Lin & Chang, 2012). According to Tezer and Bodur (2020) this judgment can fade away if consumers take the chance to use the products. These authors propose that the sensation that consumers experiment when using these products motivates both the acquisition of such goods as increases the predisposition for consumers to pay for such products. This outcome might be less effective only if the positive influence on the environment of a sustainable product characteristic is perceived to be minor.

Regarding sustainable food products, organic food is the one that more people look for. It assumes 4% of food purchases having the propensity to grow for a larger percentage as consumers expectation and confidence on these products are being spread. Notably, 90%

of the selling of these goods happens in North America and Europe (Juhl, Fenger, & Thogersen, 2017).

On the evaluation that consumers make on the products they level its importance by two dimensions: durable contribution and situational relevance. A product is seen to have a durable contribution if it answers to a persistent need on consumer life. Of contrast, a situational relevance is assumed when the product answers to a passing need created by an occasional situation (Laurent & Kapferer, 1985). This analysis can influence consumer on their willingness to buy and consume sustainable products.

Indeed, the main reason for consumers to do not choose organic is sometimes because those products are not at their disposable within the stores, or either because the prices are taken as premium when compared to its substitutes non-organic products. (Barber, et al, 2009; Bezawada & Pauwels, 2013). On the cost-benefit analysis, Dörnyei and colleagues (2017) state that consumers will seek for information on the products until benefits on the information overstate the costs. For the benefits, Juhl et al (2017) found that purchasing organic is seemed as a value added for consumers when it comes to their own health care and also their awareness on environmental issues. Knowing that, retailers that produce sustainable products should work on how to stand the information on the product or in its promotion.

Juhl et al (2017) also demonstrated that consumers which acquire organic food have a higher chance to get more of those products after. Most consumers start to acquire dairy organic products and then they go for vegetables, eggs, baking ingredients and fruits. After going through these stages, most common behavior is that consumers start to buy organic from all categories. The initial acquisitions are just the door entrance and the likelihood to go back for common products is low. The authors also featured that the proportion that organic food products are taking on the sales of some categories (from 1,7% on refrigerated food till 38,9% on oats) can be a sign for manufacturers and resellers that they should invest on having sustainable food products from different categories. As consumers look for some of these products they might cross-sell for other products with the same patterns.

In regards to businesses, they can become more sustainable either by turning operating and management standards ecological or by promoting and selling sustainable products or services. Consumer goods companies, where brands and characteristics of the product

take a relevant position on the business, should invest on selling sustainable products. This firms should not ignore the sustainable standards on the operational side, as it should accompany the business as a whole. It might just not be a priority but a midterm adoption. (Prakash, 2002). Like this, they can pursue the new sustainable standards that might thrive among product sales. Therefore, it seems that for a retailer to accomplish an acceptable sustainable food product offering, it is important to have some consistency on the supply and demand of such products. For this to happen, when a store assumes socially responsibility for promoting sustainable consumption it must make it visible to consumers and manufacturers, so they engage with that mindset and behave accordingly (Kumar, Manrai, & Manrai, 2017). It is important to manage expectations from all sides of the chain. Companies that adopt this sustainable supply need consumers to respond to the available offer that manufacturer put in the store (Hofenk, Birgelen, Bloemer, & Semeijn, 2019).

On the consumer side, it is important to understand the struggle that consumers have with sustainable products. It can be a pricing issue and it might also be soaked on society standards and judgements as Gonzalez-Arcos and colleagues (2021) stand on their article. If so, a broader approach must be taken rather than focus on consumer issues.

The uncertainty that we live nowadays with COVID-19 pandemic situation directly affects the behaviour and position of the consumers regarding the consumption of sustainable products. Chae (2021) says that the risks and insecurity that an epidemic situation creates does not promote the consumption of organic food as it is also perceived as something new, or less traditional, on the market. On the contrary, some analysis on the topic, as the one from Gatzer and Ros (2021), affirms that the awareness of consumers to health and environmental matters became more present on their daily habits with the situation the world is living and as so it would affect positively the demand for sustainable products. Retailers can play an important action to prevent this shift and promote the consumption of sustainable products by showing its benefits for the environment, society and individuals (Prakash, 2002).

2.2 Sustainable Shopping Experience

Products that exist to serve and please consumer are more valued on its sustainable versions when they are used, as Tezer and Bodur (2020) said on their article. These

authors found that firms can have a profitable advantage acquiring sustainable products for their businesses if it involves the use of such products by the clients.

It is confirmed by a study that consumers choose sustainable products more often when they are in a public context rather than when they are alone (Green & Peloza, 2014). This behaviour can be harmless, but on their unconscious, it will make them feel better if in front of other people, they show concern for the environment. On those situations consumers are looking for an approval of the society, even if they do not need it (Tezer & Bodur, 2020). However, consumers' propensity to buy reduces when they feel that a lot of consumers are around (Harrell, Hutt, & Anderson, 1980). These conclusions support the idea that a balanced traffic within a store can be beneficial for the acquisition of sustainable food products. In regards to the perception that consumers have on the outside of the store, consumers will be more tempted to visit a store if it is crowded (Hui et al., 2009).

Inman Winer and Ferraro (2009) prove that when consumers know better the store, they tend to do more unplanned shopping. On this situation consumers feel more comfortable and so they let their choices to be influenced by store stimulus. It is also curious that their results show that women and big families tend to do more unplanned shopping. As a planned shopping customer habit, it is observed that either customers use lists, or they go shopping more frequently and so, they know by heart what they need and where it is located. Women and families using these strategies can contradict previous results, but those would be the exception. According to Inman et al (2009), as more aisles the consumer visits, more unplanned shopping the consumer tends to do. Consequently, as more time the consumer spends in the store more unplanned shopping tends to be made. Finally, they proved that paying by check or by card let consumers do more unplanned shopping.

Another interesting fact is that, because consumers try to offset their shopping, they will be more able to get fresh and healthy food when their basket have more hedonic products, as the contrary also happens (Hui et al, 2009). Additionally, consumers also try to balance their shopping regarding to costs. If we separate consumers between budget oriented and non-budget oriented, we can see an opposite nonlinear spending between both. Budget shoppers would buy more expensive products in the middle of their journey and nonbudget shoppers, on the contrary, would acquire expensive products on the beginning and ending of the trip (Sheehan & Van Ittersum, 2018).

As people live in a rush, while time in-store is passing, the check-out is seen as the most tempting point to stop next. Therefore, when they feel that time is getting to its end, consumers have more probability to concentrate their shopping on the area where they are at the moment they notice it (Hui et al, 2009).

A sustainable strategy that is already imposed and affects shopping experience is the restriction created on the plastic bags. Also, some supermarkets start to incentive consumers on bringing their own containers to take the food or products that are weighted at the stores. These rules on plastic bags are practically widespread among developed countries. Gonzalez-Arcos et al (2021) analysed the reaction of consumers to this change. Some consumers react to this adoption better than others. The ones getting it easily softened the process and the others, that took longer to accept it, got influenced by them as time passed. The human being is a creature of habits and as so, that repeated actions that consumers included on their shopping routine to act accordingly the new policy, got on their usual habits and most consumers have no longer struggled with it.

To create such policies like that, it is important that it gives people the option. If it is too restrictive, it is crucial that the intention and the reason for that imposition is explained to the affected people, so they can accept it. Badges and certificates can also give people the feeling of trust and as so can help on the adoption on new and challenging policies that might be created for consumption and shopping experience (Denver & Christensen, 2014). The market aggregates consumers that are social and environmental responsible and consumers that are not. These two groups can differentiate on social realities and on personal aspects. Therefore, it is necessary to qualify and mediate efforts and results of the introduction of such policies, either from the retailer side as from consumer side (Hofenk et al, 2019).

2.3 In-store product location

In-store product location can affect consumer choices as it has a direct impact on consumer journey. Having the right product in the right place can define the difference between a product to be chosen or not. An adequate product promotion can positively influence the profitability and sustainability of a whole supply chain (Vidovic, 2021).

Inman and colleagues (2009) studied how in-store stimulus may generate and manipulate consumer's needs. They found that in-store displays can have a positive effect on unplanned shopping as it can influence consumer decisions on the decision moment. It

can also have a higher impact on in-store decisions if consumer buys that item less frequently and it promotes more easily the purchase of non-hedonic products, for unplanned shopping.

Prior research explored how the information on the products is perceived by consumers related to assortment size and quantity of attributes (Dörnyei et al., 2017). They found that bigger assortment leads consumers to look and compare information of a bigger set. As the assortments becomes bigger, consumers tend to look only for principal attributes, as brand and price. Also, it is true that consumers do not spend a lot of time looking for the information on the products. As so, producers should highlight the most important attributes and make the packaging count to stand out among its substitutes. A good strategy for retailers to attract consumers for these emerging products can be to place them within some other substitute products, guaranteeing that their products have its beneficial advantages presented on the packaging.

