Sustainable Fashion Communication in Retail
The role of ecolabels in sustainable fashion consumption

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Dedication

To Mariana of the past,

who didn't think it was possible.

To Mariana of the future,

who will do even greater things.

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Resumo

A presente dissertação centra-se em procurar soluções baseadas na comunicação para aumentar o consumo de moda sustentável, particularmente através do uso de rótulos de sustentabilidade (*ecolabels*), dado que estes são uma das poucas ferramentas que se encontram disponíveis atualmente para informar o consumidor relativamente à sustentabilidade de uma peça de roupa em lojas físicas. Na procura por tais soluções, foi realizada uma investigação de métodos mistos, conduzida em duas fases. A fase exploratória contou com a realização de quatro entrevistas a profissionais das áreas da moda e da sustentabilidade, seguida de um *focus group* com consumidores. A fase confirmatória permitiu reunir dados de um grupo mais alargado de consumidores, através de um questionário *online*, no qual foram utilizadas comparações de etiquetas de roupa para perceber, de forma indireta, a eficácia de variadas estratégias de comunicação de sustentabilidade.

De forma geral, os resultados mostraram um grande potencial para a utilização de *ecolabels* enquanto ferramentas de comunicação de sustentabilidade. No entanto, estes apenas possibilitavam um aumento no consumo de moda sustentável aquando da presença de certas características, como a certificação por entidades independentes e a utilização de sistemas visuais para transmitir informação aos consumidores, como um modelo similar ao sistema de certificação de eficiência energética criado pela União Europeia e utilizado em eletrodomésticos. É igualmente essencial continuar a apostar na educação dos consumidores para assuntos relacionados com a sustentabilidade.

Palavras-chave

Moda sustentável;comunicação de sustentabilidade;retalho físico;rótulos de sustentabilidade;consumo sustentável

Abstract

This dissertation focuses on seeking communication-based solutions for increasing sustainable fashion consumption, particularly using ecolabels since there are few tools currently available for communicating sustainability in brick-and-mortar stores. To find those solutions, the author followed a mixed methods research based on two stages. The exploratory stage was divided into four interviews with fashion and sustainability experts, followed by a focus group with consumers. The confirmatory stage gathered a larger number of consumer data through a survey performed online, employing clothing label comparisons to understand the efficacy of distinct ecolabeling strategies indirectly.

Overall, the results showed tremendous potential for using ecolabels as sustainability communication tools. Nonetheless, these labels only facilitated an increase in sustainable fashion consumption when presented with certain characteristics, namely being certified by an independent third-party and using visual systems, such as the ones similar to the systems applied in the energy efficiency certification created by the European Union for household goods, to inform consumers. Lastly, the investigation found that it is crucial to continue betting on consumer education regarding sustainability.

Keywords

Sustainable fashion; sustainability communication;brick-and-mortar retail;ecolabels;sustainable consumption

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Acronym List

AMA	American Marketing Agency
BCI	Better Cotton Initiative
CFC	Chlorofluorocarbon
CSR	Corporate Social Responsibility
EU	European Union
EDP	Environmental Product Declaration
FSC	Forest Stewardship Council
GOTS	Global Organic Textile Standard
H&M	Hennes & Mauritz
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
PEF	Product Environmental Footprint
QR Code	Quick Response Code
RFID	Radio Frequency Identification
SAC	Sustainable Apparel Coalition
SDGs	Sustainable Development Goals
s-LCA	Social Life Cycle Assessment
TBL	Triple Bottom Line
UN	United Nations
WCED	World Commission on Environment and Development

Introduction

Context and research question

From climate change to gender inequalities, nowadays it is difficult to deny how important it is for businesses to adopt a more sustainable perspective on their development. Mainly in the fashion industry, several social and environmental problems have been proved to result from specific business models, such as fast fashion (Brewer, 2019), which choose to put profit over people and the planet (Claudio, 2007). Society is currently aware not only of these issues but also of companies' responsibility in creating them (Bajtelsmit, Bloodhart, Diddi, McShane & Yan, 2019). Therefore, it was expected for businesses to be one of the first players in the fashion industry to take positive steps toward achieving a more sustainable sector. And that has been happening for the last few years. The offer for sustainable fashion has tremendously increased (Fletcher, 2008) and it is today bigger than it has ever been. Nonetheless, consumption has not been keeping up with this growth. Brands are finally presenting sustainable alternatives to fast fashion, but consumers' purchasing habits have remained practically unchanged (Andrews, Cronin, Gleim & Smith, 2013), with sustainable fashion consumption being significantly lower compared to the offers available in the current market. This phenomenon, known as the attitude-behavior gap, has already been demonstrated in the literature (see, for example, Beard, 2008; D'Souza, 2015; Freise, Will & Strähle, 2015), together with its underlying motives. From ecological skepticism connected with greenwashing (Freise, Will & Strähle, 2015) to seeing little self-benefit in sustainability (d'Astous & Legendre, 2009), or considering monetary issues, like price (Lin & Park, 2020), several reasons can explain this divergence; however, literature has yet to find viable solutions to counteract its consequences.

