

A Work Project, presented as part of the requirements for the Award of a Master's degree in
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Portuguese consumers' preferences regarding fashion products

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Abstract

The awareness of the fashion industry's negative impact and concern for the environment have been increasing in the last few years. The purpose of this study is to understand why Portuguese consumers buy fast fashion if they have environmental sustainability concerns. In the study, Portuguese consumers' preferences regarding fashion products were analysed as well as important consumer segments. These findings were obtained from the existing literature, conjoint and cluster analysis. It was concluded that Portuguese consumers are willing to purchase sustainable products despite finding some barriers and valuing the attributes quality and price more than sustainability when purchasing clothes.

Keywords:

Fast Fashion, Sustainability, Preferences, Attributes, Conjoint Analysis

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1. Introduction

1.1 Background

The statistics from Statista (2022) reveal the size of the fast fashion market around the world since 2021, with the market value expected to grow to approximately 133 billion dollars in 2026. In this thesis, we are studying the Portuguese fashion market, which is valued at 6.64 billion dollars. Moreover, the growth rate is expected to reach 6.6% annually. If one looks into fashion sales in the Portuguese market, by 2022, 93% of sales will be attributed to non-luxury products or fast fashion products. Therefore, we could make the assumption that Portuguese consumers heavily adhere to fast fashion. (Statista, n.d.)

Fast fashion is described as fast production, cheap, trendy and stylish, but is also known to have a significant negative impact on the environment (DiLeonardo, 2022). Even though consumers enjoy purchasing fast fashion, the brands have been constantly criticized for their unethical practices as well as for being a threat to the environment (DiLeonardo, 2022). Some examples of these are: textile waste caused by overproduction (McKensey & Company, 2022) as well as various types of pollution such as GHG emissions and water and air pollution (DiLeonardo, 2022). Furthermore, another great issue of fast fashion is the working conditions, which can be exemplified by the case of the Rana Plaza Building, which was a clothing production facility that collapsed and killed 1,134 people (Sainato, 2022). Because of situations similar to the ones mentioned above, awareness regarding how fast fashion harms the environment and how workers are treated has emerged among consumers all over the world.

Sustainability is currently a valuable word (Jaganmohan, 2022). Nowadays, consumers are increasingly interested in sustainability and environmental issues (Deliotte, 2022). However, before making purchase decisions, consumers demand access to all the information regarding the production of products (Deloitte, 2022). As consumers increase their expectations of fast

fashion brands' sustainable practices, circular business models are no longer optional (McKensey & Company, 2022). Young generations will pressure fashion brands to be more sustainable (McKensey & Company, 2022) and the growth of sustainable consumption will grow as well as the implementation of sustainable operations by most businesses (McKensey & Company, 2022).

As the demand for sustainability has been increasing drastically, fast fashion brands have recently invested in innovation and marketing to cope with the need for sustainability (H&M Group, 2021; and Inditex, n.d.). This is how brands can satisfy conscious consumers or consumers who want to switch to sustainable consumption in terms of production and operation. Moreover, to communicate with their customers, marketing is the key to sending the message. However, there are some who are sceptical of what they are doing, as it will be further explained in the literature review.

1.2 Research Question

The purpose of this work is to understand why Portuguese consumers buy fast fashion if they have environmental sustainability concerns. Furthermore, this research will help gather information about how fast fashion brands can operate in the sustainable fashion market. This way, the different analyses performed in this study will additionally answer the following questions:

- What attributes the Portuguese consumers prefer when purchasing clothes?
- In which consumer segments should fast fashion brands focus their environmental efforts?

Please notice that for sparing reasons, every time the word “sustainability” appears, it refers to “environmental sustainability”.

1.3 Study Overview

In order to answer all of these research questions, the structure of this thesis and the methodology chosen will now be presented. First, a literature overview was done in order to understand how consumers perceive and behave towards fast fashion and sustainable fashion as well. The existent literature provided information regarding the perceptions consumers have of fast fashion, their preferences regarding fashion products' attributes, and how different groups of consumers behave toward these matters, which was used to build the analysis performed. After this, a conjoint analysis was performed with the results obtained from the choice-based survey to understand how consumers value different attributes of fashion products when provided with several scenarios of distinct choices. The last analysis of this study is a cluster analysis in which information regarding Portuguese consumers' sustainability concerns and their sociodemographic profile, retrieved from the answers of the preliminary survey, is used. Further research was done in order to understand which environmental sustainability efforts Portuguese consumers value the most; if they are willing to pay more for sustainable products from fast fashion brands and if they associate these brands to greenwashing. Finally, based on the conclusions of all the analyses performed in the work and the findings provided by the existing literature, recommendations were given to fast fashion brands regarding the ways they should improve their sustainability efforts in order to satisfy the current consumers' needs.

1.4 Main Findings

With the research methods used in this study, it was concluded that Portuguese consumers are concerned with the environment and consequently have reduced their fast fashion purchases in the last few years. Even though there is a common interest among most consumers of acquiring more sustainable fashion products, some barriers to sustainable fashion are still significantly

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reported by consumers such as price, lack of choice/ sustainable alternatives and lack of knowledge about sustainability alternatives.

Furthermore, the conjoint analysis demonstrated that when making fashion purchase decisions, Portuguese consumers consider the quality and the price of the products as the most important attributes since the most chosen products were of low prices and average or high quality. It was further concluded, that even though consumers seem to prefer these attributes to sustainability, they still choose sustainable products more than non-sustainable ones if these products are affordable and of average or high quality.

Additionally, the cluster analysis performed determined four consumer segments of two different generations. Two groups from Generation Z and two groups from the Millennials generation with different sustainability concerns were found. It was concluded that young consumers with no salary demonstrate a higher interest in becoming more sustainable and paying a higher amount of money for sustainable fashion products than consumers with higher incomes. Furthermore, one of the Millennial groups showed no interest at all in making their closet more sustainable or spending more money to do so.

Finally, further research demonstrated that Portuguese consumers are not aware of the environmental sustainability efforts of the fast fashion brands analysed in this study. Furthermore, consumers chose the use of recycle materials in the clothes' production as the effort they value the most, followed by second hand initiatives and reduction of waste and pollution in the production process, among others. Moreover, they showed a willingness to pay a higher price for a sustainable t-shirt sold by a fast fashion brand compared to a conventional t-shirt sold by the same brand, even though the majority of consumers admitted that they associate fast fashion brands with greenwashing when considering buying sustainable products.

All of the analysis performed, and research methods used will be further explained in the following chapters.

2. Literature Review

The study of consumers' behaviour has been approached from many perspectives. However, an analysis of the existing research is provided in this chapter. The literature review is presented under four major topics: the fashion industry, sustainability, sustainability in fast fashion, and the paradox of fast fashion and sustainability. Consequently, our analysis will be presented in chapters 4, 5, and 6.

2.1 The Fashion Industry

2.1.1 Brief History of Fashion

From the beginnings of the Apparel Industry, garments were handmade, however, the history of fashion has changed since 1970, when the first sewing machine was invented, and most apparel was produced faster within a short amount of time and required less labour (Fashion Gone Rogue, 2020). The fashion market was divided into two categories (Figure 1), which were *Haute Couture* (exclusive custom-fitted) and *Prêt-à-porter* or ready-to-wear with standard sizing (Hines & Bruce, 2007). Fast fashion belongs to the ready-to-wear segment's high-street category (Siegle, 2011). This fast fashion sector (ready-to-wear) comes with a low price and fast turnover concept (Scamans, 2016). They are able to set a low price because most fast fashion brands produce the clothes in countries with cheap labour costs or with low investment in infrastructures, as well as collaborate with suppliers in various areas for a fast response in the market to satisfy their customers (Siegle, 2011). As the Internet grew in popularity, a new generation of trend-setters emerged, including bloggers and vloggers, and fast fashion became more popular among young people (Scamans, 2016).

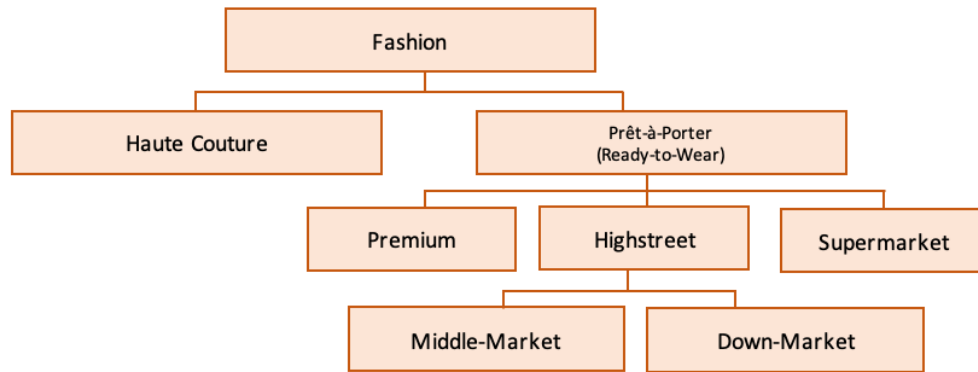


Figure 1: Fashion Industry Market Segmentation (Scamans, 2016)

2.1.2 Fast Fashion

The concept of "fast fashion" refers to low-cost clothing that is rapidly manufactured and sold in accordance with the newest trends (Fagerhus and Hallqvist, 2020). A typical strategy of fast fashion firms is to relocate production to nations with low-cost labour in order to be able to offer the newest fashion trends at a cheap price. As a result, the majority of fast fashion businesses are actively operating around the world, such as brands from Inditex Group, Hennes & Mauritz (H&M), Mango, Primark and Shein.



Figure 2: Fast Fashion Market Value Forecast from 2021 to 2026 (Statista 2022)

Furthermore, fast fashion brands also utilize supply chains that are very dynamic, adaptable, and sensitive to constantly shifting trends (Barnes & Lea-Greenwood, 2010) which allows them to continuously provide customers with fresh and fashionable clothing. Because of this, there is a greater desire for fresh fashion, which has increased both the manufacturing and consumption of fast fashion (Figure 2). H&M and Inditex are two well-known companies of fast fashion businesses that operate internationally and have rapid inventory turnover (Scamans, 2016). Additionally, since 2013, Mango became one of the great rivals of those two big fast fashion brands as well as Primark from the UK and Shein from China which are recently the largest fashion retailers (Reuters, 2021).

Fast fashion operates with a significantly faster product turnover cycle than conventional models due to the Internet, globalization, and technological innovation (Statista 2022). Moreover, fast fashion retailers are recognized for regularly updating their product lines, meaning that the fashion industry's product life cycle has shortened from months to only a few weeks or days (Barnes & Lea-Greenwood, 2010). This way, consumers are eventually

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encouraged to constantly purchase new apparel (Byan & Sternquist, 2008). Additionally, fast fashion companies frequently use limited-time promotions and discounts to induce customers to buy new clothes right away (Byan & Sternquist, 2008).

Regarding the Portuguese market, current data from Statista shows (Figure 3) that fashion segmentation is increasing every year since 2017 and is expected to reach up to 2.17 billion dollars this year (2022). Accessories, Apparel, and Footwear are the fashion categories that are being consumed the most by Portuguese customers; however, among the three categories, apparel has a higher consumption than accessories and footwear (Statista, n.d.). Furthermore, according to Statista (n.d.), the average Portuguese consumption of fashion per person is expected to be 36.4 pieces in 2022. As a result, non-luxury or fast-fashion products will account for 93% of sales by this year (2022).

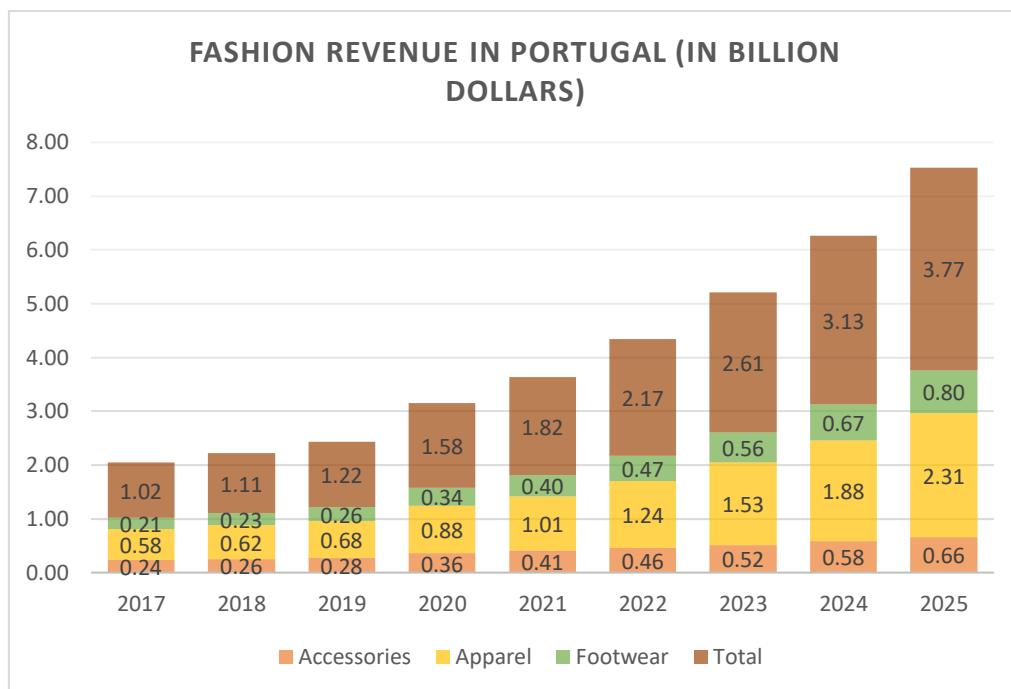


Figure 3: Fashion Revenue in Portugal (Statista, n.d.)

2.1.3 Fashion market after the pandemic

At the beginning of the pandemic (covid-19) in early 2020, customers changed their purchasing behaviour. The immediate increase in the demand for different distribution platforms is another effect of the lack of accessible storefronts along with the growing health concerns of customers and unexpected laws that imposed self-isolation, which significantly affected the preferred purchasing channel of customers (Eger et al, 2021).

The COVID-19 crisis has accelerated the digitization of customer interactions by several years.

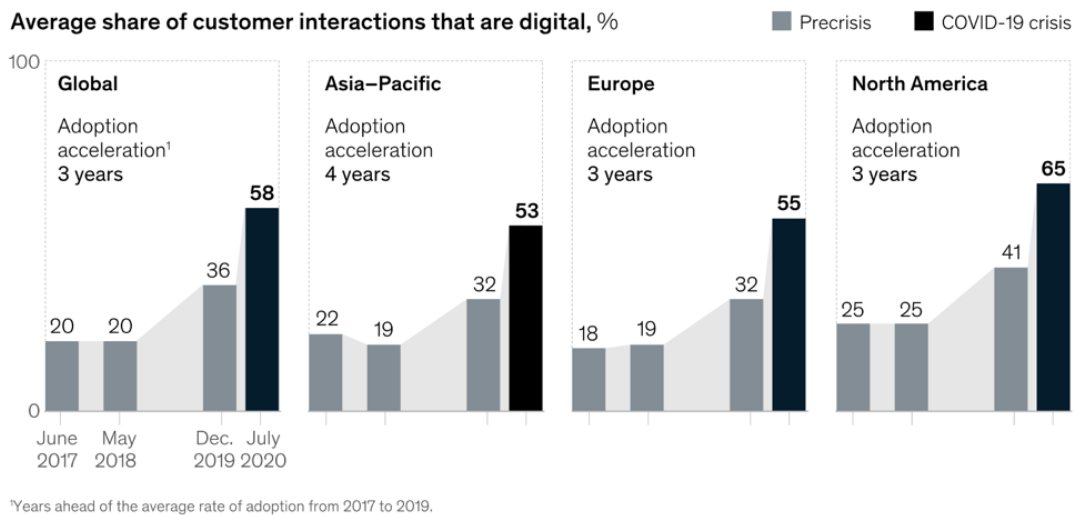


Figure 4: The covid-19 crisis has accelerated the digitization of customer interaction by several years. (McKinsey & Company, 2021)

Businesses and industries have reacted to the significant shift in consumer preference toward online platforms. The results of the survey support the rapid shift to consumer involvement through digital media. (Figure 4) (McKinsey & Company, 2021). According to Nguyen (2021), as consumers' screen time has expanded, organizations must focus on their digital marketing and communications operations, as well as maximizing their online presence.