Vidovic (2021) stated that retailers can stand out their stores with the creation of niche markets. This type of product assortment highlights products that exist to answer a concrete need of consumer. It promotes the attention for brands that developed products on the highlighted category against competition as it also creates awareness for that niche. As a differentiator factor, niche markets can be a good strategy for companies and stores that want to introduce sustainable products on their assortment. Like this they can promote the consumption of such products and conquer consumer trust for future acquisitions. After that it is important to see what would be more beneficial: keeping those products on a niche or distribute them among its product categories (ex.: sustainable rice on the rice category). If, for example, sustainable products were priced at a lower value than it usually is when they are positioned as organic they could be positioned among their categories without being perceived as just expensive substitutes but as beneficial substitutes. This strategy adopted as a long-term strategy could keep consumers attracted by these products and turn them more organic friendly. That would lead to more quantities sold and as so it could give retailers the opportunity to negotiate better deals with the producers. This strategy can motivate tier one brands to extend the organic market and make it grow in a sustainable way (Bezawada & Pauwels, 2013).

2.4 Consumer involvement & sustainable behaviors

This subchapter will reinforce some of the statements shared on the previous ones and will get deeper on it.

It has been demonstrated that the consumption of sustainable products leads to positive feelings and some excitement on the consumption of such products. Tezer and Bodur (2020) have proven it and have also discovered that the involvement of consumers on these matters (consumption of sustainable products) make them feel more included and valued by society. For this reason, consumers' memories on these experiences are often positive and preferred when compared to the sensation when using a common product. The authors cited before, demonstrated that the feeling of being a contributor on this mission to "keep the world a better place" is stronger when consumers experiment the product and not only when they see them and compare information and layouts with their substitute (non-sustainable products).

The World Commission on Environment and Development, in 1987, shared a report called "Our Common Future" where it claimed for improvements on sustainable development. It should mean growth that "meets the needs of the present without compromising the ability of future generations to meet their own needs". Some years after, Elkington (1999), implemented the idea of the triple bottom line where he stands that businesses must be evaluated in regards to social justice, environmental quality and economic prosperity, known also as People, Planet, Profit. Juhl et al (2017) predicted in 2017 that if the expansion of sustainable market continues to grow, in five years it could reach twice as many households, being almost one third of it. A big part of the other consumers could also contribute for the consumption of sustainable but in a more inconsistent way. In 2019, Hofenk et al (2019) observes that sustainability is much more a subject of interest and relevance in society. He also found that if this tendency is growing is because companies and markets approach is becoming closer to consumers personal standards. It means that sustainable efforts that a brand or a store might assume are better perceived by consumers who identify themselves with those models.

Vitell (2015) studied and demonstrated that is crucial that consumers support firms on such social responsibility. The author created the Consumer Social Responsibility (CnSR) concept as the baseline for firms to be able to integrate the Corporate Social Responsibility (CSR) idea. CSR companies operate under standards that favor society on

subjects such as justice, ethics and environment. When consumers beliefs favor a set of practices, they might easily accept norms and rules that reinforces them (Hofenk et al, 2019). Consumers' support is crucial for a firm to adopt social responsibility rules, as Vitell (2015) states. These companies need consumers to act accordingly the same rules which they self-regulate their operations on. For now, companies must be aware that consumers will not look for products that contribute for the environment and the society, as sustainable products, only because a brand or a firm says that such product is beneficial. A consumer will acquire it if the standards by which that product is produced and marketed are similar to the ones that he or she believes and also assume at their own lifestyle (Hofenk et al, 2019). This discovery is important for companies to measure the level of investment that it should allocate to different categories and markets as consumers do not react in the same way to the same communication. Another important fact that leads consumers to convert is the authenticity with which a store and a brand promotes their own vision and mission and how it takes into their operation (Kumar et al, 2017).

Knowledge is a very strong tool that largely influences people's attitudes and beliefs. That is what makes people to live in a certain way and take certain decisions (Pellegrini Massini, 2007). As such, environmental expertise and awareness, might positively influence consumers on their attitudes towards environmental matters and encourage their predisposition to buy sustainable products (Prakash, 2002; Kaiser & Shimoda, 1999). Additionally, Hofenk et al (2019) found that consumers are stubborn as they need to feel that they are the biggest influencers of themselves on the decisions they make. Therefore, as much knowledge consumer have on sustainability as on its relevance, the more consumer will want to get sustainable products. This wide-ranging knowledge on the subject might influence consumer as subjective knowledge (memory and information processing) (Denver & Christensen, 2014). In fact, as Barber et al (2009) stated, this instinctive know-how can have a stronger impact on consumer decisions. This show the market and government how important is to inform people on such matters. Sometimes, more than work on having more information on the packaging or in the product, it is important to empower people with this generic knowledge on sustainability. This effort can help stores to better predict consumer future behaviours.

Hence, we just found that companies can have a big play influencing consumer's choice for sustainable food products. From their communication, to the information on the products or services, or even by their overall vision, they can have an impact on the

information that achieves consumers and therefore influence their position regarding such matters (Hofenk et al, 2019; Kumar et al, 2017). For communication and commercial purpose, it is important to notice that consumer preference for sustainable products occurs when they feel that this type of individual action will have a positive contribution for the environment and society as a whole. If consumers perception is that a single action will not have such impact, his preference for sustainable products might not happen with a high frequency (Prakash, 2002). For this reason, sustainable communication, policies and interventions should incorporate both individual and social matters. It should speak and communicate directly to the individual, reinforcing the importance of adopting new consumption habits, as at the same time, it should promote social practices in order for it to have a higher positive impact. Gonzalez-Arcos et al (2021) suggests that, in order to avoid putting much pressure on the individual, a good strategy is to show how other responsible consumers are adopting new consumption habits. By exposing that, consumers will want to do the same as they saw on the sponsored example and the exponential effect starts working. Promoting sustainable awareness is a complex thing to work on but it is important to change mindsets while contributing for a balanced development of society and economy (Elkington, 1999).

COVID-19 brought a lot of instability to existing markets and sustainable products market is no different. Some analysis on the topic defends that within this pandemic situation, the awareness of people for matters such as environment and human health had increase. Consequently, consumer predispositions to buy products which create a positive impact on these matters is growing in the same direction (Eltze, 2021; Gatzer & Ros, 2021). Alternatively, another author, affirms that the risk and insecurity that people live on this situation lead them to buy less of the sustainable products (Chae, 2021). Consumers tend to become more selfish since their main focus turns to be their own safety and health. Interestingly, Kim (2020) also discovered that as much uncertain the future is the not only people tend to do food shopping for more days, but they also tend to choose a more diverse set of products. On times like this it gets significantly relevant that companies and even governments inform consumers on how important can be to consume sustainable products and motivate them for that as it can turn the planet a better place to live in (Chae, 2021).

2.5 Purchase intention for sustainable food products

A conventional objection on the acquisition of sustainable products has to do with its perceived high prices.

As consumers have a greater feeling after using sustainable products, they would also be able to pay more for those after using them (Tezer & Bodur, 2020). Also, as closer consumer beliefs and habits are to sustainable principles, the more they would be able to pay for such products and the more sustainable products they will buy (Juhl et al, 2017).

In particular, Newman, Gorlin and Dhar (2014) found that consumers have a higher perceived value for sustainable products when they observe that the producer of such product do not created it greener on purpose. On these cases, consumer understand that the product is beneficial and that its characteristics are fully there. Otherwise, they will assume that a product that is transformed to get greener, in the process loses some of its characteristics. This can be interesting for a brand to understand that to include sustainable products on its assortment it is better to create a new line of products than to modify and upgrade the existing ones to turn them sustainable.

We previously understood that there is a lack of trust from the consumers when evaluating sustainable products for the first time (Lin & Chang, 2012). This reluctance is also perceived through the advertisements since consumers do not easily believe on the statements or the message that it shares (Luo, Sun, Shen, & Xia, 2020). A curious fact is that also the color of a product can have an impact on the perception of the consumer as well as on the willingness to pay for such products. Apparently, the green color, which is many times associated and used in green products, can give an unreliable information about the product (Samaraweera, Sims, & Homsey, 2021). On the contrary, the authors found that a white color would better represent a sustainable product. This clear color on the product can pass the message of pureness and high-quality product better and, as such, it is also stated on the article, that a white package on sustainable products would increase the willingness to pay of consumers.