Whilst reading about the attitude-behavior gap in the fashion industry, it was obvious how all the mentioned issues were connected to the same general problem: consumers lack information on sustainable fashion (McNeill & Moore, 2015) or, when that information is provided to them, they lack the tools to understand it (Lindersson, 2017). That is mainly because most of the information that reaches consumers regarding sustainable fashion is provided by brands, usually through marketing techniques. By being the first to present sustainable options, they were also the first to communicate them. However, communicating through marketing has some disadvantages (Langguth & Schnee, 2018), mainly the fact that its main goal is not to inform consumers properly, but to trigger an action that will lead to buying a certain product. For that reason, brand communication is often not the most reliable one (Lindersson, 2017), and there have been some cases to demonstrate it, now commonly known as greenwashing techniques (Lyon & Montgomery, 2013). With this issue in mind, it was clear that the only way to provide trusted information to consumers would be through an independent authority able to certify what brands were communicating to their customers (Curran, 2001).

One of the tools that have mostly been used in the fashion industry is ecolabeling (Ferrari, Iraldo, Testa & Vaccari, 2013), a type of certification that can be provided by a third party, which confirms

the veracity of what brands say about their products. Ecolabels are mainly helpful in brick-and-mortar retail (Chang, 2011), where information is often lacking (McShane, Noseworthy & Pancer, 2015), and consumers have nothing but a clothing label to understand how sustainable a garment is. Since society, in general, lacks the skills to properly interpret the information provided by clothing labels (Bajtelsmit et al., 2019), these certifications are helpful for guiding the consumers' purchasing decisions, because specialized entities interpret the information for them and translate it into more accessible and easily understood information (Ferrari et al., 2013).

Even though ecolabeling appears to work as a solution for undermining the effects of the attitude-behavior gap, there is still small evidence in the literature demonstrating its full potential. For that reason, the present work will look to cover that gap, following the research question: Can ecolabels help increase sustainable consumption in brick-and-mortar fashion stores?

Goals

This dissertation presents itself as a part of a vast movement in literature that has been studying more sustainable alternatives compared to the current performance of the fashion industry (see, for example, Fletcher, 2008; Black, 2012; De Castro, 2021). Despite focusing on a small part of an issue as extensive as sustainability, its main purpose is to become a helpful contribution towards the goal of creating a more responsible, conscious, and ethical fashion industry – a goal which must be achieved not only within academia, but also with the participation of governments, businesses, and the general society. That is why the author would like for this dissertation to be considered not only a piece of academic work but also a citizen's contribution toward building a better tomorrow. However, due to the wide range of topics within the issue, this research will focus on demonstrating the potential of ecolabeling as a tool to positively influence sustainable fashion consumption. This can be regarded as the main purpose of this dissertation and its greatest contribution to improving the fashion sector.

Other more specific goals of this dissertation relate to showing how ecolabeling can also serve as a tool to better inform and educate consumers on sustainable fashion matters. Also, it aims to contribute to creating an ecolabeling system that can be widely used across brick-and-mortar stores in Europe, that will guide both the consumers' purchasing decisions and the brands' willingness to create more sustainable fashion products. For that reason, this research could be integrated into the current investigation conducted in the European Union regarding the creation of a European fashion certification to increase the rate of sustainable consumption within the EU.

Methodology

This dissertation follows a mixed methods research design, where both quantitative and qualitative data were collected and analyzed for the purposes of this study. On the one hand, the qualitative methods consist of a descriptive literature review, four semi-structured exploratory

interviews, and a focus group. On the other hand, the quantitative approach is based on a pre-tested survey with 134 participants.