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During the pandemic (covid -19), the fashion industry got heavily affected. In order to survive, they needed to adapt by distributing products online instead of the traditional stores due to the government regulations that did not allow people to leave their homes for unnecessary activities.

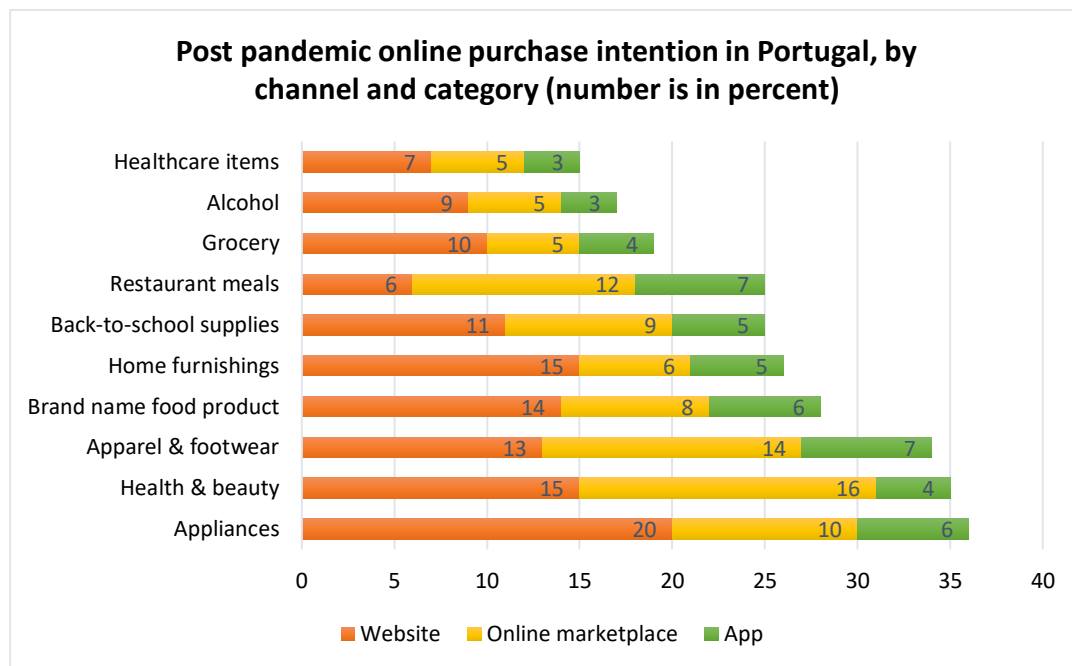


Figure 5: Post-pandemic online purchase intention in Portugal in 2021 (Statista, 2021b)

Despite the fact that the Portuguese were accustomed to online buying, the global pandemic gave websites a small boost, making them the most favoured online purchasing channel across the majority of categories. In the study by Statista (Figure 5), Apparel and Footwear are the third most desired categories for consumers purchasing through online channels. In Portugal, the penetration of digital shoppers has significantly increased in recent years (Statista, 2021b). From this situation, consumers discovered benefits from services that they have never had before, such as online shopping deliveries, store pick-up and cashless transaction (Nguyen, 2021). As a consequence, some consumers switch permanently to the online channel. According to Nguyen (2021), consumer behaviour in the fashion industry changed due to the

impact of the pandemic. As a result of this, the manufacturing and consumption of fast fashion have increased globally, and the existent literature reveals that the negative social and environmental impact of fast fashion is increasing in a dangerous way.

2.2 Sustainability

According to the United Nations, sustainability is defined as the capacity to satisfy present needs without jeopardizing future ones, whether they are natural, social, or economic (United Nations, n.d.). Furthermore, sustainability is a popular topic that people discuss nowadays, and businesses must work toward it to satisfy consumers' concerns.

2.2.1 Triple Bottom Line (TBL) & Conscious consumers

The idea behind "the triple bottom line" is to comprise a method of accounting for businesses that take economic, environmental, and social effects into account. The "Triple Bottom Line" or "Triple-P (People, Planet, Profit)" concept is about striking a balance between economic, social, and environmental sustainability (Dalibozhko & Krakovetskaya, 2018). This connection can be seen graphically as the intersection of three circles (Figure 6). It is only possible to speak of obtaining stability when all three elements are taken into consideration (the intersection of all elements is the centre) (Dalibozhko & Krakovetskaya, 2018).



Figure 6: The interconnection of the elements of the Triple Bottom Line concept. (Dalibozhko & Krakovetskaya, 2018)

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In this sense, the growth of a society that is socially desired, commercially feasible, and ecologically sustainable might be classified as sustainable development. This model suggests a direct relationship between the environmental, social, and economic objectives that constitute the overall goal of sustainable development (Dalibozhko & Krakovetskaya, 2018). According to Park and Kim (2016), consumers perceive fashion brands—whether they are fast fashion or sustainable brands - in terms of economic, environmental, and social sustainability. Consequently, to achieve sustainability, fashion brands need to work toward the three pillars of sustainability (Kim & Park, 2016)

2.2.2 Environmental impact of Fast Fashion

The negative ***Environmental*** impact of fast fashion is the main focus of this thesis. From the research done, it was found that the four main environmental impacts are related to Water, GHG Emission, Waste (Microplastic and landfill), and Energy (Fashion & Environment, n.d.; Marsh, 2021 and Maiti, 2022). In terms of water consumption, the process of clothing production overconsumes fresh water and also releases hazardous chemicals which cause water pollution and prevents the communities around the production facilities from accessing clean water (Marsh, 2021).

Table 1 below shows how regular clothes impact the source of water and climate. The example of production includes T-shirt, Fleece sweater, Jeans, and Dress.

Clothes	Liters of water	Kilograms of Chemical	Kilograms of Carbon Dioxide Equivalent
T-shirt (250 grams of cotton)	2,600	0.8	4.5
Fleece sweater (300 grams of polyester)	100	0.8	11
Jeans (600 grams of denim)	6,200	1.4	13
Dress (500 grams of polyester)	150	1.4	17

Table 1: Negative impact on the environment from cloth production (Adjusted from Fagerhus and Hallqvist, 2020)

According to Fashion and Environment (n.d.), 10% of global carbon emissions also derive from the use of energy in the fashion industry during its production, manufacturing, and transporting. Additionally, Synthetic fibres in their production consume more energy than natural fibres. According to James Conca from Forbs: "Cheap synthetic fibres also emit gases like N₂O, which is 300 times more damaging than CO₂." (Fashion & Environment, n.d.).

Moreover, companies in the fashion industry have attempted to reduce their costs, and the use of synthetic fibres is the option for their production (Marsh, 2021). However, this leads to microplastic waste since when it comes to the washing process, the microplastic degrades and mixes in the wastewater (Marsh, 2021). So, when factories or households released wastewater, it would disturb the life in the ocean, streams, and rivers (Maiti, 2022). Furthermore, Fast fashion also causes an increase in landfill and its synthetic fibres take up to 200 years to decompose (Fashion & Environment, n.d.). Fossil Fuels and coal are the traditional energy source that the fashion industry uses in their manufacturing facilities, especially in the countries

where the based production of many brands is, like China and Bangladesh. This non-renewable energy is the main reason for GHG emissions (Marsh, 2021).

Fast fashion has made it feasible for almost everyone to purchase the newest trends in clothing, but regulators, businesses, and consumers still have a responsibility to minimize the negative externalities associated with the fashion sector (Bick et al., 2018). Researchers say that fast fashion companies need to adopt more environmentally friendly business practices if they want to comply with the United Nations (12th) Sustainable Development Goal (SDG), which focuses on sustainable production and consumption (Fagerhus and Hallqvist, 2020). Additionally, as the demand for fast fashion increases, fast fashion companies must address the environmental and social impacts of their operations (Fagerhus and Hallqvist, 2020)

2.2.3 Sustainable Production and Consumption (SDGs)

The Sustainable Development Goals (SDGs) were developed by the United Nations (UN) as the nation's roadmap for progress in the same direction in response to a worldwide call for action to eradicate poverty, preserve the environment, and promote peace and prosperity for everyone by 2030. (Sustainable Development, n.d.) The 17 Sustainable Development Goals (SDGs) recognize that sustainable development requires a balance between social, economic, and environmental factors and that decisions made in one area will affect outcomes in other areas (Sustainable Development, n.d.).

The 12th goal refers to responsibility for production and consumption which emphasizes the importance of a sustainable production process (United Nation, n.d.). Also, reducing the use of natural materials and the life cycle of finished products which can be reused and recycled, are the start of sustainable operations as well as the adoption of sustainable and ethical practices through the supply chain (Fagerhus and Hallqvist, 2020). Moreover, the industry has to work

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together with international norms to manage hazardous chemicals and waste in business practices and consumer behaviour.

Furthermore, the fashion industry is expanding its goals to become a more sustainable industry and create a better world. According to the negative impacts of fast fashion in Chapter 2.2.2, the 6th Clean Water & Sanitation, 13th Climate action and 14th Life below water will be achieved to reduce the environmental issues.

2.3 Empirical Approach

2.3.1 Conjoint Analysis

In order to understand the attributes of fashion products that Portuguese consumers value the most, another marketing method, the Conjoint Analysis, will be used. Conjoint analysis is a marketing research technique that was first introduced by Luce and Tuckey (1964) with the name of “Conjoint Measurement” and that has been used and further developed, over the years, by many researchers. When consumers are looking for a product to buy, they take into consideration various attributes “such as price, performance, colour and brand (...) in order to choose the product that is the most attractive to them” (Alriksson and Öberg, 2008). Based on this fact, the conjoint analysis provides a way to understand and evaluate the consumer’s preferred attributes by establishing “relative values of particular attributes and identify the trade-offs the customers are likely to make in choosing a product and service and the price they are willing to pay for it” (Popović, Kuzmanović and Savić, 2018).

There are four main types of approaches to conjoint analysis which are: the traditional conjoint analysis method (CA) also known as Ratings-based Conjoint Analysis; Choice-based conjoint analysis (CBCA); Adaptive conjoint analysis (ACA); and Self-explicated conjoint analysis (Rao, 2014). The method used in this study is the Choice-based conjoint analysis (CBCA) because it allows consumers to visualize hypothetical scenarios similar to a real-life purchase situation (Rao, 2014) by presenting them, repeatedly, with different sets of choices so they can choose the option they prefer (Eggers et al., 2022).

According to Rao (2014), there are various essential steps that need to be completed to design a conjoint study, such as problem definition, selection of attributes and levels in order to design hypothetical profiles, construction of a survey with the information selected in the previous

steps and finally the analysis of results, including market simulations. Regarding the first step, the purpose of the conjoint analysis in this study is to answer the research question “Why do Portuguese consumers buy fast fashion if they have environmental sustainability concerns?” and, more specifically, help understand which attributes the consumers prefer when they want to buy fashion products. Regarding the next step, because with the choice-based conjoint method consumers are presented with various different scenarios repeatedly, this might cause them fatigue and harm the accuracy of the results (Eggers et al., 2022). Therefore, the number of attributes chosen, and respective levels have to be carefully considered, since the more attributes studied, the more choice sets the consumer will be presented with. Four attributes were chosen for this study as the most important ones for consumers, regarding the information retrieved from the literature, the interviews with the industry experts.

Choice of Attributes

Previous studies have found that price, quality and style are some of the most relevant attributes for consumers when purchasing fashion products (Jegethesan et al., 2012; North et al., 2010) and therefore those three attributes were considered in the analysis. Additionally, sustainability was also taken into account. A thorough explanation of the choice of each attribute and respective levels is presented below:

Style

In the answers gathered in the interviews conducted with industry experts in this study, it was stated that one of the reasons Portuguese consumers buy fast fashion is because the brands are able to provide the latest trends frequently. From the literature, it was gathered that consumers do not perceive sustainable fashion products as fashionable and trendy (McNeill and Moore, 2015) which prevents them to choose these products when fast fashion ones are available. Style has been included in the conjoint study in order to understand to which extent Portuguese

consumers value the style of the products and if it affects their choice of buying or not sustainable products.

Quality

Usually, sustainable products are considered to be of higher quality and durable when compared to fast fashion products. Therefore, this attribute of fashion clothes should be considered in the study because it will be able to understand if consumers keep buying fast fashion because the benefits it provides overweight the importance of quality. Furthermore, previous studies have also determined that quality is a fundamental attribute that affects fashion consumers' purchasing decisions (Chowdhury and Akter, 2018; Niinimäki, 2009).

Sustainability

The sustainability attribute was added to the analysis with the purpose of understanding how important the sustainability of the materials of a fashion product is for the consumers compared to the other attributes they value most. As explained in the literature, the lack of knowledge about sustainable alternatives was considered by consumers a barrier to sustainable consumption (McNeill and Moore, 2015). Therefore, by adding the sustainability attribute to the survey, it will be possible to understand the behaviour of consumers when they are aware that a sustainable option is available. Since only environmental sustainability is being considered in this study, the type of materials used in the production of fashion apparel was chosen as the measure of this category.

Price

Price is an attribute of extreme importance when trying to evaluate consumers' choices regarding fashion items. In the interviews with experts from the industry, it was mentioned that Portuguese consumers are driven to fast fashion also because of the lower price and considering

the fact that the income levels in Portugal are considerably low, these consumers value price significantly. Moreover, the literature presented previously has shown that price is one of the main barriers to sustainable fashion consumption since sustainable fashion items are usually more expensive than fast fashion items (McNeill and Moore, 2015). Including price as an attribute in the conjoint analysis will allow to understand if consumers are willing to sacrifice other attributes for lower prices. Three levels of price were considered, bearing in mind the average prices of a t-shirt from the fast fashion brands analysed in the study.

2.3.2 Cluster Analysis

Cluster analysis is one of the most well-known segmentation methods and has been used numerous times for market segmentation (Wedel and Kamakura, 2000). As a result, clustering methodologies are often used to discover important consumer segments in order to help companies define their marketing strategy (Wedel and Kamakura, 2000). In a technical way, clustering can be explained as “Given a representation of n objects, find K groups based on a measure of similarity such that the similarities between objects in the same group are high while the similarities between objects in different groups are low” (Jain, 2009).

In order to develop a cluster analysis a 5-stage process needs to be done. According to Mirkin (2005), the 5 stages are: developing a dataset; pre-processing and standardizing data; finding clusters in data; interpreting the clusters; and finally drawing conclusions. Different authors define different possible descriptive variables to be used in segmentation: geographical, demographical and behaviour or psychographic, (or any other) strategic variables (Kotler, 1998). Furthermore, according to Aleš Žiberna and Vesna Žabkar (2003) “it’s necessary to standardize all variables and used the principal components method for determining the importance of selected variables and within variables standardization (due to the fact that not all variables were measured in the same units of measurement)”.

In this study, ex-post segmentation methods will be used. When doing an ex-post approach to market segmentation researchers gather information about how consumers react to and rate specific qualities and benefits of products (Allenby, 2002). Some questions from the first survey regarding consumers’ habits and opinions about sustainability will be used to perform the analysis in this study, which will be further explained in chapter 6.

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Clustering techniques are primarily divided into two types: hierarchical and partitioned clustering. In hierarchical clustering, “data are not partitioned into a particular cluster in a single step, but a series of partitions takes place (...) which may run from a single cluster containing all objects to n clusters each containing a single object.” (Vora and Oza, 2013). On the other hand, when partitioned clustering is used “the algorithms typically determine all clusters at once, it divides the set of data objects into non-overlapping clusters, and each data object is in exactly one cluster.” (Vora and Oza, 2013).