Another fact that can influence on the willingness to pay of consumers to buy such products can be its location on the store. For example, Sheehan and Van Ittersum (2018) demonstrated how budget and non-budget shoppers manage their spending on their shopping routine. In general, consumers are more willing to pay for products at the end of their journey. Spending decisions will depend on the progressive investment during

the route and on the opportunity cost associated to each further acquisition. However, budget shoppers tend to spend more in the middle of the shopping process and non-budget shoppers tend to do the contrary, as the authors found.

Summarizing, it is important to have all of these discoveries in consideration, but in the end, a consumer will look for products until he finds one where the benefits overstate the costs, while answering to its need (Dörnyei et al, 2017). So, it is important to keep in mind that consumers perception on the product have a great impact on his predisposition to buy. For sustainable products, as usually they have higher prices, the information and knowledge that consumers carry on the product characteristics and benefits have to be strong and consistent to all the other factors.

3. METHODOLOGY AND DATA COLLECTION

A mixed method research was used to collect data. Two studies were then developed: a (1) qualitative research and a (2) quantitative research.

From qualitative research, it is expected to dive into individuals' opinions, behaviors, beliefs, feelings, perspectives, expectations, relationships (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). It allows a deeper analyze on a topic and it also gives to the studier higher sensitivity and consciousness for different contexts that should be considered to develop a scalable study. One of the forms of qualitative research that will be used for this study is an in-depth interview. With that, it will be possible to explore open-ended questions and get a deeper overview on the matter that is being studied (Guion, Diehl, & McDonald, 2011).

On the other hand, quantitative research quantifies the diversity on a population. It analyses strict scenarios and closed-ended answers (Mack et al, 2005), from which it usually is possible to statistically test and interpret the information. From this study, some concrete conclusions on the hypothesis assumed might be taken (Park, Yi, & Jang, 2021 and Lund, 2012).

With a mixed method, it turns to be possible to not only get an in-depth perception on the consumer profiles and the market itself by using the qualitative method, but also broader and concrete insights on the characteristics of the sample, with the quantitative method (Mack et al, 2005).

As a first study, a qualitative method was implemented with in-depth interviews to 5 different types of consumers. After that, a survey was created as a quantitative method. This survey was fully answered by 361 Portuguese citizens.

3.1 Study 1: In-depth Interviews

For this study a script was written. To analyze the consumer perceptions, five interviews were led and they all answered the same questions.

The five consumers selected were different from each other and have somehow relevant profiles to analyze on the purpose of this thesis. Consumer 1 was a male, with 30 years old, a €30.000 yearly salary and lives in Lisbon by himself. Consumer 2 was a male too, with 28 years old, a €25.000 yearly salary, lives in Lisbon and its household has 2 people.

Consumer 3, a female, with 29 years old, a €15.000 yearly salary and lives in Lisbon with her husband. Consumer 4 was a male, with 59 years old, a €40.000 yearly salary and lives in Lisbon with his two children, so his household have 3 people. Consumer 5, a female, with 26 years old, a €20.000 yearly salary, lives in Lisbon and her household has two people.

The questionnaire was individually made to each of the respondents. Before starting, a brief introduction was given on the topic. After that, the respondents presented themselves on their demographic aspects such as sex, age, city and yearly salary. The questions that came next were divided on three topics: sustainability awareness, perception and propensity to buy sustainable products and shopping behaviors and strategies. The interviews followed a semi-structured format having some planned questions and some other unplanned topics that were addressed during the conversation (to get an overview on the questions see appendix A).

3.2 Study 2: Online Experimental Survey

As quantitative research, the survey will serve to collect structured data from a sample of the population. For this thesis, the main focus is on getting information on consumer perceptions, standing points on sustainability matters and sustainable products, behaviors and reactions to stimulus. With such data is expected to analyze the dimension, impact and relationship of several characteristics (Bowling & Ebrahim, 2005).

3.2.1 Survey Components

This questionnaire started with a brief introduction on the topic followed by the three main chapters with questions related to: sustainable awareness, shopping habits and the stimulus; and then ended with demographic questions.

The measurement questions of the first chapter were adapted from an article: Quoquab,, Mohammad, J., and Sukari, (2019) A multiple-item scale for measuring “sustainable consumption behavior” construct. The topics highlighted on the questions in regards to shopping habits, were mostly inspired on the interviews of the first study.

After that, two different stimulus were presented to the respondents. The first stimulus was a picture randomly offered between three options:

1. A normal supermarket corridor – control picture.
2. A picture of a sustainable target store.

3. An image of a sustainable target area on a supermarket.



Picture 1 Control picture



Picture 2 Target store



Picture 3 Target supermarket area

After being exposed to one of these stimuli, participants were asked to complete a set of questions:

- Manipulation check (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - I am attracted to buy more products in a place like this.”
- *Store attractiveness* (4/5 items): e.g. “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - The atmosphere of this place or store gives me confidence about the products I can buy.”

Then, participants were exposed to a second stimulus, this time shown in a video format, randomly presented between four options:

1. A video of a consumer selecting a standard package of cornflakes on a standard corridor in a supermarket – control video.
2. A representation of a purchase of sustainable cornflakes on a sustainable target store.
3. A video showing a consumer getting sustainable cornflakes on a standard corridor in a supermarket.

4. A recording of a consumer choosing sustainable cornflakes on a sustainable target area in a supermarket.



Video 1 Control video (link: <https://youtu.be/xkHvjmbGGrk>)



Video 2 Target store (link: <https://youtu.be/5KyJ7HqG7zc>)



Video 3 Sustainable product on a standard corridor (link: <https://youtu.be/Tx2ibX9dPuQ>)



Video 4 Target area in a supermarket (link: <https://youtu.be/vjK86S-gr5E>)

Some questions were made after the stimulus, in order to be able to get information on respondents' reaction and interpretation to it:

- **Manipulation check** (1 item): "Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - This consumer has just acquired a sustainable product."
- **Quality perception** (1 item): "Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - This consumer acquired a high-quality product."
- **Shopping experience** (1 item): "Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - I believe that this consumer's shopping experience was pleasant."

- *Attractiveness to buy* (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - I consider the place where this consumer purchased the cereals to be an attractive place to buy.”
- *Placement attractiveness for sustainable products* (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - I would look for an area similar to the one shown if I wanted to buy sustainable cereals.”
- *Placement effect on sustainable products demand* (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - If sustainable products were featured in the same section as this consumer, I could buy sustainable products more often.”
- *Placement effect on willingness to pay* (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale - totally disagree, totally agree - Would I be willing to pay more for a package of sustainable cereals, compared to a standard product in the same category, if that product was offered to me in the same section as the consumer in the video?”
- *Willingness to pay* (1 item): “Please indicate to what extent do you agree with the following statement using a 5-point Likert scale was also used, but it was ranged from I Would Pay a Lot Less and I Would Pay a Lot More - How much more would you be willing to pay for a package of sustainable cereals compared to a common product in the same category?”.

4. RESULTS ANALYSIS

4.1 Study 1: In-depth Interviews

To better illustrate the type of data obtained from consumers interviews, the information collected was compiled into a table (*Table 1*, presented below). From the answers of the five interviews, we could find similarities between some profiles and from there were extracted three types of consumers: *Nonconscious consumer* ($n=1$), *Conscious consumers* ($n=2$) and *Sustainable Lovers* ($n=2$). Going deeper on these three profiles we can analyze different characteristics, behaviors and perceptions of each of them.

Nonconscious consumer was characterized for having low sustainability awareness and, as such, this consumer has not adopted yet any of the most common sustainable actions. On the contrary, *Sustainable Lovers* were very sensitive to sustainable matters and they already implemented many actions on their daily routine for the sake of it, such as recycling, composting, controlled water and energy consumption, use of reusable bags and packages and one of them even adopted his diet in order to prevent over industrialization. Lastly, *Conscious consumers* were moderately aware of those issues and they both adopted the most common sustainable actions like recycling and the use of reusable bags for shopping.

Despite the little interest that *Nonconscious consumer* has on sustainability issues he categorizes sustainable products as top products for their higher perceived quality. *Sustainable Lovers* also look at those products as high-quality products since they are durable and less disguised. Additionally, this type of consumer stated that the acquisition of such products makes them feel better with themselves and with society. On the other hand, *Conscious consumers*, foundd these products inconvenient and poor on quality. Maybe, because of this, they affirm that only five or ten percent of their basket is composed by sustainable products. On this matter, *Nonconscious consumers* assumed zero percent of these products on their shopping, while *Sustainable Lovers* assumed between forty to sixty percent.