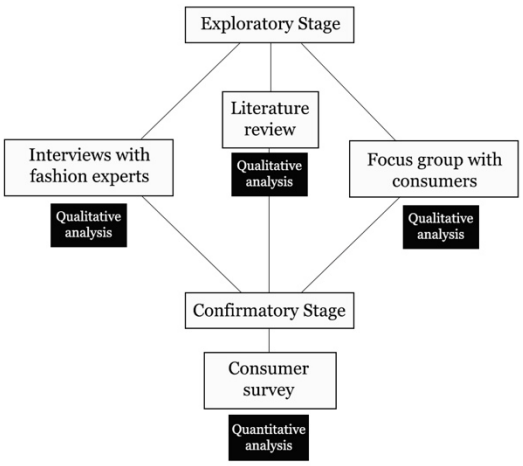

Figure 1. Visual representation of the investigation framework, from: Author.

Firstly, a descriptive literature review compiles the most relevant information that has been published about the subject in the past years. It is composed of six chapters: the first one focuses on the concept of sustainable fashion, from its origin to its current state; after that, the second chapter breaks down the attitude-behavior gap and its main explanations; the third chapter introduces the relation between communication and sustainability, followed by the fourth chapter which applies that relate to the context of brick-and-mortar retail; the introduction of ecolabels as a communication tool happens on the fifth chapter, and the theoretical framework finishes with a chapter on the current developments that have been made in evaluating and classifying sustainability, especially in the fashion sector, with a highlight on the work that the European Union has developed.

After that, the author conducts four exploratory semi-structured interviews with sustainability and fashion professionals to understand the current developments of ecolabeling in the industry and the advantages and disadvantages that experts usually relate to this communication tool. The exploratory stage continues with a focus group, where ten participants help to understand the current perceptions of consumers on sustainable fashion and ecolabeling. As well as which information may be lacking in brick-and-mortar fashion stores so customers can feel like they are making the most conscious and responsible choices.

Finally, as the quantitative part of this research, the confirmatory stage consists of a consumer survey to understand how ecolabels can be effectively increase sustainable fashion consumption. Here, the data collection focuses on the types of ecolabels, colors, imagery, visual systems, and

vocabulary that can turn ecolabels into the most effective tools possible, not only for communicating sustainability but mainly for guiding the consumers' purchasing decisions.

Chapter 1: What is truly behind the concept of sustainable fashion?

1.1. The origins of sustainable development

In "Our Common Future: Report of the World Commission on Environment and Development" (1987), the United Nations introduces a definition for the concept of sustainable development that would end up shaping the views on sustainability until today. Commonly known as the "Brundtland Report", it interprets sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 41). Furthermore, the WCED (1987, p. 41) defines development as "a progressive transformation of economy and society", thereby making the sustainability approach applicable to several economic and societal matters. For example, Elkington (1994) translates the sustainable development concept into a business's ability to meet the needs of its stakeholders without compromising the needs of future ones.

However, the question remained on how the United Nations perspective on sustainability could surpass the theoretical field and actually be translated into reality. Therefore, a few years later, the British consultant John Elkington coined the term "Triple Bottom Line" in order to refer to sustainable development as a concept that could be carried out through operating in three main sectors: economy, society, and environment (Elkington, 1994). In reality, Elkington's first studies on the Triple Bottom Line (TBL) framework used the terms profit, people, and planet to refer to the three lines that traced a path to sustainable development. Nonetheless, they were later respectively renamed economic, social, and environmental pillars (Elkington, 1997), though their meanings remained the same.

In the Triple Bottom Line approach, the economic pillar is representative of the impact a business's impact on the general economic system (Elkington, 1997). It defines how a company provides value within its surrounding structure, creating the economic capability to support future generations (Alhaddi, 2015). The social pillar focuses on how a business can benefit its human capital and general society, by applying beneficial labor practices (Elkington, 1997). It can be achieved through community engagement, fair wages, and good working conditions (Goel, 2010). Finally, the third pillar, concerning the environment, highlights a company's role in managing its consumption of natural resources, seeking not to compromise what will be available for future generations (Elkington, 1997; Goel, 2010). It is, as described by Martins (2017), balancing consumption and economic growth while protecting the environment. As we can see through Elkington's work, sustainability is, unlike what is commonly believed, more than just its environmental dimension (Lindersson, 2017). In its early years, the concept was indeed more connected to the preservation of natural resources (Shrivastava & Hart, 1992), but it has grown

to place equal weight on the economy, society, and the environment (Harmon, Bucy, Nickbarg, Rao & Wirtenberg, 2009).