In this study, the hierarchical clustering was performed to determine the correct number of clusters to use and then a K-means cluster analysis was performed. In this type of cluster analysis “The algorithm proceeds by assigning each data value to the nearest centre. This creates K clusters. Then a new cluster centre is selected based on the data in the cluster. For the K-means algorithm, the distance is always Euclidean distance, and the new center is the component-wise mean of the data in the cluster. To use correlation distance, the data are input as z-scores.” (Pennsylvania State University, n.d).

Additionally, this type of cluster analysis was proven to be the best one to use for the purpose of this work since it has been very helpful to determine different segments of fashion consumers in previous studies. Andreea-Ionela (2020) used the k-mean analysis to differentiate groups of individuals with different demographic characteristics and fashion purchasing habits. The k-means cluster analysis identified eight different groups of consumers: casual consumer, quality-seeker consumer, illogical consumer, indifferent consumer, regular consumer, occasional consumer, fashion aware consumer and passive consumer (Ionela, 2020). The study helped to better understand the type of validity of consumer-style inventory.

Harsandaldeep Kaur, and Sahiba Anand (2008) also performed the k-means cluster analysis in their work and were able to distinguish distinct Generation Y groups of consumers according

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to their fashion consciousness level, consumption and materialism (Kaur & Ananad,2018). Additionally, Wencke Gwozdz, Kristian Steensen Nielsen and Tina Müller (2017) used k-means clustering and were able to find 5 clusters, that helped them understand better the segments related to how often the consumer buys budget brands, median brands and premium brands (Gwozdz, Nielsen and Muller, 2017).

3. Conjoint Analysis

3.1 Methodology

The purpose of the survey was to simulate a purchasing situation for Portuguese consumers and was designed in the platform Conjoint.ly. This software is a survey research platform that provides easy tools to perform a conjoint analysis. When consumers open the survey, they are presented with options of products with different features and prices so they can choose the one they prefer. The method chosen was the generic conjoint because it provides information about which features, and price levels affect the consumers' choices. At first, a brand-specific conjoint was chosen for the analysis but it was then altered to a generic conjoint because the goal is to understand what attributes the Portuguese customers value the most when purchasing fashion items, despite the brand, in order to be able to answer the research question: Why do Portuguese consumers buy fast fashion if they have environmental sustainability concerns?

The consumers were presented with a situation in which they should imagine they were buying a t-shirt. In the survey, three options of t-shirts were presented each time, with different combinations of attributes and respective levels. All combinations were possible and an option to choose none of the products was available. In the end, the same demographic questions about gender, age, living area, the highest level of schooling, occupation, and salary, that were asked in the preliminary survey were included. When designing the survey, a reduction of the levels of the attributes was done with the purpose of providing a simpler survey to not overbear the consumers and to avoid a larger number of incomplete and low-quality answers.

In the end, four attributes were considered in the survey as mentioned and explained in chapter 2.6.2 in the literature. The first attribute is Style with the levels Trendy and Classic; the second one is Quality with the levels High, Average and Poor; then Sustainability with the levels Recycled materials and non-recycled materials; and finally, Price with 5€, 10€ and 15€ as

respective levels. The full structure of the survey can be seen in Appendix 5. The survey was open from October 24th 2022 to October 28th 2022 and was distributed to Portuguese people mainly through social media platforms such as Facebook, Instagram and WhatsApp.

3.2 Results

Sociodemographic Profile

A total of 118 responses were collected, although 18 were excluded due to being considered low-quality answers by the platform, mainly because respondents did not look through every option. For detailed statistical information please see Appendix 5, Figures 4 to 9.

From the 100 responses analyses, 70% were female and 30% were male, being that no one chose the option “other”.

Regarding the age of respondents, the majority was concentrated in the two youngest categories since 75% were between 15 and 24 years old, 17% between 25 and 34 years old, 5% between 45 and 54 years old, 2% between 35 and 44 years old and finally, only 1% between 55 and 64 years old. There were no respondents with 65 or more years.

As for occupation, the majority of respondents were full-time students representing 61%, followed by 18% employees, 11% student workers and 3% with a different occupation than the ones presented in the options.

In regard to monthly salary, the categories with the most answers were “does not apply” and the class 0 to 705€, with 39% and 27% respectively, which might be explained by the fact that respondents were mainly young people and full-time students. Then followed the category of 1001 to 2000€ with 18%, the category of 706 to 1000€ with 13%, the category of more than 3000€ with 2% and finally 1% for the category of 2001 to 3000€. Considering the present

maximum level of schooling, the majority of respondents had a Master's degree (53%), 36% had a Bachelor's degree, 10% had finished high school and 1% had just basic education.

Finally, the respondents were mostly located in the Lisbon Area corresponding to 64%, followed by Great Lisbon with 16%, Centre Littoral with 11%, Great Porto with 6%, North Littoral with 2% and North Interior with 1%.

Relative Importance of Attributes and Levels

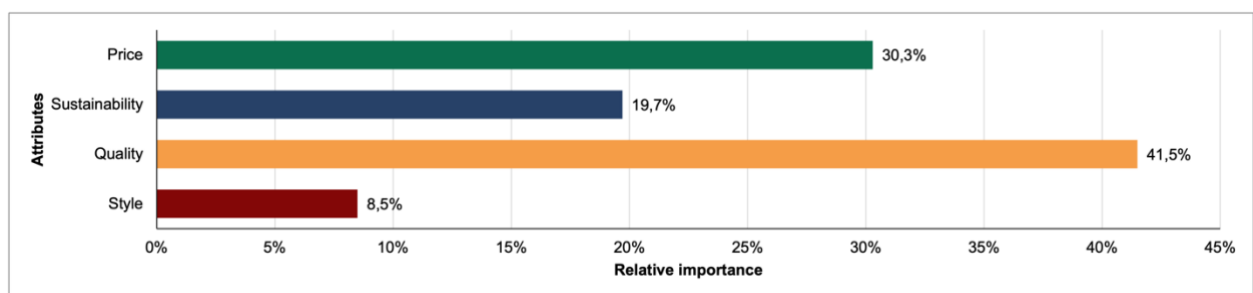


Figure 11: Relative importance of attributes

Figure 11 shows the importance of each attribute relative to the others across consumers, so it sums up to 100%. In other words, it is possible to understand which attributes, on average, the consumers value the most when they want to buy a t-shirt. The attributes that consumers prefer the most are the quality and price of a t-shirt, corresponding to 41.5% and 30.3% respectively. The sustainability attribute followed with 19.7%, and finally, the style was the least preferred attribute of the four, with 8.5%.

The relative importance by levels presented in Table 4 shows the average consumer preferences for each level of each attribute relative to other levels (can also be seen in Appendix 5 Figure 10). It is possible to conclude that, on average, consumers prefer trendy t-shirts (1.8%) compared to classic ones (-1.8%); high-quality t-shirts (18.7%) compared to average-quality (6.8%) and poor-quality ones (-25.5%); recycled fabrics (9.9%) compared to non-recycled

fabrics (-9.9%); and the price of 5€ (14.8%) compared to the other prices of 10€ (2.7%) and 15€ (-17.6%).

Marginal Willingness to Pay

The marginal willingness to pay represents how much money the consumers are willing to pay for a specific product feature, relative to a baseline level. In table 4 it is possible to see the marginal willingness to pay for each level, for the average consumer, automatically calculated by Conjoint.ly (can also be seen in Appendix 5 Figure 11).

Attributes	Levels	Relative Importance	Marginal Willingness to Pay
Style	Trendy	1.8%	0.56€
	Classic	-1.8%	0.00€
Quality	High	18.7%	11.09€
	Average	6.8%	9.03€
	Poor	-25.5%	0.00€
Sustainability	Recycled Fabrics	9.9%	4.99€
	Non-recycled Fabrics	-9.9%	0.00€
Price	5€	14.8%	
	10€	2.7%	
	15€	-17.6%	

Table 4 – Average preference for levels and marginal willingness to pay (relative to baseline)

To briefly explain how the platform Conjoint.ly calculates the marginal willingness to pay, the formula used is: $MWTP_{i \rightarrow j} = -V_{i \rightarrow j} / V_p$, in which $MWTP_{i \rightarrow j}$ represents the standard marginal

willingness to pay of a feature j relative to feature i ; $V_{i \rightarrow j}$ represents the preference for an upgrade to feature j from baseline feature i and V_p is the preference for price (Conjoint.ly, n.d.). For the calculations, the individual preferences regarding the attributes and respective levels of every respondent were used. First, dummy variables are added as baselines and, in this case, the baselines chosen were: classic as the baseline for style, poor quality for the attribute quality, and non-recycled fabrics for sustainability. Next, for all respondents, the coefficient for price in terms of 1€ is calculated by, dividing the difference between the individual partworths of the highest price and the baseline price by the gap between those prices. After that, the difference between each level and the baseline level is divided by the coefficient price in terms of 1€. Finally, the median of all values is calculated representing the marginal willingness to pay off the median consumers for each attribute's levels.

Therefore, the average consumer is willing to pay an additional 0.56€ for a trendy t-shirt compared to a classic one. This value is not very significant, which can be explained by the low relative importance of the attribute style for consumers when buying a t-shirt. Regarding quality, which is the most preferred attribute, the average consumer is willing to pay an additional 11.09€ for high quality and an additional 9.03€ for average quality, compared to a t-shirt of low quality. Finally, on average consumers are willing to pay 4.99€ more for a t-shirt made of recycled fabrics compared to a non-sustainable one.

Ranked list of concepts

The rank list of product concepts shows all the combinations of features and prices ordered by consumer preferences (Appendix 5 Table 26). Once again, the importance of quality is significant, since the first 17 combinations of the rank are high and average quality t-shirts. The top 5 combinations have mainly a price of 5€, with the exception of the fourth one which costs 10€, which demonstrates the relevance of price for customers when buying a t-shirt. T-shirts

made of recycled fabrics are also a preference of consumers but only if they have low prices since they are willing to sacrifice the sustainability of the t-shirt if it means they can purchase a cheaper one made of non-recycled materials. The willingness to pay 15€ only appears in the position 13th of the rank and consumers are willing to pay this price for a trendy t-shirt of high quality and made of recycled fabrics. The least preferred items for consumers are the poor-quality t-shirts, made of recycled or non-recycled fabrics that cost 10€ or 15€, which demonstrates that consumers are not willing to pay these prices for a low-quality t-shirt even if it is sustainable. Overall, consumers show sustainability concerns when considering purchasing options if they can choose high and average-quality items for lower prices.

Simulations

The platform Conjoint.ly provides a tool that allows simulations of shares of preferences for various market offerings. First, a baseline product is set as the baseline with a specific combination of attributes and levels and then the feature price is changed in order to understand how the preference shares change as well.

A baseline scenario was created with two products: Product 1 and Product 2. Both products are trendy, high quality and made of recycled fabrics since these were the levels of attributes preferred by the customers. The only difference between them is that product 1 is cheaper since it costs only 5€ and product 2 costs 10€. In this baseline situation, as it is possible to see in Figure 12, the preference shares of product one are significantly higher than the ones of product 2, 77.3% compared to 22.5%, respectively. If the quality of product 1 is reduced to average, the preference shares of products 1 and 2 reduce to 57.8% and 41.8% respectively, which means, that with average quality, the product is still preferred, although with a significantly lower share. Reducing once more the quality of product 1 to poor quality, the scenario changes drastically, since now the preference shares of product 1 are 82.3% and of product 2 are 16.9%, which

represents the importance of quality to consumers since they are not willing to buy a t-shirt of poor quality even if it is half the price as a high-quality t-shirt, with all of the same other attributes.

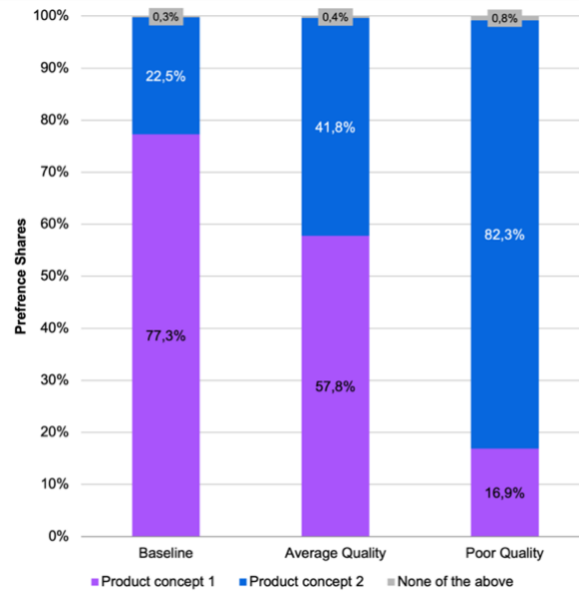


Figure 12 – Sensitivity to Quality

Once again, a baseline scenario with two products was selected (Figure 13). Both products are high quality and trendy, just like in the previous scenario, but now product 1 is sustainable and has a price of 10€ and product 2 is not sustainable and has a price of 5€. In this case, product 1 has a preference share of 55.4% and product 2 of 43.4%, showing that with these conditions, consumers are willing to pay a higher amount of money for a sustainable t-shirt, when the other attributes are the same.

But when the price of the sustainable product increases from 10€ to 15€ the preference shares of that product fall to 39.3% and the shares of product 2, the non-sustainable one, increase to 58.2% (Appendix 5 Figure 12). Once more, we can conclude that consumers consider sustainability important but are only willing to purchase sustainable t-shirts for lower prices, such as 5€ and 10€, in this case.

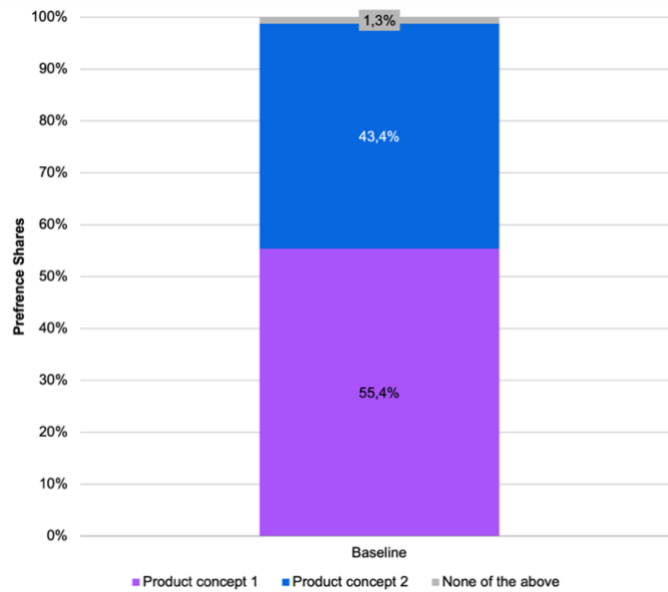


Figure 13 – Baseline scenario for sensitivity to sustainability

As it was mentioned before, for consumers, style is the least important attribute studied. In a scenario with two products with the same attributes, except style, since one is trendy and the other is classic, the preference shares do not change much, although it appears to exist a small preference for trendy t-shirts. In this case, the preference shares for the trendy product (product 1) are 55.5% and for the classic product (product 2) are 44.4%, which means that the difference is not very significant (Appendix 5 Figure 13).

3.3 Discussion

These results are in line with the existing literature since consumers are drawn to fast fashion due to their preference for low-price items of acceptable quality which are the main characteristics of fast fashion products (Okur, 2021). The fact that the attributes of quality and price are preferred to sustainability is also in accordance with previous studies since even if consumers are conscious regarding environmental sustainability, they tend to not take it into consideration when they are looking to purchase fashion products (Joy et al., 2012).