As the main reason that would lead consumers to look more for sustainable products, *Nonconscious consumer* and *Conscious consumers* mentioned the need to know the impact they would create with such action. They also mention the need to have more information on the quality and constitution of the products as well as on why are they beneficial for the environment. Besides that, *Sustainable Lovers* would buy more if they

had a larger offer available at the stores they visit. Looking on the reason that leads consumers to consume less of such products they all mentioned price, as being high compared to other products. These two evaluations on what could have an impact on consumers consumption of sustainable products answers our research question number 1: “What are the most and less attractive attributes on sustainable food products that lead or do not lead consumers to buy and consume them?”.

The three groups of consumers considered packaging as one of the most important measures to work on in a sustainable perspective, maybe for being apparently the easiest one. Products constitution and production stages were also matters that *Conscious consumers* and *Sustainable Lovers* perceived as important to be adjusted to more sustainable versions.

When asked about their ease on the *recognition of sustainable products*, the majority of consumers stated that it is still hard to distinguish and be sure of which products are more environmentally friendly. Generically, consumers found that the easiest way to look for those products is to visit target areas or stores, as they give a guarantee on the products and they also have a bigger offer on this segment. Maybe for this reason, *Sustainable Lovers* are the only type of consumers that put an extra effort on going to local and target stores to get specific type of products. Among all consumers, supermarkets are the preferred shops for shopping, for proximity and time management reasons. This might answer to our research question number 3: “What do consumers value most on their shopping journey when they buy sustainable food products?”. In general consumers would value the ease of getting these products, as so, would value if supermarkets had more offer on this category.

From this study it is possible to get a plain picture on different consumers profiles. This overview is important to create a thoughtful survey that analyzes several realities.

	Consumers		
	Nonsconscious	Conscious	Sustainable Lovers
1. Yearly Revenue	€ 30.000	€ 15.000 - € 25.000	€ 20.000 - € 40.000
2. Household	1	2	3 - 4
3. Sustainability Sensitivity/Awareness	Low	Median	Very High
4. Sustainable Actions Adopted	None	Use reusable bags for shopping and recycling	Controlled consumption of water and energy, recycling, composting and use of reusable products. On food, reduce the consumption of meat and follow a diet that prevents over industrialization
5. General perception on Sustainable Products	Higher quality, seen as a top category product	Quality compromised. It is not clear what turns such product sustainable and so the quality is questioned. In general it is less convenient	Products are more durable and better quality. I also feel better for contributing for the world we live in
6. How to identify Sustainable Products?	Representation of it on the packaging or by going to target stores	Still hard to identify. The easiest way to ensure that a product is sustainable is by going to target stores	Focus on its origin and destination and its position in the transformation chain. I sometimes look for products on target areas.
7. What is more important to be sustainable: production, constitution, packaging?	Packaging	Production, constitution of the product and packaging	Packaging, for being the easiest to adopt. After that is production.
8. Sustainable and Healthy, are they the same?	No	No	No
9. Incentives to buy a Sustainable Product	Get information on the impact it would cause on the environment	Having the guarantee that this type of product contains the same quality as standard products, mainly in food, and knowing the impact that the opting for sustainable products can have on the environment	Having more offer on the supermarkets
10. Biggest inconvenience on buying sustainable products	High price, even more in short-lived products	High price and misinformation	High price and on hygiene products is the smell, efficiency and texture
11. % of the cart on sustainable products	0%	5% - 10% for packaging matters	40% - 60% (It would be higher if there was more offer on supermarkets)
12. Type of store visited for shopping	Supermarket	Supermarket	Supermarket, local market and target stores
13. Reason to visit the type of store mentioned before	Proximity	Proximity and time management	Proximity and time management. For target and local stores is for its offer.
14. Shopping frequency	Once a week	Once a week	Once a week
15. Strategy to do an efficient shopping	Use of a list	Use of a list written accordingly to the order of the products on the store I visit	Use of a list, but it is not in a specific order

Table 1 In-depth Interviews Output

4.2 Study 2: Online Survey

4.2.1 Sample Characterization

The survey was answered by 361 individuals divided by 317 females (88%) and 44 males (12%). Also, 29% of the answerers had between 18 and 24 years old, 30% between 25 and 29 years old, 17% between 30 and 34 years old and 13% between 55 and 64 years old. A big part of the respondents live in the Lisbon metropolitan area, 60%, 13% live in the center of Portugal and 11% live in the north of Portugal. Regarding their highest level of scholar education, 45% got a master degree and 35% a bachelor's degree. On the household composition, 37% have a household of two individuals, 31% of three individuals and 20% of the population have 4 individuals on their household. Additionally, 19% of the households have an annual income between €10.000 and €15.000, other 19% of the households have an annual income higher than €40.000, 17% have between €20.000 and €24.999 and 13% have between €15.000 and €19.999. It is also good to know that 81% of the responders are employed. The graphics below show this information more clearly and complete.

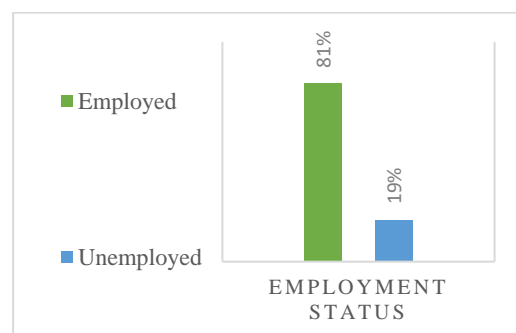
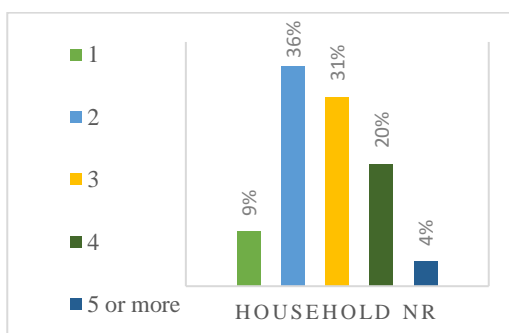
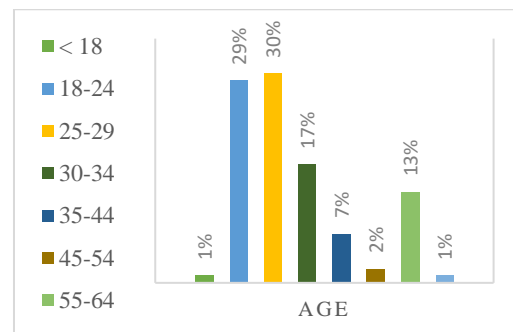
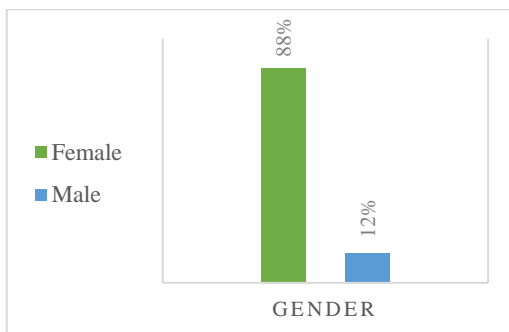




Figure 2 Demographic characterization of the sample

Sustainability Awareness and Behaviors. When asked about their sustainability awareness, respondents indicated to consider themselves as people who know about sustainable matters and who is aware of its impact on the environment. On sustainable behaviors, the most commonly adopted among the sample is recycling and the usage of recycled bags and bottles. Despite that, respondents find that that the most difficult action to adopt in terms of sustainability is to reduce energy and water consumption as well as avoid the use of their own car, instead of public transports.

Sustainable Products Perception. When respondents were asked about sustainable products, a big part of them stated that they know how to identify it and that they like more to consume that type of products instead of the conventional products. The perception they have about these products is of better quality and as so they are their preference.

Willingness to pay. On the other hand, when it comes to paying more for these products, the majority of the sample would not be disposed to it.

Shopping Habits. The preferred place for shopping is the supermarket and sometimes respondents visit target stores to buy more specific products. Many of the respondents of this study follow a list and they usually go for shopping once a week. They also confirmed

they prefer to buy national products as well as seasonal fresh products if they have that option available. On sustainable matters, they also choose more often unpackaged products as well as most of them use reusable bags to take their shopping home.

Product characteristics. Looking at statistics, the most valued attribute for respondents is price, followed by brand, as it was also stated on some articles mentioned before (Dörnyei et al,2017). Then comes the impact on the environment, convenient package, attractive package and finally supermarket shelf position. Consumers took this order more often when evaluating it consciously. This answers to our research question number 2: “Which characteristics on food products consumers value most”. It is good to know that the impact on the environment stands as the third characteristic that consumers value. Important is also to understand how could they evaluate that more often, and choose products that bring a benefit for the environment regularly.

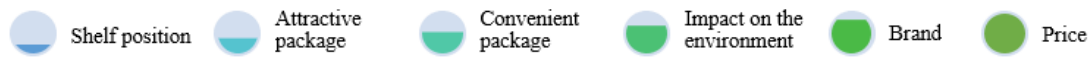


Figure 3 Preferred product characteristics

4.2.2 Scale Reliability Analysis

The scales used on the questionnaire were adapted from literature but in order to guarantee the accuracy on the results an analysis was conducted for the scales used on each group of questions. The scale reliability test was made for all main questions that involved scales.

	No. items	Cronbach Alpha	No. items deleted	New Alpha / correlation
Sustainable Awareness	4	0.647	2	r= .463**
Sustainable Behaviors	8	0.690	-	-
Sustainable Consumption	8	0.794	-	-
Sustainable Products Perception	3	0.605	1	r= 0.380**
Store Attractiveness	4	0.821	-	-

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 Scale Reliability Analysis

The scales representing *sustainable behaviors*, *sustainable consumption* and *store attractiveness* are reliable, with a *cronbach alpha* equal or greater than 0.7, and we can

compute the items of each one of them in order to get a single scale for these measures. For the other scales the *pearson correlation* between the group of items that each scale aggregates was calculated. On sustainable awareness, *pearson correlation* indicates that item 1 and 4 have the higher correlation ($r=0.463$, $p<0.01$) and as so we can assume them and compute both to one unique scale. Testing the *pearson correlation* for the items of the scale that measures sustainable products perception we conclude that the items 2 and 3 have the higher correlation ($r=0.380$, $p<0.01$) and as so we will compute them and use them for the scale.

4.2.3 Outliers Analysis

To detect any outliers a Mahalanobis test was made for all the main questions answered. The Mahalanobis statistics was extracted and two potential outliers were identified when analyzing the Chi-Square critical value. Therefore, they were both marked out as outliers (IP of the outliers: 81.84.41.188 and 188.82.204.89). Even though they were detected as outliers they were considered on the analysis, once they were only two single individuals between 361 respondents.

4.2.4 Main Results

4.2.4.1 Picture Stimulus Analysis

Manipulation Check. To check if manipulations worked as expected, a comparison of the means was tested for the question “*I feel attracted to buy more products in a place like this.*”, answered with a 5-point Likert scale (totally disagree - totally agree). The results confirmed the effectiveness of the manipulation, as it guarantees that conditions differ from the control condition ($M_{\text{control}}=2.50$, $M_{\text{Target Store}}=3.97$, $M_{\text{Target Area}}=3.71$, $F(2,358) = 67.962$, $p<.001$). With the t-test, it is confirmed that control condition differs from target store and target area, as well as target store and target area differ among each other ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(241)=10.774$, $p < .001$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(233)=8.363$, $p<.001$; $M_{\text{Target store}} \neq M_{\text{Target area}}$, $t(242)=2.118$, $p<.05$).

Store Attractiveness. Further analysis indicate that the three groups differ among each other on their appreciation for store attractiveness ($M_{\text{control}}=2.94$, $M_{\text{Target Store}}=4.07$, $M_{\text{Target Area}}=3.81$, $F(2, 358) = 63.098$, $p<.001$). Looking at the means, it is clear that target store and target area in supermarkets are the most attractive options to buy sustainable products and to do shopping. From these results, we can conclude that the control image,

representing a standard supermarket corridor, is less attractive for shopping and to buy sustainable products. With this analysis we can presume that consumers would look more often to target stores and then to target areas in supermarket to buy sustainable products and also to buy some generic products. ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(241)=10.893$, $p < .001$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(233)=7.756$, $p<.001$; $M_{\text{Target store}} \neq M_{\text{Target area}}$, $t(242)=2.663$, $p<.01$). This also answers to our research question number 4.

	Control n=117	Target Store n=126	Target area in the supermarket n=118	F-test
Manipulation Check	2.50 (1.222)	3.97 (.894)	3.71 (.997)	F(2,358)=67.962***
Store Attractiveness	2.94 (.882)	4.07 (.735)	3.81 (.827)	F(2,358)=63.098***

Note: * $p<.05$; ** $p<.01$; *** $p<.001$; Standard Deviations are presented between parenthesis.

Table 3 Picture stimulus analysis

4.2.4.2 Video Stimulus Analysis

Manipulation Check. The first question made after the video was related to the type of product the consumer was getting – “*This consumer is getting a sustainable product.*” – answered with a 5-point Likert scale (totally disagree - totally agree). Results from an ANOVA indicated that the stimulus worked as expected since all conditions differ from control group ($M_{\text{Control}}=2.21$, $M_{\text{Target store}}=3.10$, $M_{\text{Stand. corr. w/sust.}}=2.66$, $M_{\text{Target area}}=3.08$, $F(3,357)=13.837$, $p<.001$). Additionally, after testing the means between the four groups we could conclude that most groups also differ among each other ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(181)=5.914$, $p < .001$; $M_{\text{control}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(184)=2.831$, $p<.01$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(172)=5.616$, $p<.001$; $M_{\text{Target store}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(185)=2.669$, $p<.01$; $M_{\text{Stand. corr. w/sust.}} \neq M_{\text{Target area}}$, $t(176)=2.487$, $p<.05$) except target store and target area conditions, that may not differ and as so cannot be compared ($M_{\text{Target store}}=3.10$, $M_{\text{Target area}}=3.08$, $t(173)=.085$, $p=.932$), as it was expected. Interpreting the results, we can observe that a sustainable product is better identified when within a target store or in a target area in a supermarket than in a standard corridor, next to the products of the same category.

Quality Perception. From the comparison of the means analysis, it is possible to infer that conditions differ ($M_{\text{Control}}=2.49$, $M_{\text{Target store}}=3.28$, $M_{\text{Stand. corr. w/sust.}}=2.51$, $M_{\text{Target area}}=3.14$, $F(3,357)=20.251$, $p<.001$). After a deeper analyze, from t-test, it is observed that control

condition only differ from target store and target area, as well as target store and target area do not differ among each other ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(181)=6.163$, $p<.001$; $M_{\text{control}}=2.49$, $M_{\text{Stand. corr. w/sust.}}=2.51$, $t(184)=.082$, $p=.935$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(172)=5.024$, $p<.001$; $M_{\text{Target store}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(185)=5.855$, $p<.001$; $M_{\text{Target store}}=3.28$, $M_{\text{Target area}}=3.14$, $t(173)=1.048$, $p=.296$; $M_{\text{Stand. corr. w/sust.}} \neq M_{\text{Target area}}$, $t(176)=4.737$, $p<.001$). With these results, it seems that the environment where the product is placed can influence consumers on the perception they have from the quality of the product. Target places suggest that products have higher quality.

Shopping experience. Conditions for this variable differ as statistical analysis shows ($M_{\text{Control}}=3.07$, $M_{\text{Target store}}=3.63$, $M_{\text{Stand. corr. w/sust.}}=3.14$, $M_{\text{Target area}}=3.42$, $F(3,357)=7.328$, $p<.001$). Comparing all conditions among each other it is possible to conclude that, similarly to what was observed on quality perception, control condition only differ from target store and target area, as well as target store and target area do not differ between them ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(181)=4.295$, $p<.001$; $M_{\text{control}}=3.07$, $M_{\text{Stand. corr. w/sust.}}=3.14$, $t(184)=.502$, $p=.616$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(172)=2.545$, $p<.05$; $M_{\text{Target store}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(185)=3.644$, $p<.001$; $M_{\text{Target store}}=3.63$, $M_{\text{Target area}}=3.42$, $t(173)=1.569$, $p=.119$; $M_{\text{Stand. corr. w/sust.}} \neq M_{\text{Target area}}$, $t(176)=1.979$, $p<.05$). This result underlines the previous analysis and reinforces that the location of the product has an impact on consumers shopping experience. Target places influence more positively consumers pleasantness during shopping.

Attractiveness to buy. With an eligible result from the ANOVA test, it can be stated that conditions differ ($M_{\text{Control}}=2.85$, $M_{\text{Target store}}=3.55$, $M_{\text{Stand. corr. w/sust.}}=2.73$, $M_{\text{Target area}}=3.65$, $F(3,357)=17.682$, $p<.001$). From the t-test it is obtained a result which follows the pattern of previous variables: control condition only differ from target store and target area, as well as target store and target area do not differ when comparing one with the other ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(181)=4.573$, $p<.001$; $M_{\text{control}}=2.85$, $M_{\text{Stand. corr. w/sust.}}=2.73$, $t(184)=.746$, $p=.457$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(172)=5.033$, $p<.001$; $M_{\text{Target store}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(185)=5.196$, $p<.001$; $M_{\text{Target store}}=3.55$, $M_{\text{Target area}}=3.65$, $t(173)=.607$, $p=.544$; $M_{\text{Stand. corr. w/sust.}} \neq M_{\text{Target area}}$, $t(176)=5.608$, $p<.001$). It starts to be clear that the local where the product is, has an impact on consumers perception. In this case, target places attract consumers to buy more products.