Previous studies have established that there are some barriers to sustainable fashion consumption such as higher prices, lack of trendiness and attractiveness of the clothes but also the lack of knowledge and awareness of sustainable products (McNeill and Moore, 2015). In this study, we can conclude that even though sustainability might not be the attribute consumers value the most, if they are given the possibility of choosing a sustainable piece of clothing, they are willing to spend a higher amount of money for it, being that the marginal willingness to pay of sustainability is 4.99€.

Furthermore, it was mentioned before that fashion consumers considered the advantages provided by fast fashion more important than its negative effects on the environment (Park and Kim, 2016). Nevertheless, from the results of this analysis, we determined that the top 6 concepts of t-shirts preferred by consumers are made of recycled fabrics with prices of 5€ and 10€ and of average and high quality, which means that if the sustainable clothes offered are of great quality, affordable prices and fashionable, consumers will be able to make conscious choices without sacrificing the benefits provided by fast fashion (quality, price and style).

Finally, the simulations presented previously demonstrate once more how sensitive consumers are to both price and quality, although they are not willing to trade a high-quality product for one of poor quality even if it means paying half the price. Regarding sustainability, the scenario is quite different since consumers are willing to choose the sustainable option if the price is acceptable and the difference between the prices of both options (sustainable and not sustainable) is small, which shows the importance of price for consumers when buying sustainable clothes.

4. Cluster Analysis

4.1 Methodology

In order to discover consumer segments and understand the characteristics of fast fashion consumers that are interested in buying sustainable fashion products, a cluster analysis was performed with a sample of 206 answers from the first survey. Some of the sociodemographic variables were used such as gender, age, the highest level of schooling, occupation and salary. Additionally, some other questions asked in the first survey were used in the analysis such as the frequency of fast fashion purchases; the importance of making the closet more sustainable; current sustainability of the closet; willingness to pay more for sustainable products; preference for green products and consideration of sustainability when shopping. This way, it will be possible to discover if there are already fast fashion consumers that are conscious when shopping for clothes and if they are willing to pay more for sustainable products or if the price is indeed a barrier to sustainable consumption, as we have mentioned before.

Since the variables were all measured in different scales, they were converted into numeric scales (Appendix 6 Table 27) and standardized to allow an accurate analysis. The IBM SPSS platform was used to perform the cluster analysis.

4.2 Results

The k-means cluster analysis was the method chosen to perform the analysis, but to use this method, it is required to previously choose the correct number of clusters. First, an ANOVA was run to analyse the significance and variation of the variables and clusters (Appendix 6 Table 28) and was concluded that the only variable that was not significant was gender since all the others represented low values of variation. Then, a Hierarchical cluster analysis was performed in order to get the optimal number of clusters. By using the Average Linkage Method

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between groups, it is possible to conclude that the ideal number of clusters is 4 since the largest difference in coefficients is from stage 202 to stage 201 (Appendix 6 Table 29).

After this, we were able to perform a k-means cluster analysis with 4 different clusters: cluster 1 with 66 cases; cluster 2 with 48 cases; cluster 3 with 27 cases and cluster 4 with 65 cases (Appendix 6 Table 30). The only two characteristics that are common in all of the clusters are the gender and the highest level of schooling, being that every cluster is constituted by women with bachelor's degrees, although some other characteristics are the same for more than one cluster as well (Table 5). Additionally, the demographic characteristics are the same for cluster 1 and cluster 4 and also for clusters 2 and 3 in the sense that there are two groups of mainly young full-time students that currently do not have a monthly salary and two groups of employees with high salaries. Even though the sociodemographic characteristics are the same for these pairs of groups, the concerns towards sustainability regarding fashion purchases differ (Table 4). More in-depth descriptive statistics of each cluster are presented in Appendix 6 Table 31.

Final Cluster Centers				
	Cluster			
	1	2	3	4
How often do you buy from fast fashion brands?	3	2	3	2
How sustainable is your closet?	2	3	2	3
How important is it for you to make your closet more sustainable?	3	4	2	4
I am willing to pay more for sustainable products/brands.	3	4	2	4
I prefer green products to conventional ones.	3	4	3	4
I consider sustainability when shopping.	3	4	2	4
Gender	2	2	2	2
Age	1	2	2	1
Highest Level of Schooling	3	3	3	3
Occupation	1	3	3	1
Salary	1	4	4	1

Table 5 – Final Cluster Centers

Cluster 1 – Gen Z receptive consumers

This cluster is constituted of people who buy fast fashion quite frequently (every month) and mainly do not have sustainable clothes in their closets as well. They do not necessarily consider sustainability when shopping nor prefers green products over conventional ones but might be interested in buying more of these products and paying more for them, which means that they might potential conscious consumers. These are mainly young consumers between 15 and 24 years old, full-time students with a bachelor's degree that currently do not have a monthly salary.

Cluster 2 – Millennials conscious consumers

This group corresponds to people who do not buy fast fashion often (every 2 or 3 months) and already have some sustainable clothes in their closets. Additionally, these consumers are willing to buy more sustainable fashion and pay a premium price for it since they show preference towards these products compared to fast fashion ones and consider sustainability when shopping. The people in this group are mainly consumers between 25 and 34 years old with a bachelor's degree and that are employees with a monthly salary between 2001 and 3000€.

Cluster 3 – Millennials non-conscious consumers

The consumers in this cluster purchase fast fashion items every month and do not have a sustainable closet. They do not consider sustainability when purchasing clothes and are not interested in buying sustainable clothes nor are they willing to pay a higher price for them, since do not necessarily prefer sustainable products over fast fashion ones. Just like in the previous cluster, the consumers in this group are employees between 25 and 34 years old with a monthly salary between 2001 and 3000€.

Cluster 4 – Gen Z conscious consumers

These customers only buy fast fashion every 2 or 3 months and believe that their closet is already considerably sustainable. This group shows interest in improving the sustainability of their closet by buying more sustainable clothes and paying a higher amount of money for them. Similarly, to cluster 1, these consumers are mainly young full-time students that currently do not receive a monthly salary.

4.3 Discussion

It is possible to conclude that the fast fashion consumers considered in this study can be divided into four groups. The great majority of respondents were young consumers mainly between 15 and 34 years old, therefore the 4 clusters can be further divided into two groups: younger consumers or Gen Z consumers with ages between 15 and 24 years old and slightly older consumers between 25 and 34 years old, that are part of the Millennials generation. Regarding the concern towards sustainability, we conclude that both generations have consumers that are concerned with improving their sustainable purchase habits and others that are not as concerned or not concerned at all.

Starting with the Gen Z consumers (clusters 1 and 4), the first group consists of people that are frequent fast fashion consumers that still show some preference towards these products. Even though they are not extremely concerned with sustainability when they are looking to buy clothes, they might be willing to become more sustainable and change their purchase habits. The second group of Gen Z consumers is constituted of mainly already conscious consumers that only buy fast fashion products sporadically and that already maintain sustainable purchasing habits in their daily lives. According to the existing literature, Gen Z is considered to be the generation with the most overconsumption despite being concerned with the

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environmental impact of fast fashion. The main explanation for this is that young consumers are more concerned with spending less money than they are with sustainability.

However, with the findings of this analysis, it is interesting to see that even though these consumers are mainly full-time students and therefore don't have a monthly salary, they still demonstrate an interest in becoming more conscious and a willingness to pay more for sustainable products, contrary to the literature. Nevertheless, our findings are also in line with the literature in the sense that young consumers seem to be the most concerned with sustainability due to increasing awareness efforts in school and social media (Fagerhus and Hallqvist, 2020).

In the second age group, the Millennials (clusters 2 and 3), the way consumers view sustainable fashion and behave is significantly different, being that consumers from cluster 2 can be considered conscious and consumers from cluster 3 do not seem to be conscious at all. As it was mentioned before, these two clusters encompass mainly employed people with high salaries between 2001 and 3000€ which means that having a higher income than other groups does not mean that the interest towards sustainable fashion will be higher as well.

In the preliminary interviews, one of the experts mentioned that in Portugal one of the reasons that people still buy fast fashion even though they are concerned with sustainability is because the average incomes are lower compared to other countries. Although this is true, by evaluating Portuguese consumers we can also conclude that there are still consumers that are not willing to pay a premium price for sustainable clothes even though they have a considerably high salary compared to the country's average. This shows, once again, that price is a barrier to sustainable fashion for some consumers (McNeill and Moore, 2015), as mentioned in the before and previous analysis, even for consumers with higher levels of income. For conscious consumers though, price does not seem to prevent them from buying sustainable clothes, since these

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consumers are already aware the prices of sustainable products will not be the same as conventional ones and therefore, they adapt in order to guarantee that they do not further contribute to harming the environment (Fagerhus and Hallqvist, 2020).

Furthermore, the consumer segments found can be compared with the personas formed before according to the information collected from the interviews with experts from the fashion industry in Portugal. First, in the interviews, three different generations of consumers were found: Generations Z, Y and X. However, in this analysis, the groups of consumers corresponded only to people from Generation Z and Y, which might be explained by the fact that the survey distributed was mainly answered by young consumers and the answers from people older than 35 years old were few. Nevertheless, most of the consumers' characteristics found in the groups are in accordance with the experts' opinions since it was confirmed that young consumers (Generation Z) seem to be more concerned with environmental sustainability than older consumers (Generation Y), despite the last ones having a higher income and therefore a higher capacity to spend more money more expensive clothes.

This way, it can be concluded that young consumers, mainly from Generation Z, are the target consumers for the sustainable collections of fast fashion brands. These consumers purchase fast fashion items frequently and value what the brands have to offer them. But the concern for environmental sustainability is arising, with the awareness efforts spread through not only social media but also in schools around the world, which might significantly change even more the habits of these consumers in the future, since, as was mentioned, they have already stated changing in the last few years. The younger generations are significantly aware of the urgency to reduce environmental harm since they are the generations that will live through the consequences of today's actions. Therefore, it is important that fast fashion brands understand

these consumers' needs and offer products accordingly, in order to keep them satisfied and loyal.

5. Further Research

5.1 Introduction

The question of this dissertation “Why do Portuguese consumers buy fast fashion if they have environmental sustainability concerns?” is now answered. Despite buying for different reasons, the research confirmed that Portuguese consumers still have environmental sustainability concerns. In addition, the study theory of the "green consumption effect" (Tezer and Bodur, 2019) explains that consuming green products enhances the consumer experience: the use of these products, as opposed to conventional ones, increases customers' enjoyment. The investigation revealed, for example, that participants who listened to music using green headphones experienced it more favourably than those who listened to it with conventional headphones (Tezer and Bodur, 2019). This highlights how significant sustainability is for consumers: to match their existent concerns and to make them have a better post-purchase experience.

It is now clear that one can recommend fast fashion brands to focus more on sustainability efforts (something important for consumers and for the planet, in general). Beyond that, one can try to go even further by asking:

Q1: Are Portuguese consumers aware of the ongoing fast fashion brands' sustainability efforts? - Before recommending brands to focus more on sustainability efforts to match Portuguese consumers' concerns, it is important to first understand if they know about the current efforts at stake. If there is a communication issue, it must be solved.

Otherwise, even if more efforts are made, Portuguese consumers will not acknowledge their concerns are being matched.

Q2: What sustainability efforts are more important for Portuguese consumers? / What sustainability efforts do Portuguese consumers value the most? - The answer to these questions can represent a great contribution to fast fashion brands, helping them understand which efforts they should focus on.

Q3: Are Portuguese consumers willing to pay a higher price for sustainable products at fast fashion brands? Does the thought of “greenwashing” have an influence on their answer? - Understanding Portuguese consumers’ willingness to pay is key for brands to understand how far they can go in terms of costs. Checking if “greenwashing” comes to Portuguese consumers’ minds when considering their willingness to pay may also give brands insights about their consumers’ trust in them and the possible need for more transparent communication.

5.2 Survey

Theoretical matters about a survey’s purpose, principles, etc. were already cleared previously at the preliminary survey’s “Theoretical Introduction”. In this survey, the same building tool and sharing vehicles were used. The survey was shared from December 6th, 2022, to December 8th, 2022. 128 answers were collected, which guarantees a level of confidence with $\pm 10\%$ of sampling error. This number is not ideal but is satisfying for a first approach to this further research.

5.2.1 Methodology

The survey starts with a brief descriptive presentation of the topic, a time prediction (of 2 minutes), a request for transparency, and a secrecy compromise. Respondents are also informed that the study is for academic purposes only. Finally, they are told the word “sustainability” always refers to “environmental sustainability”, as the work project topic specifically focuses on this type.

Once more, the survey is mostly composed of closed-ended questions, all grounded, as well as the answer-options, based on well-known scales. The survey was divided into 5 sections and has a total of 13 questions (Appendix 7).

The first section, “Requirements to Proceed”, asks respondents if they are Portuguese and if they buy at fast fashion brands. These are, again, two essential requirements, as the research question focuses on Portuguese consumers who buy fast fashion. If respondents answer “no” at any of the two questions of this section, they are immediately directed to the end of the survey.

The second section, “Sustainability Efforts’ Awareness”, precisely asks respondents how aware they are about the five fast fashion brands’ sustainability efforts: Inditex Group (Zara, Pull & Bear, Stradivarius and Bershka), H&M, Primark, Mango and Shein – the ones the dissertation focuses at. Respondents can pick one of the Likert’s scale levels for each brand’s efforts, from “not at all aware” to “extremely aware”. This is the only question in this section.

The third section, “Sustainability Efforts’ Valuation”, attempts to understand what sustainability efforts are more important for Portuguese consumers. In the first question of this section, respondents are offered a list of efforts to pick from: “using natural materials on clothing (banana Fibre, hemp, etc.)”, “using recyclable materials on clothing”, “having second hand initiatives (to reuse and recycle)”, “using sustainable packaging (for online orders)”,

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“using sustainable vehicles for deliveries”, “investing in innovation to reduce the waste and pollution in production process”, and “other”. As revealed in “Literature Review”, these are the most common efforts a fast fashion brand can adopt. The second question of this section allows respondents who previously picked the answer-option “other” to specify what they refer to.

The fourth section, “Willingness to Pay and Other Considerations” focuses on respondents’ willingness to pay for sustainable products at fast fashion brands and eventual thought of greenwashing when making their option. The first question of this section asks respondents if they are willing to pay more for a sustainable t-shirt than for a non-sustainable t-shirt, considering both are sold by the same fast fashion brand. They can only either pick “yes” or “no”. The second question of this section asks respondents if the thought of “greenwashing” came to their minds while answering the previous question. A brief definition of the “greenwashing” concept is offered for respondents to name the thoughts they may have had. This is also a “yes” or “no” question.

The last section is, as usual, dedicated to sociodemographic characteristics of the population. The survey ends, once more, by questioning respondents’ gender, age, living area, highest level of schooling, occupation and salary.

5.2.2 Results

When the survey was closed on December 8th, 2022, 156 answers were collected. Out of these, 2 answers belong to non-Portuguese respondents and 29 to people who do not buy at fast fashion brands. Therefore, only 125 answers were considered as “complete”. As previously explained, this number ensures a level of confidence with only $\pm 10\%$ of sampling error. To see detailed statistical information about the results, please see (Appendix 7, Tables 32 to 39 and Figure 14)

Sociodemographic Profile

28 of the 125 respondents are male (22.4%) and 96 female (76.8%). There is also one respondent who picked “other” as gender (0.8%). The sample includes people from 15-24 to +65 years old. Most respondents (76%) belong to the 15-24 range. The 25-34, 45-54, 55-64, 35-44 and +65 ranges follow with 15, 6, 6, 2 and 1 respondents, respectively.

The most common is that respondents have Bachelor as the highest level of schooling (44% of respondents claim so). The master’s degree, high school and basic education levels follow with 36.8%, 16.8% and 2.4% of the answers, respectively.