Placement attractiveness for sustainable products. Conditions differ as the comparison of the means test infer ($M_{\text{Control}}=2.42$, $M_{\text{Target store}}=3.71$, $M_{\text{Stand. corr. w/sust.}}=2.54$, M_{Target}

area=3.72, $F(3,357)=36.313$, $p<.001$). As on the analysis of the attractiveness to buy between conditions, we observe a similar result when we narrow it to sustainable products. Once more, control condition only differ from target store and target area ($M_{\text{Control}} \neq M_{\text{Target store}}$, $t(181)=8.482$, $p<.001$; $M_{\text{control}}=2.42$, $M_{\text{Stand. corr. w/sust.}}=2.54$, $t(184)=.701$, $p=.484$; $M_{\text{control}} \neq M_{\text{Target area}}$, $t(172)=7.844$, $p<.001$). It is also observed that target store and target area do not differ among each other and that other conditions differ ($M_{\text{Target store}} \neq M_{\text{Stand. corr. w/sust.}}$, $t(185)=6.925$, $p<.001$; $M_{\text{Target store}}=3.71$, $M_{\text{Target area}}=3.72$, $t(173)=.099$, $p=.921$; $M_{\text{Stand. corr. w/sust.}} \neq M_{\text{Target area}}$, $t(176)=6.467$, $p<.001$). After analyzing previous variable and looking now at the results with a fine focus on sustainable products, we can conclude that target places are an attractive place for consumers to buy sustainable products and more than standard corridors.

Placement effect on sustainable products demand. To evaluate this variable, the following question was asked to the respondents: “*If a sustainable product would be offer to me in the same section this consumer was, I would buy sustainable products more often.*”. It was answered with a 5-point Likert scale (totally disagree - totally agree). Non-significant differences between conditions were obtained from the ANOVA test. As so, it can be assumed that conditions do not vary and we cannot compare them to extract an interpretation from it ($M_{\text{Control}}=3.59$, $M_{\text{Target store}}=3.52$, $M_{\text{Stand. corr. w/sust.}}=3.38$, $M_{\text{Target area}}=3.40$, $F(3,357)=.841$, $p=.472$).

Placement effect on willingness to pay. The question related to this matter was: “*I would be willing to pay more for a sustainbale package of cornflakes, compared to a standard product in the same category, if a sustainable product would be offer to me in the same section the consumer on the video was?*” answered with a 5-point Likert scale (totally disagree - totally agree). Results indicate that the location of products inside the store does not influence consumers’ willingness to pay, with differences between them being non-significant ($M_{\text{Control}}=3.57$, $M_{\text{Target store}}=3.38$, $M_{\text{Stand. corr. w/sust.}}=3.38$, $M_{\text{Target area}}=3.20$, $F(3,357)=1.523$, $p=.208$).

Willingness to pay. When looking at how much respondents would be willing to pay more for sustainable products, compared to standard products from the same category, if the sustainable product would be offer to them in the same section where the consumer on the video was, the same non-significant result was obtained. A conclusion that can be made is that there is not much information on this matter that can be taken from it

($M_{\text{Control}}=3.71$, $M_{\text{Target store}}=3.61$, $M_{\text{Stand. corr. w/sust.}}=3.54$, $M_{\text{Target area}}=3.55$, $F(3,357)=2.021$, $p=.111$).

	Control n=91	Target Store n=92	Standard corridor with sustainable product n=95	Target area in the supermarket n=83	F-test
Manipulation check	2.21 (.995)	3.10 (1.038)	2.66 (1.182)	3.08 (1.062)	$F(3,357)=13.837^{***}$
Quality perception	2.49 (.848)	3.28 (.881)	2.51 (.933)	3.14 (.857)	$F(3,357)=20.251^{***}$
Shopping experience	3.07 (.929)	3.63 (.848)	3.14 (.996)	3.42 (.912)	$F(3,357)=7.328^{***}$
Attractiveness to buy	2.85 (1.058)	3.55 (1.042)	2.73 (1.134)	3.65 (1.053)	$F(3,357)=17.682^{***}$
Placement attractiveness for sustainable products	2.42 (1.034)	3.71 (1.022)	2.54 (1.270)	3.72 (1.162)	$F(3,357)=36.313^{***}$
Placement effect on sustainable products demand	3.59 (1.000)	3.52 (1.032)	3.38 (1.273)	3.40 (.883)	$F(3,357)=.841$ ($p=.472$)
Placement effect on willingness to pay	3.57 (1.087)	3.38 (1.185)	3.38 (1.122)	3.20 (1.134)	$F(3,357)=1.523$ ($p=.208$)
Willingness to pay	3.71 (.478)	3.61 (.573)	3.54 (.522)	3.55 (.569)	$F(3,357)=2.021$ ($p=.111$)

Note: * $p<.05$; ** $p<.01$; *** $p<.001$; Standard Deviations are presented between parenthesis.

Table 4 Video stimulus analysis

4.2.4.3 Extra Analysis

An extra analysis was conducted to better comprehend the differences between the three groups of consumers characterized through the interviews (*Nonconscious consumers*, *Conscious consumers* and *Sustainable Lovers*), when exposed to the stimulus of the survey. Unfortunately, statistics shown that by dividing the population into three groups, *Conscious consumers* segment did not represent any respondent. Therefore, a split of the population into two groups was assumed: *Low Sustainable Awareness consumers* ($N=241$) and *High Sustainable Awareness consumers* ($N=120$).