The 125 respondents are all from Portugal: this number already excludes other nationalities, as previously explained. As expected, the majority is from Lisbon Area (71.2%). However, it was also possible to reach consumers from Great Lisbon (11.2%), Centre Littoral (9.6%), Great Porto (6.4%), North Littoral (0.8%) and South Littoral (0.8%).

Relatively to occupation, it is possible to affirm that most respondents are students (55.2%). The others are employed (23.2%), student workers (12.8%), employers (5.6%), unemployed (2.4%) and retired (0.8%). Following the above “student tendency”, 51 respondents (40.8%) answered “does not apply” when questioned about salary. The answer-options “1001-2000”, “0-705”, “706-1000”, “2001-3000” and “+3000” follow with 26, 25, 12, 6 and 5 respondents, respectively.

Behavioural Profile

Concerning respondents’ awareness of the different fast fashion brands’ sustainability efforts, a clear tendency can be verified: consumers are not very aware of them. Most answers are concentrated in the options “not at all aware” and “slightly aware”. In addition, the option “not

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at all aware” is the most picked. As it is possible to see in the following image, there is a clear deviation of the awareness results to the negative side:

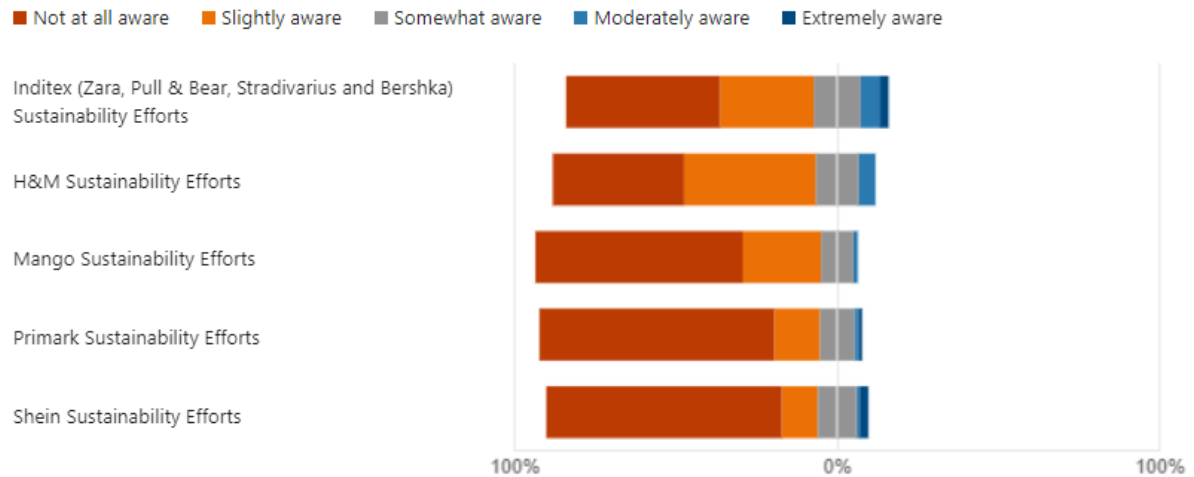


Figure 14: Fast Fashion brands' sustainability efforts awareness

Regarding the sustainability efforts Portuguese consumers value the most, there is a clear winner: “using recyclable materials on clothing” (picked by 89 respondents). The efforts “having second hand initiatives (to reuse and recycle)”, “investing in innovation to reduce the waste and pollution in production process”, “using sustainable packaging (for online orders)”, “using natural materials on clothing (banana Fibre, hemp, etc.)” and “using sustainable vehicles for deliveries” were picked by 76, 76, 73, 55 and 28 respondents, respectively. The answer-option “other” was only picked by 4 respondents. In the following question, they all specified “other” basically as “reducing textile waste”.

Relatively to Portuguese consumers' willingness to pay for sustainable products sold by fast fashion brands, results were somewhat positive: 75 respondents (60%) claim they would be willing to pay more for the sustainable option. However, 40% are still left resistant to this price difference. The answers to the following associated question about the thought of greenwashing

show worse results: 62.4% of respondents affirm “greenwashing” came to their mind when thinking about their willingness to pay for a sustainable product sold by a fast fashion brand.

5.3 Discussion

As explained, it is clear that one can recommend fast fashion brands to focus more on sustainability efforts in order to satisfy the needs of consumers. Going further, however, allowed more deep understanding:

Q1 allowed to conclude that Portuguese consumers are very little aware of fast fashion brands’ sustainability efforts. Even though some of these brands have made a higher effort to become more sustainable in the last few years compared to the others, Portuguese consumers show a similar low level of awareness of the sustainability efforts of every brand. This means a high investment in communication is necessary for consumers to know what brands are doing now and will do, in terms of sustainability efforts.

Q2, the centre and purpose of this future research allowed to specify the most relevant efforts for Portuguese consumers: “using recyclable materials on clothing” is clearly the most important for Portuguese consumers, being followed by “having second hand initiatives (to reuse and recycle)”, “investing in innovation to reduce the waste and pollution in production process” and “using sustainable packaging (for online orders)”. “Using natural materials on clothing (banana Fibre, hemp, etc.)” and “using sustainable vehicles for deliveries” efforts were only picked by less than 55 and 28 respondents, respectively. “Reducing textile waste” (the specification of the answer-option “other”) was also only picked by 4 respondents.

Finally, Q3 allowed to conclude that many Portuguese consumers are willing to pay more for sustainable products at fast fashion brands, a very positive indicator. However, once more, communication is needed to open the dialogue with consumers to clarify the many existent

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thoughts of “greenwashing”, since consumers seem to associate these brands’ efforts with greenwashing which causes scepticism among them when it comes to buying sustainable products, especially for a higher price.

In sum, the further research allowed concluding: 1) the most important sustainability efforts for Portuguese consumers for brands to implement or reinforce, 2) communication is needed to inform consumers about the ongoing and future sustainability efforts and to open a transparent dialogue about fast fashion's environmental effects and real measures being taken to fight them.

More research would be needed in order to have more solid conclusions about the sustainability efforts the fast fashion companies should focus on as well as to have a greater understanding of consumers’ willingness to pay for sustainable items sold by fast fashion brands and their opinions regarding greenwashing. Furthermore, future research should also study how fast fashion brands can become more transparent.

6. Conclusion

6.1 Study’s Findings

The conjoint analysis demonstrated that the attribute which Portuguese consumers value the most when purchasing clothes is the “Quality” of the products, followed by the “Price” which gives the impression that consumers are not as concerned with the environmental impact of fashion as they are with the quality of the clothes they purchase and how much they spend. Nevertheless, by analysing the consumer’s choices it was possible to conclude that they might be willing to choose the sustainable options and even pay a higher price for it if the difference in price is not significant and if the quality is not compromised, which once again shows the consumer’s sensitivity to price as well as to quality. The ideal products for Portuguese fashion consumers are fashionable or trendy clothes, of average or high quality and with affordable

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prices (5€ and 10€), and if there is a sustainable alternative with those characteristics, they are willing to purchase that one.

In this study, we found two different generations of consumers that fast fashion companies should focus on, which are Generation Z and Millennials. We have concluded that the people in these two groups despite having similar sociodemographic characteristics have different concerns towards sustainability and different fashion needs. On one hand, the consumers that belong to Generation Z, despite mainly being students with no income, demonstrate a higher concern towards sustainability than the older generation. These young consumers are concerned with the negative impact of their purchases and are willing to make more sustainable choices as well as pay more for them, even though some of them still purchase fast fashion quite frequently. Regarding the Millennials, even though the majority of consumers also demonstrate an interest in progressively changing their fashion purchase habits in order to make them more sustainable, there is still a significant part that does not want to change and that is not willing to pay higher prices for sustainable products despite having a considerably high income. This shows that there are consumers that are still sceptical and not interested in spending more money on sustainable clothes because fast fashion ones are cheaper and satisfy their needs. This way, younger consumers are the ones that already show more interest in becoming more sustainable which gives an opportunity for fast fashion brands to focus on them and try to offer products that are in line with their needs.

With further research, it was possible to confirm some of the findings and predictions presented before. Most Portuguese consumers reported that they are not aware of the sustainability, efforts of the fast fashion brands analysed which means that the brands are not being successful with the communication strategies of their sustainable collections. Furthermore, consumers stated which environmental sustainability efforts from fashion brands they value the most which will

be recommended to the fast fashion brands in the next chapter. Finally, the willingness to pay more for a sustainable t-shirt compared to a non-sustainable t-shirt from the same fast fashion brand was tested in order to confirm once again if Portuguese consumers are willing to pay more for sustainable items and the answers were positive since most consumers showed interest to opt for the sustainable option. Nevertheless, most consumers also reported having thought of greenwashing when asked to choose between t-shirts, which confirmed that consumers are sceptical about fast fashion brands' true motivations and do not fully trust them to be honest about their sustainability efforts.

The paradox between fast fashion and sustainability is visible in the findings of this work. Portuguese fashion consumers want to become more sustainable and extend their environmental concerns to their fashion purchases. However, on average they are still avid fast fashion consumers because they believe that there are still significant barriers to sustainable fashion and that in order to purchase sustainable items it is necessary to sacrifice the benefits provided by fast fashion. Therefore, fast fashion companies should take action to overcome these barriers and to secure and satisfy customers.

6.2 Recommendations

Due to the rise of sustainability concerns among consumers, it is crucial that fast fashion brands keep up with their needs and be able to provide the products they are looking for. A large part of consumers in this study has demonstrated interest in purchasing sustainable clothes and has already decreased their purchases at fast fashion brands in the last few years, which means these brands have been losing customers for quite some time now due to not meeting their needs. Furthermore, some Portuguese consumers showed that they are slightly sceptical towards the honesty and motives of the fast fashion brands since they tend to associate these brands with greenwashing when considering buying the sustainable clothes they offer instead of

conventional ones. This way, it is essential that fast fashion brands rethink their strategies in order to meet their customers' expectations and attract new ones as well since the number of conscious consumers keeps increasing. Therefore, based on the analyses performed in this study and the conclusions presented before, the following efforts are recommended:

Improvement of supply chain processes

Based on the conclusions of the analyses performed in the study, it is recommended that fast fashion brands invest in improving their supply chain processes in order to offer a wide variety of sustainable clothes that meet consumers' needs by having the attributes they value the most. This means that these brands should maintain, to some extent, the way they are perceived by their loyal customers, such as being trendy, immediate, affordable and having a variety of products. Nevertheless, they should also try to be perceived as sustainable to attract conscious consumers and maintain the ones that are starting to look for a more sustainable option. Therefore, the brands should focus their efforts on producing fashionable sustainable clothes that have reasonable prices, due to the importance of price for consumers, but of great quality as well, contrary to most fast fashion products, because most consumers value quality significantly when purchasing clothes and are not willing to sacrifice it for lower prices. It is then important that when consumers go to fast fashion stores, they can easily find sustainable clothes that satisfy their environmental concerns while offering the benefits provided by fast fashion products.

Sustainability efforts

Fast fashion brands are already making an effort to invest in changes to make their production and delivery processes more sustainable. However, consumers do not seem to be recognizing their efforts. As mentioned before, in order to make accurate recommendations to fast fashion

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brands that are in accordance with consumers' expectations, Portuguese consumers were given some options of environmental sustainability efforts and were asked to choose the ones they value the most. This way, it is recommended that fast fashion brands invest in the use of recyclable materials; second hand initiatives; sustainable packaging; natural materials; sustainable vehicles for deliveries and reducing textile waste. Even though some brands might already be doing some of the practices, it is highly recommended to invest in the ones that they are not doing yet in order to meet consumers' needs and therefore attract their attention to the products offered.

Communication of sustainable offers

Investing in the sustainability efforts mentioned above might be crucial for fast fashion brands to meet the needs of conscious consumers, but it is not enough. Some of these brands have been trying to become more sustainable in the last few years by implementing some sustainability measures, but consumers are still decreasing their purchases from these brands. This way, investing in the communication of their sustainable offers is one of the most important tasks that fast fashion brands need to accomplish. The reality is that most consumers probably do not expect to find sustainable products at fast fashion stores and most of them are not even aware that these collections exist, as was confirmed by further research performed. This lack of awareness might have contributed to the change in consumers' fashion habits in the last few years, by decreasing their purchases of fast fashion products. Therefore, these brands are once again losing the opportunity to satisfy the needs of consumers that have arising concerns towards sustainability, which leads them to choose more sustainable alternatives. Investments in marketing campaigns for sustainable collections are an example of how these brands can make consumers aware of their sustainable alternatives. Furthermore, it should be easy for consumers to identify which clothes are sustainable when they are shopping either at the stores

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or online, so these products should be properly marked and differentiated from the non-sustainable ones.

Transparency

The lack of transparency of fast fashion brands regarding sustainability in their supply chain processes still leaves consumers sceptical about whether or not the clothes from their sustainable collections are effectively sustainable since these brands are often accused of greenwashing. These assumptions were confirmed with the further research done in this study since most consumers stated that they think about greenwashing when they have to make a choice between sustainable and non-sustainable options offered by a fast fashion brand. This way, it is crucial that brands invest in new and better ways to demonstrate how they are changing their production processes as well as their business models to become more sustainable brands with less harmful impact on the environment because the information presented in the sustainability reports does not seem to be sufficient to convince consumers that changes are being made. Total transparency about every step of the supply chain process is required to inform consumers about everything these companies do until the selling stage.

Therefore, brands should disclose information about how much they produce; how they produce their products, including full disclosure about who their suppliers are and how they work; and what are the goals to be achieved as well as what is being done to achieve them. It is not enough anymore to only say that the products are sustainable, so it is necessary to know exactly which materials are being used in the clothes production. Finally, consumers need to be informed about objective results these companies achieve every year to reduce their negative impact on the environment regarding, for example, the reduction of waste; water usage; pollution; carbon footprint, among others.

6.3 Limitations

This dissertation study is based on the group's research and scientific information from other research papers. In every study, findings may include some limitations. By identifying them, future research can address them and develop better work:

Survey samples' limitations

Gender, age, location and occupation – many of the conclusions of the present dissertation are based on the three surveys carried out. However, these results include some flaws. Firstly, there's a gender tendency in the two surveys: most respondents are female (70% in the conjoint analysis survey and 76.8% in the further research survey). Secondly, all three surveys mostly reached young respondents, which can bias the conclusions: most respondents belong to the 15-24 age range (75% in the conjoint analysis survey and 76% in the further research survey). Thirdly, the surveys' answers are not as representative of Portugal's geographic area as desired: most respondents are from the Lisbon area (64% in the conjoint analysis survey and 71.2% in the further research survey). Fourthly, there is also a common absolute majority winner in "occupation" in all surveys: full-time student (61% in the conjoint analysis survey and 55.2% in the further research survey). Although the surveys also reached males, other age ranges, other Portuguese geographical areas, and Portuguese consumers with different occupations, the present flaws cannot be denied. A wider sample in terms of the mentioned four categories would allow more solid conclusions.

Margin of Error – the number of answers obtained in the conjoint analysis survey and in the further research survey guarantees a reasonable margin of error (+/- 10%). These numbers are not as great as desired. A larger number of answers would allow more confident conclusions about the topic at stake. This limitation is somehow related to time constraints, typical of the

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academic context. In order to get more answers and be closer to a 100% confidence level, more time would be needed.

Conjoint Analysis' limitation

The Conjoint Analysis made was also an important part of this dissertation, essential to reach the conclusions stated above. Unfortunately, one main flaw can also be recognized here: more attributes could have been included in the process. The Conjoint Analysis only considered four attributes: “price”, “sustainability”, “quality”, and “style”. A larger list of attributes would, once more, guarantee more confident conclusions. This limitation is somehow related to the effort in making simpler surveys for respondents to answer. With the existent means and time constraints mentioned above, one cannot risk missing respondents due to offering them complex surveys to answer.

Consumers bias limitation

One must also consider that part of the answers from Portuguese consumers may be biased. The topic at stake deals with an ethical issue. Some respondents might answer ideally and not truthfully about their habits, intentions or beliefs. This can play in the conclusion's benefit or not. There can be more consumers with negative fast fashion habits than results show, for example, which would support once more that “Portuguese consumers buy fast fashion”. However, consumers may be less concerned about sustainability than they claim, which would contradict the pronounced tendency and respective conclusions and recommendations.

Cluster Analysis' limitation

Once again, due to the similarity of the sociodemographic characteristics of the respondents of the preliminary survey, the results of the cluster analysis might not be the most accurate and the

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most representative of Portuguese fashion consumers. Even though the four clusters represent different groups of consumers with different environmental concerns they consist only of people of two generations with similar ages, genders and incomes. Future research should be done with a more diversified sample and with other relevant variable

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8. Appendices

10.1 Appendix 1: Sustainable Labels in Fashion

Table 1: Example of Sustainability Label in Fashion (Adapt from Graham, 2022)

Label	Name	Description
 The logo for Certified B Corporation. It features the word "Certified" above a large letter "B" inside a circle, with "Corporation" below it.	B Corp	A more general certification given to companies that meet rigorous standards of social and environment performance, accountability, and transparency.
 The logo for the EU Ecolabel. It features a green leaf with a blue Euro symbol inside it, surrounded by stars. Below the leaf is the text "EU Ecolabel" and the website "www.ecolabel.eu".	Ecolabel by the European Union	Denotes products with reduced environmental impacts throughout their life cycle
 The logo for Fairtrade International. It features a stylized figure in a circle, with the text "FAIRTRADE INTERNATIONAL" below it.	Fairtrade	Guarantees that farmers and workers involve in production were compensated fairly. More of a validation of ethical practices, but also promotes sustainable agriculture.

	GCC Brandmark	Validation for individual products or fashion collection that meet rigorous social, ethical and environment standard.
	USDA Organic	Made for organic agricultural practices. Therefore, a USDA certification for a shirt that ensures the cotton was grown organically, but does not guarantee that the shirt is free of toxic
	Global Organic Textile Standard (GOTS)	Certified textiles contain at least 70% organic fibers; all chemicals used must meet strict criteria. Proper wastewater treatments also mandatory
	PETA-Approved Vegan	Used by companies that make vegan and animal friendly clothing and accessories as well as

		assurance verifying that their product is vegan.
 WFTO GUARANTEED FAIR TRADE	World Fair Trade Organization (WFTO)	A fair-trade certification that ensures responsible practices across the supply chain and support small producers and their communities.
 OEKO-TEX® CONFIDENCE IN TEXTILES STANDARD 100 6619CIT CITEVE Tested for harmful substances. www.oeko-tex.com/standard100	OEKO-TEX Standard 100	Ensures that the tested yarns and textiles do not contain illegal substances, regulated harmful substances or known harmful, but unregulated chemical.
	Made-By	Assure that a brand operates responsibility with respect to people and the planet

10.3 Appendix 3 – Preliminary Survey

Structure of the Survey

Hello!

Our research is all about “Fast Fashion and Sustainability”. For non-bias purposes, we will not share much more information about our intention with this research. Please answer the following survey with transparency. It will take you no more than 5 minutes to answer!

Please know there are no wrong answers and that your results are anonymous and will not be shared. It is for academic purposes only.

Notice that every time the word "sustainability" appears, it refers specifically to "environmental sustainability".

Thank you very much for your time!

Section 1

Requirements to Proceed

1. Are you Portuguese?

- a. Yes
- b. No

2. Do you buy products at fast fashion brands?

- a. Yes
- b. No

Section 2

Fast Fashion Consumption Patterns

3. Select the fast fashion brand(s) from which you buy the most.

You can select more than one option

- a. Inditex Group (Zara, Pull & Bear, Stradivarius and Bershka)
- b. H&M
- c. Primark
- d. Mango
- e. Shein

4. How often do you buy from fast fashion brands?

- a. More than once a week
- b. Once a week
- c. Every two weeks
- d. Once a month
- e. Every 2 or 3 months
- f. Once a year

5. Until what extent have your fast fashion purchase habits decreased during the last years?

- a. Not at all
- b. Very little
- c. Somewhat
- d. To a great extent

6. Why do you buy from fast fashion brands?

You can select more than one option.

- a. They follow current fashion trends
- b. They are affordable
- c. They constant renew collections
- d. They are easy to find
- e. They have an easy online shopping process with fast delivery

Section 3

Sustainability Knowledge and Concerns

7. Rate your level of agreement with each statement.

Strongly	Disagree	Neither Agree	Agree	Strongly
Disagree		or Disagree		Agree

- a. I am familiar with the concept of sustainability.
- b. I have a strong level of knowledge about sustainability.
- c. I am willing to pay more for sustainable products/brands.
- d. I prefer green products to conventional ones.
- e. I am concerned about sustainability.
- f. I consider sustainability when shopping.

Section 4

Fashion & Sustainability

8. How sustainable is your closet?

1	2	3	4	5
Not at all				Extremely

9. How satisfied are you with your closet level of sustainability (previous answer)?

1	2	3	4	5
Very				Very
dissatisfied				satisfied

10. How important is it for you to make your closet more sustainable?

1	2	3	4	5
Not important at all				Absolutely essential

11. How difficult is it for you to make sustainable fashion purchases?

1	2	3	4	5
Very easy				Very difficult

12. Select the barriers you find when purchasing sustainable products.

You can select more than one option.

- a. Price
- b. Lack of knowledge about sustainable alternatives
- c. Lack of choice/sustainable alternatives
- d. Lack of aesthetic
- e. Lack of understanding of fast fashion's environmental impact
- f. Skepticism, overbusiness transparency, and social desirability

Section 5

Perceptions About Fast Fashion Brands

In all scales, 1 means "very low association" and 5 means "very high association".

13. "Low prices" - How do you rate each brand in terms of being associated with "low prices"?

	1	2	3	4	5
Inditex Group					
H&M					
Primark					
Shein					
Mango					

14. "Trendiness" - How do you rate each brand in terms of being associated with "trendiness"?

	1	2	3	4	5
Inditex Group					
H&M					
Primark					
Shein					
Mango					

15. "Variety" - How do you rate each brand in terms of being associated with "variety"?

	1	2	3	4	5
Inditex Group					
H&M					
Primark					
Shein					
Mango					

16. "Bad quality" - How do you rate each brand in terms of being associated with "bad quality"?

	1	2	3	4	5
Inditex Group					
H&M					
Primark					
Shein					
Mango					

17. "Immediateness" - How do you rate each brand in terms of being associated with "immediateness"?

	1	2	3	4	5
Inditex Group					
H&M					
Primark					
Shein					
Mango					

Section 6
Socio-demographics

18. What is your gender?

- a. Male
- b. Female
- c. Other

19. What is your age?

- a. 15-24
- b. 25-34
- c. 35-44
- d. 45-54
- e. 55-64
- f. +65

20. Where do you live?

- a.
- b. Lisbon Area
- c. Great Porto
- d. Great Lisbon
- e. North Littoral
- f. Centre Littoral
- g. South Littoral
- h. North Interior
- i. South
- j. Islands

21. What is your highest level of education?

- a. Basic Education
- b. Highschool
- c. Bachelor
- d. Master
- e. Doctorate/PhD
- f. Other

22. What is your occupation?

- a. Student
- b. Student Worker
- c. Employer
- d. Employee
- e. Unemployed
- f. Retired
- g. Other

23. What is your salary?

- a. 0-705€
- b. 706-1000€
- c. 1001-2000€
- d. 2001-3000€
- e. +3000€
- f. Does not apply

Table 4 – Statistics regarding the gender of respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	167	81.1	81.1	81.1
	Male	39	18.9	18.9	100.0
	Total	206	100.0	100.0	

Table 5 – Statistics regarding the Age of respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15–24	179	86.9	86.9	86.9
	25–34	16	7.8	7.8	94.7
	45–54	9	4.4	4.4	99.0
	55–64	2	1.0	1.0	100.0
	Total	206	100.0	100.0	

Table 6 – Statistics regarding the Place of Living of respondents

Place of living					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Centre Littoral	21	10.2	10.2	10.2
	Great Lisbon	28	13.6	13.6	23.8
	Great Porto	11	5.3	5.3	29.1
	Islands	1	.5	.5	29.6
	Lisbon Area	140	68.0	68.0	97.6
	North Littoral	3	1.5	1.5	99.0
	South	2	1.0	1.0	100.0
	Total	206	100.0	100.0	

Table 7 – Statistics regarding the Highest Level of Schooling of respondents

Highest level of schooling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	105	51.0	51.0	51.0
	Basic Education	2	1.0	1.0	51.9
	Doctorate/PHD	1	.5	.5	52.4
	Highschool	38	18.4	18.4	70.9
	Master	59	28.6	28.6	99.5
	Other	1	.5	.5	100.0
	Total	206	100.0	100.0	

Table 8 – Statistics regarding the Occupation of respondents

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employee	39	18.9	18.9	18.9
	Employer	8	3.9	3.9	22.8
	Other	2	1.0	1.0	23.8
	Student	114	55.3	55.3	79.1
	Student Worker	42	20.4	20.4	99.5
	Unemployed	1	.5	.5	100.0
	Total	206	100.0	100.0	

Table 9– Statistics regarding the Salary of respondents

Salary					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	+3000	2	1.0	1.0	1.0
	0-705	46	22.3	22.3	23.3
	1001-2000	35	17.0	17.0	40.3
	2001-3000	5	2.4	2.4	42.7
	706-1000	26	12.6	12.6	55.3
	Does not apply	92	44.7	44.7	100.0
	Total	206	100.0	100.0	

Figure 1 – Fast fashion brands from which consumers buy the most

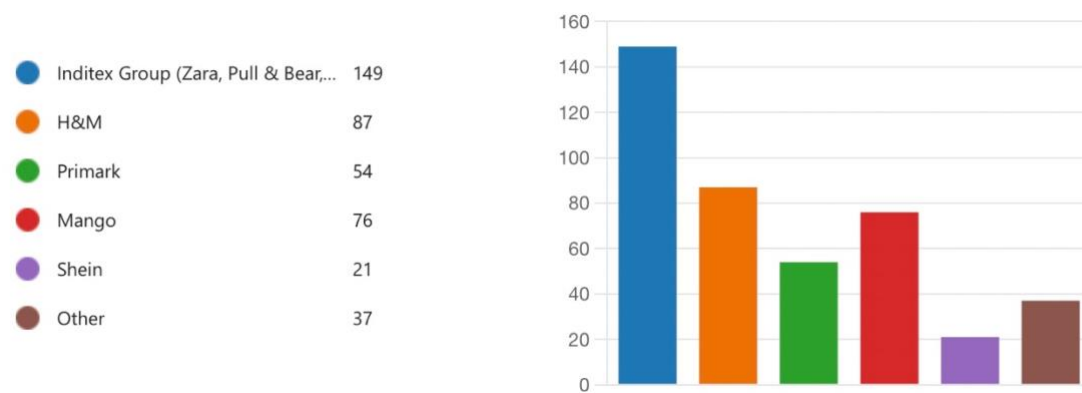


Table 10 – Frequency of fast fashion purchases

How often do you buy from fast fashion brands?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Every 2 or 3 months	90	43.7	43.7	43.7
	Every two weeks	23	11.2	11.2	54.9
	Once a month	57	27.7	27.7	82.5
	Once a week	3	1.5	1.5	84.0
	Once a year	33	16.0	16.0	100.0
	Total	206	100.0	100.0	

Table 11 – Evolution of fast fashion purchase habits

Until what extent have your fast fashion purchase habits decreased during the last years?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	39	18.9	18.9	18.9
	Somewhat	78	37.9	37.9	56.8
	To a great extent	46	22.3	22.3	79.1
	Very little	43	20.9	20.9	100.0
	Total	206	100.0	100.0	

Table 12 – Familiarity with the concept of sustainability

I am familiar with the concept of sustainability.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	97	47.1	47.1	47.1
	Disagree	3	1.5	1.5	48.5
	Neither Agree or Disagree	6	2.9	2.9	51.5
	Strongly Agree	96	46.6	46.6	98.1
	Strongly Disagree	4	1.9	1.9	100.0
	Total	206	100.0	100.0	

Table 13 – Knowledge about sustainability

I have a strong level of knowledge about sustainability.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	91	44.2	44.2	44.2
	Disagree	26	12.6	12.6	56.8
	Neither Agree or Disagree	55	26.7	26.7	83.5
	Strongly Agree	33	16.0	16.0	99.5
	Strongly Disagree	1	.5	.5	100.0
	Total	206	100.0	100.0	

Table 14 – Willingness to pay more for sustainable products

I am willing to pay more for sustainable products/brands.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	66	32.0	32.0	32.0
	Disagree	47	22.8	22.8	54.9
	Neither Agree or Disagree	62	30.1	30.1	85.0
	Strongly Agree	25	12.1	12.1	97.1
	Strongly Disagree	6	2.9	2.9	100.0
	Total	206	100.0	100.0	

Table 15 – Preference for green products

I prefer green products to conventional ones.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	82	39.8	39.8	39.8
	Disagree	25	12.1	12.1	51.9
	Neither Agree or Disagree	66	32.0	32.0	84.0
	Strongly Agree	29	14.1	14.1	98.1
	Strongly Disagree	4	1.9	1.9	100.0
	Total	206	100.0	100.0	

Table 16 – Concern about Sustainability

I am concerned about sustainability.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	113	54.9	54.9	54.9
	Disagree	3	1.5	1.5	56.3
	Neither Agree or Disagree	23	11.2	11.2	67.5
	Strongly Agree	65	31.6	31.6	99.0
	Strongly Disagree	2	1.0	1.0	100.0
	Total	206	100.0	100.0	

Table 17 – Consideration of Sustainability when shopping

I consider sustainability when shopping.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	63	30.6	30.6	30.6
	Disagree	41	19.9	19.9	50.5
	Neither Agree or Disagree	74	35.9	35.9	86.4
	Strongly Agree	16	7.8	7.8	94.2
	Strongly Disagree	12	5.8	5.8	100.0
	Total	206	100.0	100.0	

Table 18 – Level of closet's sustainability

How sustainable is your closet?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	19	9.2	9.2	9.2
	2	67	32.5	32.5	41.7
	3	87	42.2	42.2	84.0
	4	32	15.5	15.5	99.5
	5	1	.5	.5	100.0
	Total	206	100.0	100.0	

Table 19 – Level of satisfaction with closet's sustainability

How satisfied are you with your closet level of sustainability?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	19	9.2	9.2	9.2
	2	92	44.7	44.7	53.9
	3	66	32.0	32.0	85.9
	4	24	11.7	11.7	97.6
	5	5	2.4	2.4	100.0
	Total	206	100.0	100.0	

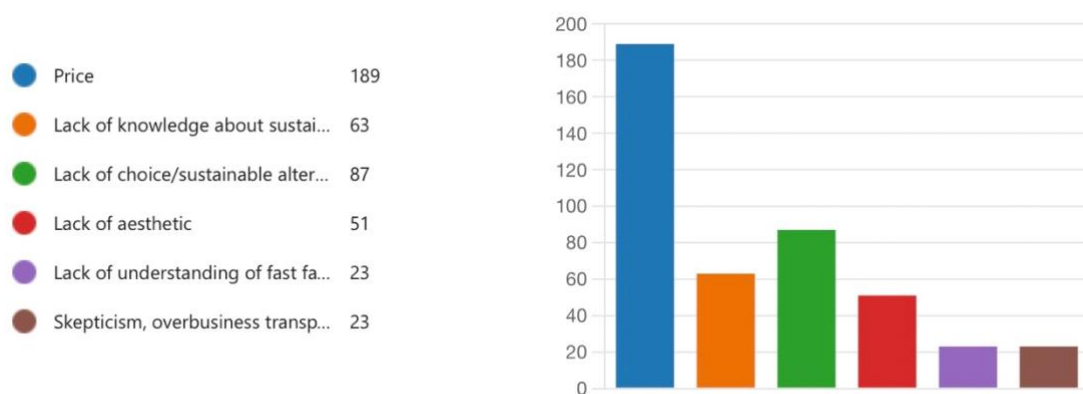
Table 20 – Importance of making the closet more sustainable

How important is it for you to make your closet more sustainable?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	4.4	4.4	4.4
	2	27	13.1	13.1	17.5
	3	68	33.0	33.0	50.5
	4	74	35.9	35.9	86.4
	5	28	13.6	13.6	100.0
	Total	206	100.0	100.0	

Table 21 – Level of difficulty of making sustainable purchases

How difficult is it for you to make sustainable fashion purchases?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	1.5	1.5	1.5
	2	14	6.8	6.8	8.3
	3	52	25.2	25.2	33.5
	4	91	44.2	44.2	77.7
	5	46	22.3	22.3	100.0
	Total	206	100.0	100.0	

Figure 2 – Barriers consumers find when purchasing sustainable fashion products



10.5 Appendix 5 – Conjoint Analysis

Survey Structure

Hello!