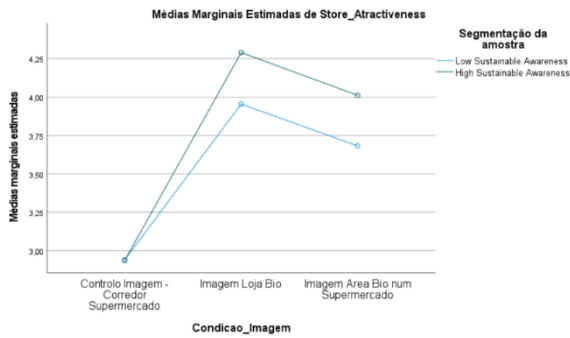


Figure 4: Store Attractiveness analysis per groups

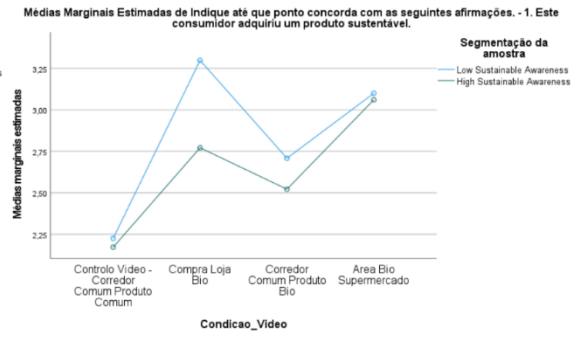


Figure 5: Sustainable Product check analysis per group

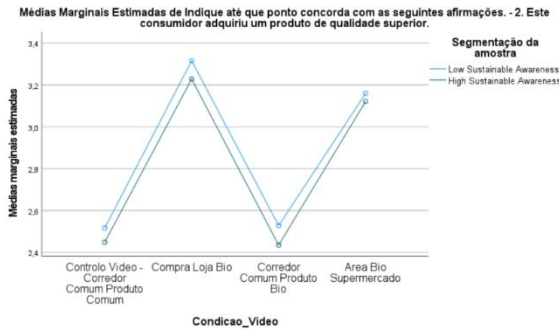


Figure 6: Quality Perception analysis per groups

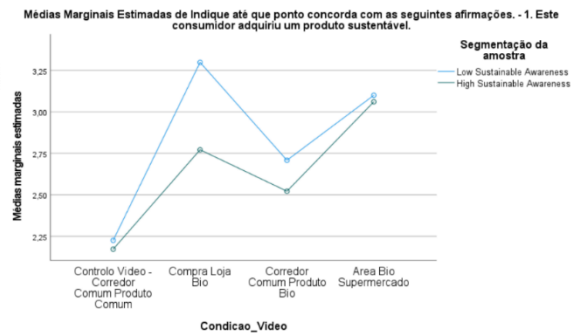


Figure 7: Shopping Experience analysis per groups

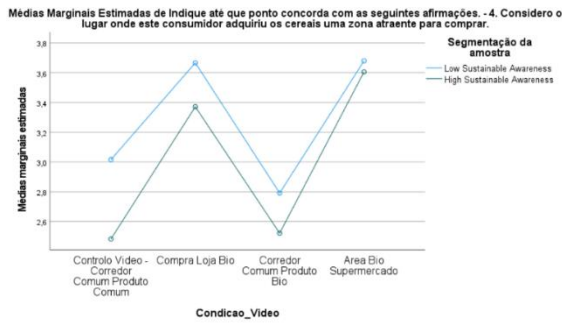


Figure 8: Attractiveness to buy analysis per groups

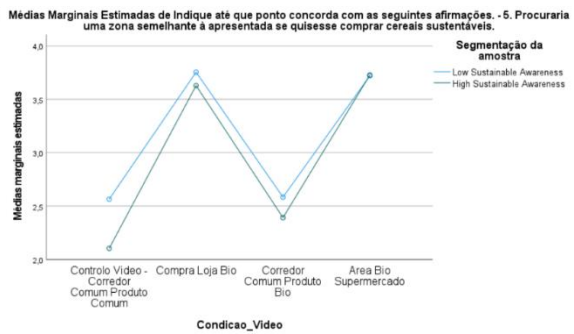


Figure 9: Placement attractiveness to buy analysis per groups

Looking at the graphs it is clear that both groups have similar opinions and that target store is the preferred place for shopping, followed by target area. Even when the analysis narrows down to sustainable products (figure 9), results are identical. statistical test proved that there are no significant differences between both segments. For such a curious conclusion it is not shocking differences between groups are not significantly different and results must be carefully considered.

Low Sustainable Awareness consumers had no doubt on classifying the product as sustainable, when the product was acquired in a target store. On the other hand, Sustainable Lovers were more judgmental on their appraisal, as they probably are more

demanding when evaluating a product. Also, on control condition they both answered correctly and agreed that the product was not a sustainable product.

Looking at the quality evaluation, the different groups of consumers react in parallel. As expected from previous results, respondents perceived that the product has higher quality when it is placed in a target store or target area.

For the last three responses to the video stimulus (*Placement Effect on Sustainable Demand, Placement Effect Willingness to Pay, Willingness to Pay*) conclusions cannot be taken once the results were not significantly different nor for the segments nor for the conditions.

This extra analysis helps on answering to research question number 6: Pro-sustainability consumers, with high involvement on the subject, act differently from other consumers when they look for sustainable food products?

5. MAIN FINDINGS AND FUTURE RESEARCH

The main goal of this study was to find how and if different placement and assortment of sustainable products could have an impact on its demand.

Looking at the study, a general conclusion can be taken: target places (area and store) can have a more positive impact on the demand of sustainable food products, rather than selling these products on standard corridors. It gives consumer the feeling of trust and its quality is better perceived. It was also found on literature (ex.: Tezer & Bodur, 2020) and proved from the studies, that such conditions turn consumers more willing to pay for sustainable products.

When comparing consumers between high and low involvement on sustainability matters, some differences were pointed from literature review (ex: Juhl et al, 2017; Sheehan & Van Ittersum, 2018; Hofenk et al, 2019; Tezer & Bodur, 2020) and on the interviews, but when it gets to real situation they act very similarly. They both classify the experience and attractiveness of the places higher when answering for target places as their perception on the products is better on such areas.

Apart from general conclusions, from the interviews it was identified that consumers choose supermarkets for shopping more often because of its convenience. Additionally, literature states that at the time that consumers start to get sustainable products, their predisposition to consume more of it will increase (Juhl et al, 2017). Both facts combined may suggest that guaranteeing a reasonable offer of sustainable food products on large surfaces might increase the demand of such products and, as the study recommends, they should be placed on target areas. After this research, it is possible to affirm that this would be a good strategy to attend and respond to the green trends that are emerging.

Looking closer to the shopping routines, an interesting information highlighted on readings is in respect to the unconscious balance that consumers try to have on their purchases, whether in relation to health or for cost reasons (Hui et al, 2009; Sheehan & Van Ittersum, 2018). It means that, as the shopping journey evolves, consumers will choose more of healthy products if they have less of it on their basket, as they will choose more expensive products if they have chosen more of cheaper products before. Regarding price, budget oriented consumers look more for high priced items in the middle of their shopping and non-budget consumers act in the opposite way (Sheehan & Van Ittersum, 2018). Such evidence must be relevant to decide where to place a sustainable target area.

A matter to care about is on how the market and its players can help consumers finding sustainable and reliable products. An opinion, extracted from the interviews, is that is hard to identify such products and therefore consumers would prefer target places for the ease of finding such products too. Furthermore, it was found that as more empowerment is given to consumers on their decisions, the better they will feel about it (Hofenk et al, 2019). Contrasting with that, from the interviews, it became clear that consumers find that it is hard to rely on the classification of the products. This shows how there is still some judgment and distrust around such products as maybe that is few information on this type of products. With that, it is important to understand that the more consumers know about sustainable products and its benefits, the more they might also seek for them (Prakash, 2002; Kaiser & Shimoda, 1999). This discovery highlights how information can be important on the process to increase demand on the analyzed products. Therefore, market and brands cannot just blame consumers for their lack of interest or engagement. Instead, they can assume an important role on informing and empowering consumers to make good choices.

In regards to consumers hypothetical sustainability awareness, a great majority of the respondents of the survey state to be aware of their impact on the environment and reinforces it by answering that generically they prefer to consume sustainable products, from the benefits they perceive on that consumption. Interestingly this preference holds mainly before introducing price on the equation. Apparently, price is the most relevant characteristic to influence consumers on buying a product over another and then comes the brand. This was consistent throughout the various sources of the research (ex: Dörnyei et al, 2017) and the study. As sustainable products are perceived to have better quality, consumers also assumed, and the market reinforces, that many of those options tend to be more expensive than the standard products. Literature stated (Dörnyei et al, 2017; Juhl et al, 2017) and results from the survey confirmed, that consumers will not be able to pay more for a product until they perceived that it values that much. This leads us to the conclusion that the right information and a good marketing can have a play on the proposed mission.

These results shed light and offer a contribution on what might be the right placement, promotion and price for a new trend in the market: the sustainable food products.

5.1 Limitations

A limitation can be found on this study as its results are mainly based on individual interviews and a survey. A real empirical situation was not tested. It can have an impact on the conclusions because people might be influenced by the situation that is most common today, to have target areas. As such, having the possibility to respond consciously to the topic, consumers are more sensible to answer what they feel it is right. It also tends to be easier for them to evaluate what they already know and it becomes harder to be impartial when reacting to the stimuli.

Another limitation on study 2 might have been originated by the videos used for the stimulus that were not made by professionals and can pass an incomplete message.

5.2 Future Research

Discoveries taken from this study can be interesting for retail industry and brands when defining their strategy for sustainable food products. Future research could analyze it in a more real situation, by shadowing or creating a simulation of a real shopping experience in a laboratory. Additionally, it could be interesting to study where to position target areas since it was found that consumers act differently during their shopping journey.

A similar study can also be run for online shopping. Studying the impact that different ways of grouping and presenting sustainable products online could have on the demand of those products should be a valuable analysis since it is rising.

At last, the study could narrow down for different type of products, apart from food products, at some point of the study.

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APPENDICES

Appendix A – Semi-structured interviews

1. Do you consider yourself a sustainable person, from your behaviors?
2. What is sustainability for you? What is it about?
3. Is sustainability something that is present on your daily actions? If so, what measures have you taken?
4. Do you usually share with family and friends your daily actions that contribute positively to the environment? Yes, no, why?
5. Do you feel that your family and friends already adopted some of their practices to more sustainable ones?
6. Do you know any more measures that you could implement easily on your daily routine? Enumerate them.
7. What is your perception about sustainable products?
8. How do you identify whether a product is sustainable?
9. Sustainable and healthy, do you put everything in the same "bag"?
10. What is your motivation when you choose to buy or consume a sustainable product?
11. What is most important for you: the production of a product to be sustainable and environmentally friendly, the packaging or its use purpose?
12. On average, which % of your cart is made up of more sustainable products?
13. What would lead you to consume more sustainable products?
14. What drives you to consume less, or not to?
15. Regarding to your shopping habits, where do you do your shopping (food and household)?
16. What makes you choose the type of store(s) you mentioned previously?
17. For how many people do you usually shop?
18. How often do you go shopping?
19. How do you manage your shopping? Do you follow a list, or do you have any other strategy? Do you have your list on any specific order?