Our research is all about “Fast Fashion and Sustainability”. Please answer the following survey with transparency. It will take you no more than 5 minutes to answer!

Please know there are no wrong answers and that your results are anonymous and will not be shared. It is for academic purposes only.

Notice that every time the word "sustainability" appears, it refers specifically to "environmental sustainability".

Thank you very much for your time!

Question: Imagine that you want to buy a T-shirt. Regarding the attributes that are presented, please choose the combination you prefer the most.

Attributes	Levels
Style	Trendy
	Classic
Quality	High
	Average
	Poor
Sustainability	Recycled Material
	Non-recycled Materials
Price	5€
	10€
	15€

Demographic Questions:

What is your gender?

- a. Male
- b. Female
- c. Other

What is your age?

- a. 15-24
- b. 25-34
- c. 35-44
- d. 45-54
- e. 55-64
- f. +65

Where do you live?

- a. Lisbon Area
- b. Great Porto
- c. Great Lisbon
- d. North Littoral
- e. Centre Littoral
- f. South Littoral
- g. North Interior
- h. South
- i. Islands

What is your highest level of education?

- a. Basic Education
- b. Highschool
- c. Bachelor
- d. Master
- e. Doctorate/PhD
- f. Other

What is your occupation?

- a. Student
- b. Student Worker
- c. Employer
- d. Employee
- e. Unemployed
- f. Retired
- g. Other

What is your salary?

- a. 0-705€
- b. 706-1000€
- c. 1001-2000€
- d. 2001-3000€
- e. +3000€
- f. Does not apply

Figure 4 – What is your gender? (retrieved from Conjoint.ly)

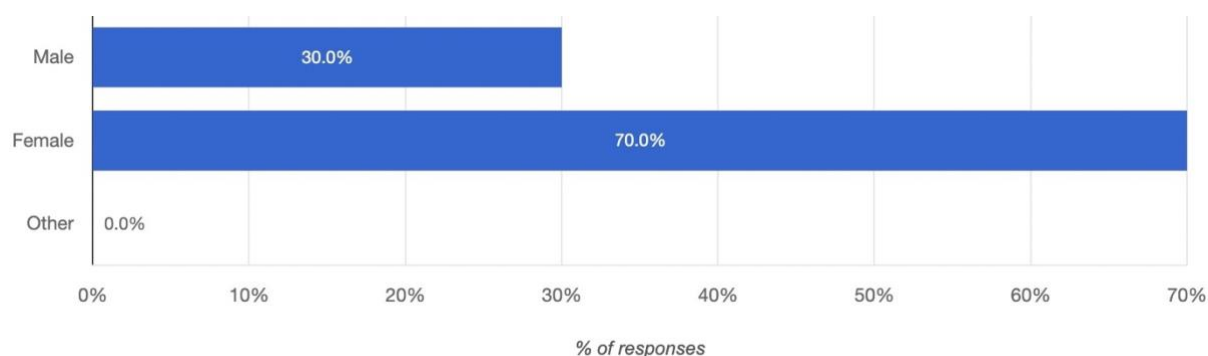


Figure 5 – What is your ag? (retrieved from Conjoint.ly)

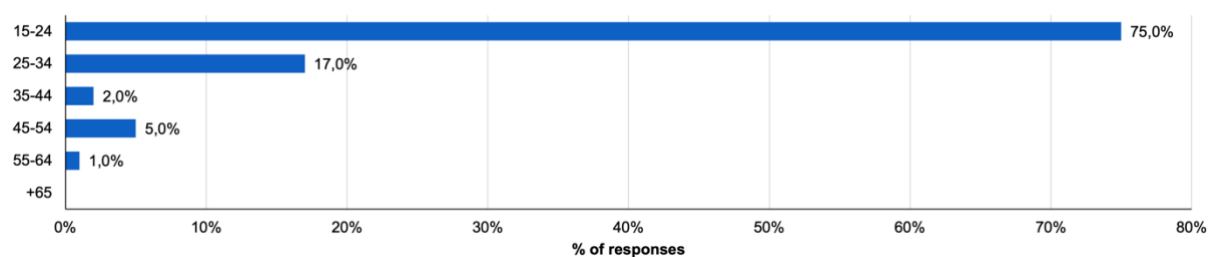


Figure 6 – Where do you live? (retrieved from Conjoint.ly)

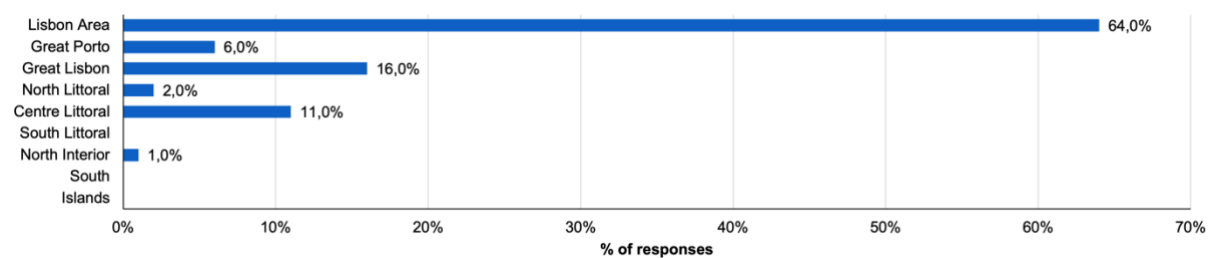


Figure 7 – What is your highest level of schooling? (retrieved from Conjoint.ly)

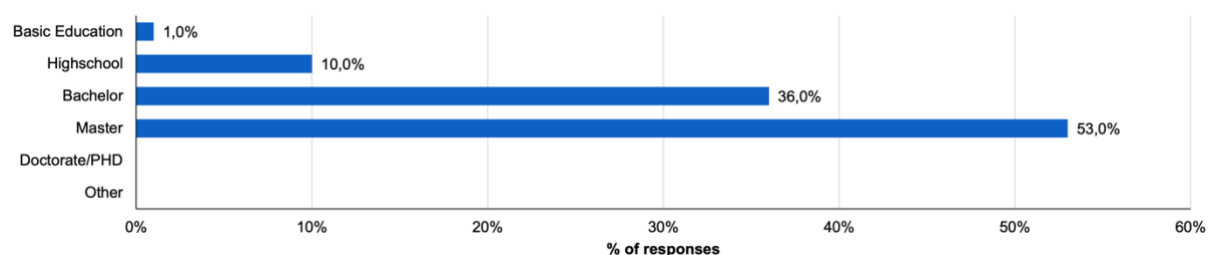


Figure 8 – What is your occupation? (retrieved from Conjoint.ly)

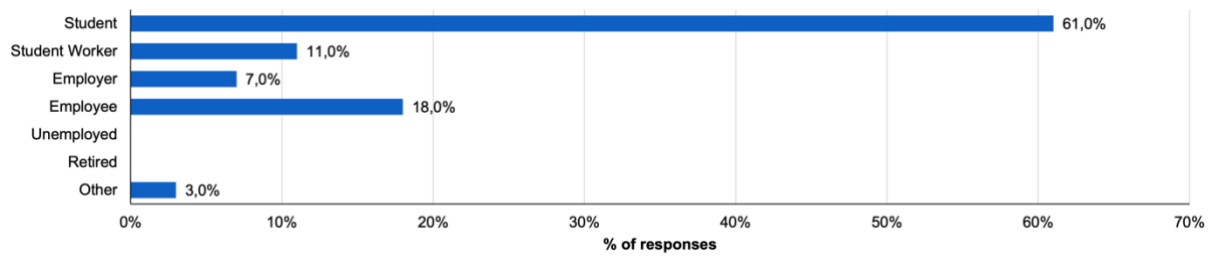


Figure 9 – What is your salary? (retrieved from Conjoint.ly)

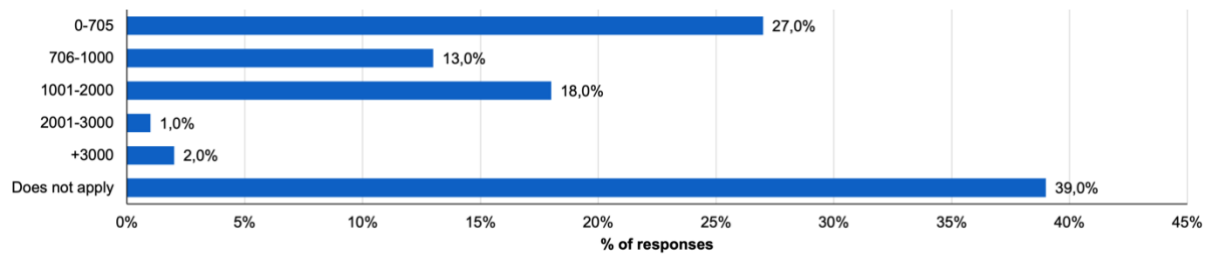


Figure 10 – Relative preference for levels (retrieved from Conjoint.ly)

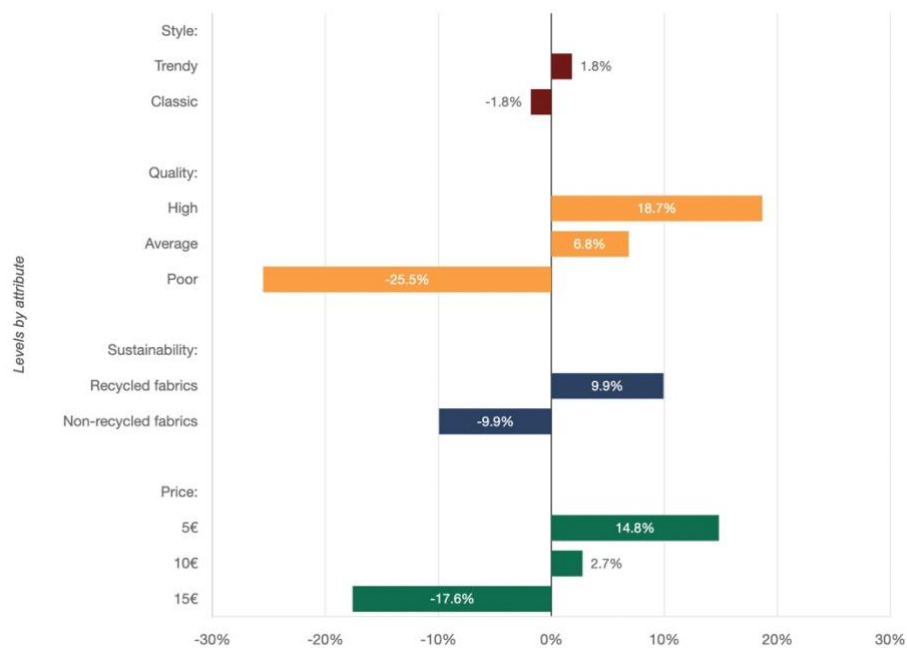


Figure 11 – Marginal willingness to pay relative to baseline (retrieved from Conjoint.ly)

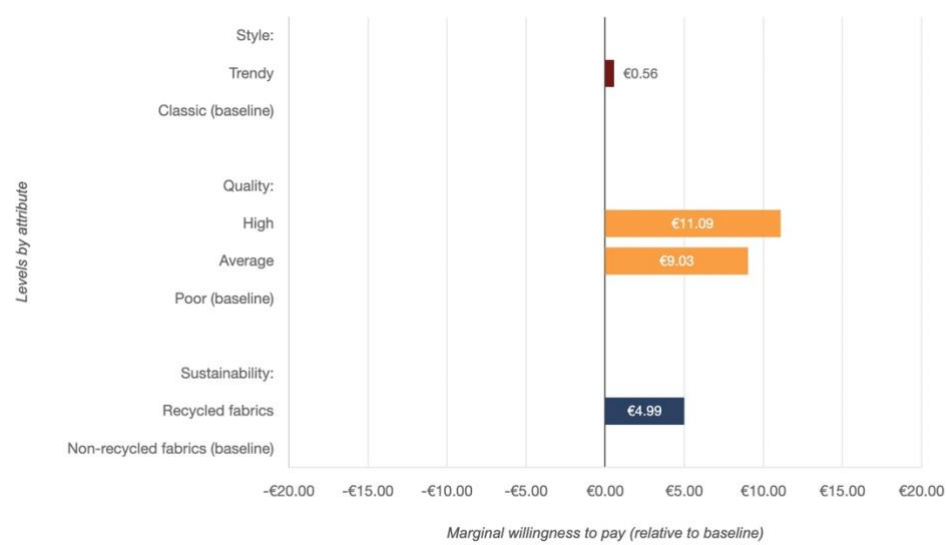


Table 26 - Ranked list of product concepts as preferred by customers (retrieved from Conjoint.ly)

Style	Quality	Sustainability	Price	Value	Rank
Trendy	High	Recycled fabrics	5 €	51,6	1
Classic	High	Recycled fabrics	5 €	47,5	2
Trendy	Average	Recycled fabrics	5 €	38,1	3
Trendy	High	Recycled fabrics	10 €	37,8	4
Classic	Average	Recycled fabrics	5 €	34,0	5
Classic	High	Recycled fabrics	10 €	33,7	6
Trendy	High	Non-recycled fabrics	5 €	29,0	7
Classic	High	Non-recycled fabrics	5 €	24,8	8
Trendy	Average	Recycled fabrics	10 €	24,3	9
Classic	Average	Recycled fabrics	10 €	20,2	10
Trendy	Average	Non-recycled fabrics	5 €	15,5	11
Trendy	High	Non-recycled fabrics	10 €	15,2	12
Trendy	High	Recycled fabrics	15 €	14,6	13
Classic	Average	Non-recycled fabrics	5 €	11,3	14
Classic	High	Non-recycled fabrics	10 €	11,0	15
Classic	High	Recycled fabrics	15 €	10,5	16
Trendy	Average	Non-recycled fabrics	10 €	1,7	17
Trendy	Poor	Recycled fabrics	5 €	1,2	18
Trendy	Average	Recycled fabrics	15 €	1,1	19
Classic	Average	Non-recycled fabrics	10 €	-2,4	20
Classic	Poor	Recycled fabrics	5 €	-2,9	21
Classic	Average	Recycled fabrics	15 €	-3,0	22
Trendy	High	Non-recycled fabrics	15 €	-8,0	23
Classic	High	Non-recycled fabrics	15 €	-12,2	24
Trendy	Poor	Recycled fabrics	10 €	-12,6	25
Classic	Poor	Recycled fabrics	10 €	-16,7	26
Trendy	Poor	Non-recycled fabrics	5 €	-21,4	27
Trendy	Average	Non-recycled fabrics	15 €	-21,5	28
Classic	Poor	Non-recycled fabrics	5 €	-25,6	29
Classic	Average	Non-recycled fabrics	15 €	-25,6	30
Trendy	Poor	Non-recycled fabrics	10 €	-35,2	31
Trendy	Poor	Recycled fabrics	15 €	-35,8	32
Classic	Poor	Non-recycled fabrics	10 €	-39,4	33
Classic	Poor	Recycled fabrics	15 €	-39,9	34
Trendy	Poor	Non-recycled fabrics	15 €	-58,4	35
Classic	Poor	Non-recycled fabrics	15 €	-62,6	36