Appendix B – Survey

Introdução: Este questionário foi elaborado como parte de uma tese sobre a localização em loja de produtos alimentares sustentáveis. O preenchimento deste questionário levará cerca de 15 minutos e as informações fornecidas serão mantidas em formato anónimo.

Grupo I – Sustentabilidade

As primeiras questões serão em relação ao tema de sustentabilidade, bem como alguns comportamentos relacionados com o mesmo.

Por favor procure dar respostas o mais reais possíveis.

1. Indique até que ponto concorda com as seguintes afirmações. (1- Discordo totalmente, 5- Concordo totalmente)
 - a) Eu preocupo-me com o meio ambiente.
 - b) Eu sei o que é a sustentabilidade.
 - c) Estou ciente de que minhas ações de hoje podem afetar as gerações futuras.
 - d) Eu esforço-me para reduzir minha pegada ecológica.
2. Indique com que frequência assume os comportamentos descritos abaixo. (1- Nunca, 5- Sempre)
 - a) Eu faço reciclagem.
 - b) Eu controlo o uso de água e energia na minha rotina diária.

- c) Evito usar o carro sempre que posso usar transportes públicos.
- d) Eu uso sacos reutilizáveis para fazer as minhas compras.
- e) Eu levo as minhas próprias embalagens para fazer compras sempre que sei que posso usá-las para trazer comida ou outros produtos.
- f) Eu uso garrafas reutilizáveis para colocar água.
- g) Eu sigo uma dieta que evita a sobreexploração de recursos e a industrialização da produção.
- h) Eu evito comprar mais do que preciso.

Informação: Assuma que um produto sustentável é aquele que consegue, ao longo de seu ciclo de vida, prejudicar menos o ambiente, ou até beneficiar.

Os produtos podem ser considerados sustentáveis se gerarem menos resíduos, se forem recicláveis ou mais duráveis, se contiverem menos substâncias nocivas ou tóxicas ou se o seu processo de produção consumir menos recursos e assim não explorar ou deagrdar o meio ambiente.

3. Indique com que frequência assume os comportamentos descritos abaixo. (1- Nunca, 5- Sempre)
 - a) Eu tomo atenção à origem dos produtos que compro.
 - b) Sempre que tenho essa opção disponível, opto por comprar produtos nacionais.
 - c) Costumo comprar frutas e vegetais da estação.
 - d) Evito comprar produtos frescos que estão previamente embalados.
 - e) Normalmente procuro primeiro produtos sustentáveis.
 - f) Quando quero comprar produtos sustentáveis no supermercado procuro uma secção específica.
 - g) Quando quero comprar produtos sustentáveis procuro lojas específicas para o efeito.
 - h) Não me importo de pagar mais para adquirir um produto que contribua positivamente para a proteção e preservação do meio ambiente.
4. Indique até que ponto concorda com as seguintes afirmações.
 - a) Sei como identificar produtos alimentares sustentáveis.
 - b) A minha preceção sobre produtos alimentares sustentáveis é de que tipicamente têm melhor qualidade que os produtos convencionais.
 - c) Prefiro consumir produtos alimentares sustentáveis em vez de produtos convencionais.
5. Quanto mais estaria disposto a pagar por um produto alimentar sustentável, em comparação com um produto convencional da mesma categoria? (de 0% a 100%)

Grupo II – Hábitos de Compra

Pedimos-lhe que agora responda a algumas questões relacionadas com os seus hábitos de compra na compra de alimentos.

1. Indique com que frequência assume os comportamentos descritos abaixo. (1- Nunca, 5- Sempre)
 - a) Eu faço minhas compras num supermercado.
 - b) Compro alguns produtos específicos em lojas desse mesmo segmento.
 - c) Compro os Produtos frescos num mercado local ou loja de bairro.
 - d) Sigo uma lista quando vou às compras.

- e) Escrevo minha lista na mesma ordem em que o supermercado que mais visito está organizado.
2. Qual a frequência com que vai às compras (selecione a sua resposta):
- a) todos os dias
 - b) 2 vezes por semana
 - c) 1 vez por semana
 - d) 1 vez a cada duas semanas
 - e) 1 vez por mês
3. O que mais valoriza num produto (entre os seus substitutos)?
Por favor ordene as opções listadas por prioridade do mais prioritário ao menos prioritário.
- a) Marca
 - b) Preço
 - c) Pacote Atraente
 - d) Pacote Prático
 - e) Posição na prateleira de supermercado
 - f) Impacto no meio ambiente
4. Qual percentagem de produtos sustentáveis acha costuma ter em média nas suas compras? (de 0% a 100%)

Grupo III – Estímulo imagem

Agora será apresentada uma imagem. Por favor, veja com atenção.

(1 das seguintes imagens é apresentada aleatoriamente)

- Loja Target
 - Corredor de Cereais num Supermercado
 - Zona Target num Supermercado
1. Indique até que ponto concorda com as seguintes afirmações. (1- Discordo totalmente, 5 – Concordo totalmente)
- a) Eu procuraria um lugar como este para comprar um pacote de cereais sustentáveis.
 - b) Sinto-me atraído a comprar mais produtos num lugar como este.
 - c) A forma como os produtos são apresentados e organizados nesta loja facilita o meu processo de seleção.
 - d) O ambiente deste local ou loja transmite-me confiança sobre os produtos que posso comprar.
 - e) Além dos cereais, eu faria minhas as compras num lugar como este.

Grupo IV – Estímulo vídeo

Agora será apresentado um vídeo. Por favor, veja com atenção.

(1 dos seguintes vídeos é apresentado aleatoriamente)

- Compra de cereais sustentáveis num loja target
- Compra de Cereais comuns num corredor comum de supermercado
- Compra de cereais sustentáveis num corredor comum de supermercado
- Compre de cereais sustentáveis numa zona target de supermercado

1. Indique até que ponto concorda com as seguintes afirmações. (1- Discordo totalmente, 5 – Concordo totalmente)
 - a) Este consumidor adquiriu um produto sustentável.
 - b) Este consumidor adquiriu um produto de qualidade superior.
 - c) Acredito que a experiência de compra deste consumidor tenha sido agradável.
 - d) Considero o lugar onde este consumidor adquiriu os cereais uma zona atraente para comprar.
 - e) Procuraria uma zona semelhante à apresentada se quisesse comprar cereais sustentáveis.
 - f) Se um produto sustentável estivesse apresentado na mesma seção em que este consumidor estava, compraria produtos sustentáveis com mais frequência.
 - g) Estaria disposto a pagar mais por um pacote de cereais sustentáveis, em comparação com um produto padrão da mesma categoria, se esse produto estivesse à minha disposição na mesma seção em que o consumidor do vídeo estava?
2. Quanto mais estaria disposto a pagar por um pacote de cereais sustentáveis face a um produto comum da mesma categoria? (1- Pagaria muito menos, 5- Pagaria muito mais)

Grupo V – Questões demográficas

1. Género
 - a) Feminino
 - b) Masculino
2. Idade
 - a) <18 anos
 - b) 18 a 24 anos
 - c) 25 a 29 anos
 - d) 30 a 34 anos
 - e) 35 a 44 anos
 - f) 45 a 54 anos
 - g) 55 a 64 anos
 - h) >64 anos
3. Onde vive a maior parte do tempo?
 - a) Área Metropolitana de Lisboa
 - b) Área Metropolitana do Porto
 - c) Zona Norte de Portugal
 - d) Zona Centro de Portugal
 - e) Zona Sul de Portugal
 - f) Ilhas (Açores ou Madeira)
 - g) Fora de Portugal
4. Qual o grau de escolaridade mais alto que completou?
 - a) Escola Primária
 - b) Escola Secundária
 - c) Bacharelado
 - d) Mestrado
 - e) Doutoramento ou mais elevado
5. Quantas pessoas vivem usualmente consigo?

- a) Vivo sozinho(a)
 - b) Somos 2 em casa
 - c) Somos 3 em casa
 - d) Somos 4 em casa
 - e) Somos 5 ou mais em casa
6. O que melhor descreve a sua situação de emprego nos últimos 2 anos?
- a) Empregado
 - b) Desempregado
7. Qual o intervalo que contém o valor do rendimento anual do seu agregado familiar?
- a) >10.000€
 - b) Entre 10.000€ e 14.999€
 - c) Entre 15.000 € - 19.999 €
 - d) Entre 20.000 € - 24.999 €
 - e) Entre 25.000 € - 29.000 €
 - f) Entre 30.000 € - 34.999 €
 - g) Entre 35.000 € - 40.000 €
 - h) >40.000€

Fim: Muito obrigada pelas suas respostas a este questionário.

Relembro que todas as respostas serão mantidas em anónimo.

Tenha um bom dia!