Figure 12 – Sensitivity to Price and Sustainability (retrieved from Conjoint.ly)

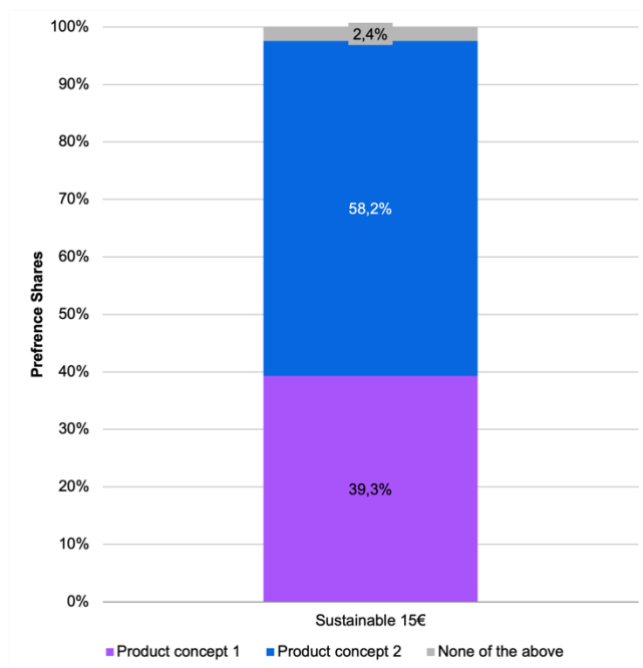
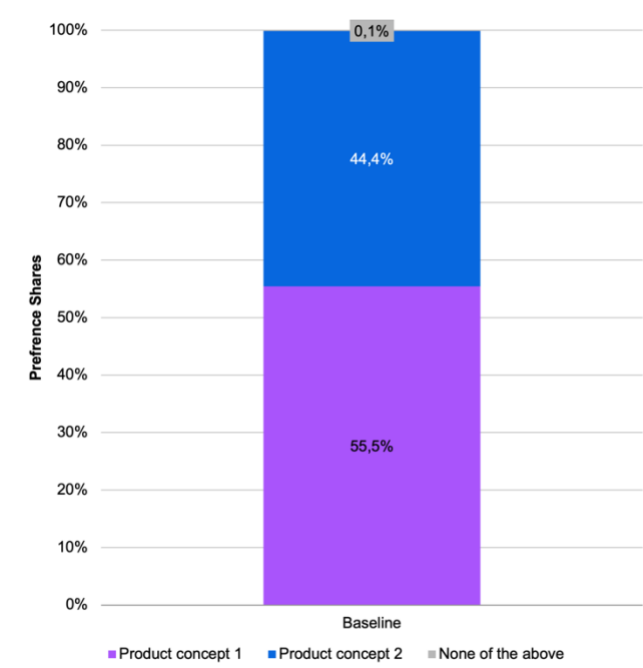


Figure 13 – Sensitivity to style



10.6 Appendix 6 – Cluster Analysis

Table 27 – Numerical scale used to convert variables

Gender	1 - Male 2 - Female
Age	1 - 15-24 2 - 25-34 3 - 35-44 4 - 45-54 5 - 55-64 6 - +65
Highest Level of Schooling	1 - Basic Education 2 - Highschool 3 - Bachelor 4 - Master 5 - Doctorate/PhD 6 - Other
Occupation	1- Student 2- Student Worker 3 - Employee 4 - Employer 5 - Unemployed 6 - Retired 7 - Other
Salary	1 - Does not apply 2 - 0-705€ 3 - 706-1000€ 4 - 1001-200€ 5 - 2001-3000€ 6 - +3000€
How often do you buy fast fashion?	1 - Once a year 2 - Every 2 or 3 months 3 - Once a month 4 - Every two weeks 5 - Once a week 6 - More than once a week
How important is it for you to make your closet more sustainable?	1 – Not important at all 2 3 4 5 – Absolutely essential
How sustainable is your closet?	1 – Not at all 2 3 4 5 – Extremely
I am willing to pay more for sustainable products/brands	1 – Strongly disagree 2 – Disagree

	3 – Neither agree or disagree 4 – Agree 5 – Strongly agree
I prefer green products to conventional ones	1 – Strongly disagree 2 – Disagree 3 – Neither agree or disagree 4 – Agree 5 – Strongly agree
I consider sustainability when shopping	1 – Strongly disagree 2 – Disagree 3 – Neither agree or disagree 4 – Agree 5 – Strongly agree

Table 28 - ANOVA

ANOVA						
	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
How often do you buy from fast fashion brands?	11.090	3	.720	202	15.403	<.001
How sustainable is your closet?	20.858	3	.455	202	45.821	<.001
How important is it for you to make your closet more sustainable?	24.117	3	.701	202	34.409	<.001
I am willing to pay more for sustainable products/brands.	36.232	3	.557	202	65.039	<.001
I prefer green products to conventional ones.	15.476	3	.647	202	23.922	<.001
I consider sustainability when shopping.	33.759	3	.546	202	61.795	<.001
Gender	.002	3	.156	202	.013	.998
Age	5.683	3	.492	202	11.557	<.001
Highest Level of Schooling	1.489	3	.550	202	2.705	.047
Occupation	47.915	3	.448	202	106.913	<.001
Salary	77.328	3	.483	202	160.246	<.001

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Table 29 – Hierarchical Clustering with Average Linkage Method (Agglomeration Schedule)

196	51	60	22.620	0	0	199
197	1	4	26.344	195	191	200
198	61	96	27.535	192	0	200
199	51	134	30.132	196	185	203
200	1	61	30.482	197	198	202
201	20	175	30.720	0	186	204
202	1	55	36.186	200	0	203
203	1	51	39.589	202	199	204
204	1	20	41.795	203	201	205
205	1	17	48.572	204	174	0

Table 30 – Number of Cases in each Cluster

Number of Cases in each Cluster		
Cluster	1	66.000
	2	48.000
	3	27.000
	4	65.000
Valid		206.000
Missing		.000

Table 31 – Descriptive Statistics of each Cluster

		Descriptive Statistics										
		How often do you buy from fast fashion brands?	How sustainable is your closet?	How important is it for you to make your closet more sustainable?	I am willing to pay more for sustainable products/brands.	I prefer green products to conventional ones.	I consider sustainability when shopping.	Gender	Age	Highest Level of Schooling	Occupation	Salary
1	Mean	2.70	2.15	3.05	2.73	3.15	2.52	1.80	1.02	2.94	1.14	1.35
	N	66	66	66	66	66	66	66	66	66	66	66
	Std. Deviation	.877	.662	.902	.735	.769	.728	.401	.123	.653	.388	.511
	Minimum	1	1	1	1	2	1	1	1	2	1	1
	Maximum	5	3	5	4	5	4	2	2	4	3	3
2	Mean	2.21	3.00	3.83	3.98	3.83	3.77	1.81	1.60	3.27	3.00	3.52
	N	48	48	48	48	48	48	48	48	48	48	48
	Std. Deviation	.922	.715	.808	.758	.834	.751	.394	1.067	.765	1.072	.899
	Minimum	1	2	2	2	1	2	1	1	1	2	1
	Maximum	4	4	5	5	5	5	2	4	5	7	5
3	Mean	3.04	1.85	2.26	2.00	2.78	2.07	1.81	1.67	2.96	2.63	3.56
	N	27	27	27	27	27	27	27	27	27	27	27
	Std. Deviation	.854	.718	.903	.620	.934	.829	.396	1.271	.808	.839	1.050
	Minimum	1	1	1	1	1	1	1	1	1	1	1
	Maximum	4	3	4	3	5	4	2	5	4	5	6
4	Mean	1.92	3.25	3.95	3.85	4.05	3.77	1.82	1.05	3.22	1.15	1.31
	N	65	65	65	65	65	65	65	65	65	65	65
	Std. Deviation	.756	.638	.759	.795	.759	.702	.391	.211	.780	.364	.465
	Minimum	1	2	2	2	2	2	1	1	2	1	1
	Maximum	5	5	5	5	5	5	2	2	6	2	2
Total	Mean	2.38	2.66	3.41	3.28	3.54	3.15	1.81	1.25	3.11	1.77	2.13
	N	206	206	206	206	206	206	206	206	206	206	206
	Std. Deviation	.934	.868	1.022	1.039	.929	1.016	.393	.753	.751	1.069	1.268
	Minimum	1	1	1	1	1	1	1	1	1	1	1
	Maximum	5	5	5	5	5	5	2	5	6	7	6

10.7 Appendix 7 – Further Research

Survey Structure

It is simply a fact that portuguese consumers buy fast fashion. Even with sustainability concerns, they have their reasons for buying fast fashion. However, it was proven that sustainability is still important for them (and for the planet, of course). Let's help fast fashion brands understand what they can do better!

Please answer the following survey with transparency. It will take you no more than 2 minutes to answer! Please know there are no wrong answers and that your results are anonymous and will not be shared. It is for academic purposes only.

Notice that every time the word "sustainability" appears, it refers specifically to "environmental sustainability".

Thank you very much for your time!

Section 1

Requirements to Proceed

1. Are you Portuguese?

- a. Yes
- b. No

2. Do you buy products at fast fashion brands?

- a. Yes
- b. No

Section 2

Sustainability Efforts' Awareness

3. How aware are you of these brands' sustainability efforts?

Not at all Aware	Slightly Aware	Somewhat Aware	Moderately Aware	Extremely Aware
---------------------	-------------------	-------------------	---------------------	--------------------

Inditex Group
H&M
Primark
Shein
Mango

Section 3

Sustainability Efforts' Valuation

4. What sustainability efforts do you value the most (from fashion brands)?

- a. Using Natural Materials on Clothing (Banana Fibre, Hemp, etc.)

- b. Using Recyclable Materials on Clothing
- c. Having Second Hand Initiatives (to reuse and recycle)
- d. Using Sustainable packaging (for online orders)
- e. Using Sustainable Vehicles for deliveries
- f. Investing in innovation to reduce the waste and pollution in production process
- g. Other (please specify after)

5. If you answered "other", please specify.

Section 4

Willingness To Pay and Other Considerations

6. Are you willing to pay more for the t-shirt on the right (sustainable) than from the t-shirt on the left (not sustainable), considering both are sold by the same fast fashion brand?

- a. Yes
- b. No

7. When answering the previous question did "greenwashing" come to your mind?
("Greenwashing" = behaviour or activities that make people believe that a company is doing more to protect the environment than it really is)

- a. Yes
- b. No

Section 5

Socio-demographics

8. What is your gender?

- a. Male
- b. Female
- c. Other

9. What is your age?

- a. 15-24
- b. 25-34
- c. 35-44
- d. 45-54
- e. 55-64
- f. +65

10. Where do you live?

- a. Lisbon Area
- b. Great Porto
- c. Great Lisbon
- d. North Littoral
- e. Centre Littoral
- f. South Littoral

- g. North Interior
- h. South
- i. Islands

11. What is your highest level of education?

- a. Basic Education
- b. Highschool
- c. Bachelor
- d. Master
- e. Doctorate/PhD
- f. Other

12. What is your occupation?

- a. Student
- b. Student Worker
- c. Employer
- d. Employee
- e. Unemployed
- f. Retired
- g. Other

13. What is your salary?

- a. 0-705€
- b. 706-1000€
- c. 1001-2000€
- d. 2001-3000€
- e. +3000€
- f. Does not apply

Table 32 – Statistics regarding the gender of respondents

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	96	76.8	76.8	76.8
	Male	28	22.4	22.4	99.2
	Other	1	.8	.8	100.0
	Total	125	100.0	100.0	

Table 33 – Statistics regarding the Age of respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	+65	1	.8	.8	.8
	15–24	95	76.0	76.0	76.8
	25–34	15	12.0	12.0	88.8
	35–44	2	1.6	1.6	90.4
	45–54	6	4.8	4.8	95.2
	55–64	6	4.8	4.8	100.0
	Total	125	100.0	100.0	

Table 34 – Statistics regarding the Place of Living of respondents

Place of Living					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Centre Littoral	12	9.6	9.6	9.6
	Great Lisbon	14	11.2	11.2	20.8
	Great Porto	8	6.4	6.4	27.2
	Lisbon Area	89	71.2	71.2	98.4
	North Littoral	1	.8	.8	99.2
	South Littoral	1	.8	.8	100.0
	Total	125	100.0	100.0	

Table 35 – Statistics regarding the Highest Level of Schooling of respondents

Highest level of schooling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	55	44.0	44.0	44.0
	Basic Education	3	2.4	2.4	46.4
	Highschool	21	16.8	16.8	63.2
	Master	46	36.8	36.8	100.0
	Total	125	100.0	100.0	

Table 36 – Statistics regarding the Occupation of respondents

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	29	23.2	23.2	23.2
	Employer	7	5.6	5.6	28.8
	Retired	1	.8	.8	29.6
	Student	69	55.2	55.2	84.8
	Student Worker	16	12.8	12.8	97.6
	Unemployed	3	2.4	2.4	100.0
	Total	125	100.0	100.0	

Table 37– Statistics regarding the Salary of respondents

Salary					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	+ 3000	5	4.0	4.0	4.0
	0–705	25	20.0	20.0	24.0
	1001–2000	26	20.8	20.8	44.8
	2001–3000	6	4.8	4.8	49.6
	706–1000	12	9.6	9.6	59.2
	Does not apply	51	40.8	40.8	100.0
	Total	125	100.0	100.0	

Figure 14 – What sustainability efforts do you value the most (from fashion bands)?

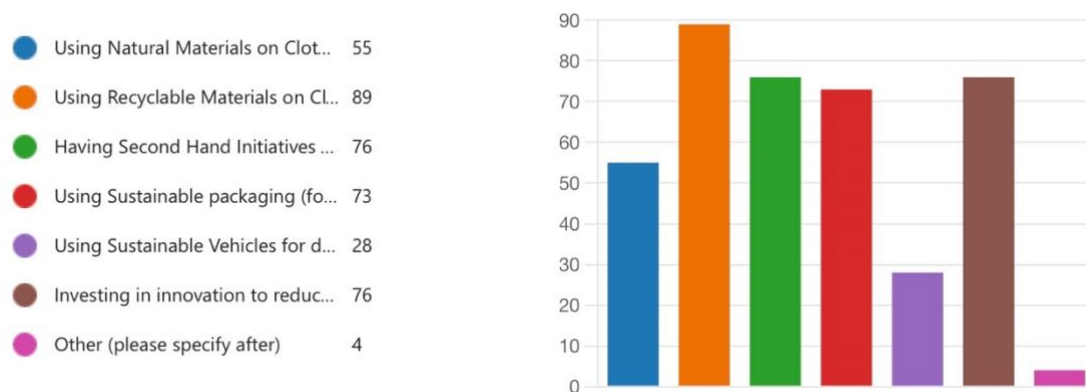


Table 38– Willingness to pay more for a sustainable t-shirt sold by a fast fashion brand

Are you willing to pay more for the t-shirt on the right (sustainable) than for the t-shirt on the left (not sustainable), considering both are sold by the same fast fashion brand?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	50	40.0	40.0	40.0
	Yes	75	60.0	60.0	100.0
	Total	125	100.0	100.0	

Table 39– Association of fast fashion brands with greenwashing

When answering the previous question did "greenwashing" come to your mind?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	47	37.6	37.6	37.6
	Yes	78	62.4	62.4	100.0
	Total	125	100.0	100.0	