The sustainable development concept is still very much present today, specifically through the 2030 Agenda for Sustainable Development established by the United Nations (UN) as a plan of action "for people, planet and prosperity" (United Nations, 2015, n/p). It is no coincidence that this Agenda highlights similar pillars to the ones identified by Elkington (1997) in his TBL framework: "people" represent the social pillar, while "planet" is a reference to the environment, and, finally, "prosperity" relates to the economy. In the 2030 Agenda, there are 17 Sustainable Development Goals (SDGs) and 169 targets aimed to be achieved by the end of the present decade (United Nations, 2015). However, for that to be possible, governments, businesses, and citizens must work together to tackle today's challenges to build a better future. And among the several industries that can impact the pursuit of the majority of the Sustainable Development Goals, there is fashion, which has an important role to play.

Figure 2. United Nations Sustainable Development Goals for the 2030 Agenda (United Nations, 2015).

1.2. Fashion's relation to sustainability

According to Cosgrave (2000), fashion is a means of self-expression, a type of visual language where clothing, footwear, and accessories reflect a person's identity and the prevalent *zeitgeist*. Even though scholars have commonly neglected it, considering it "trivial" and "irrelevant" (Entwistle, 2015, p. 25), fashion can regularly contribute to the study of social sciences, having been analyzed in the work of relevant sociologists such as Thorstein Veblen in "The Theory of the Leisure Class" (1899) and Georg Simmel, in "The Philosophy of Fashion" (1905). But, in recent years, the fashion industry has been mainly referred to in literature due to its connection to sustainability (see, for example, Braungart & McDonough, 2002; Fletcher, 2008; Black, 2012; De Castro, 2021).

As a matter of fact, the democratization of fashion, introduced at the end of the 20th century by the rise of the fast fashion business model – characterized by its low prices and massive production (Johannsdottir & Thorisdottir, 2019) – contributed to a culture of permanent consumerism and consequent disposal (Brewer, 2019). Most fashion retailers relied and still rely today on a linear business model, also known as "take-make-waste", a concept developed by the Ellen MacArthur Foundation (n/d, n/p), which has been a colossal part of several environmental problems such as climate change and the overconsumption of natural resources (Claudio, 2007). For instance, the United Nations Alliance for Sustainable Fashion (n/d, n/p) estimates that the fashion industry is responsible for "2-8% of the world's greenhouse emissions", having produced, in 2015, around 1.2 billion tons of greenhouse gases, which surpasses the combined emissions of international flights and maritime shipping (Ellen MacArthur Foundation, 2017).

More than simply looking through an ecological lens, fashion also impacts society and the economy. Even though it was one of its worst economic performances due to the impact of the COVID-19 pandemic, the apparel sector was still worth 448 billion dollars in 2020 (World Trade Organization, 2021). With over 300 million people worldwide working in the apparel sector (United Nations Alliance for Sustainability, n/d), fashion has a tremendous impact on the socio-economic landscape of the countries where this industry is most prominent, such as Bangladesh, where up to 80% of garment workers are women (World Trade Organization, 2020). Nowadays, fashion's supply chain relies heavily on low cost-labor, located in countries where labor regulations, and even environmental restrictions, tend to be weak or non-existent (Johannsdottir & Thorisdottir, 2019). But enterprises are now being held accountable for the social, economic, and environmental issues that arise within their complex structure (Koplin, 2005), thereby improving their role in achieving a more sustainable industry.

With this in mind, it is difficult to detach fashion pursuing the United Nations Sustainable Development Goals. For instance, using fewer dyes in the production of textiles would contribute to goals such as "6 Clean Water and Sanitation", "13 Climate Action" and "14 Life Below Water" (Cai & Choi, 2020). Also, disclosing Corporate Social Responsibility (CSR) reports would have an impact on "3 Good Health and Well-being", "4 Quality Education" and "5 Gender Equality" (Cai & Choi, 2020). And fashion has an undeniable role to play in the goal "12 Responsible Consumption and Production" (United Nations Economic Commission for Europe, 2018). But these are just simple examples of how fashion can be a part of sustainable development, leading to the main concept that connects these two terms: sustainable fashion.

Firstly used by the United Nations in a Department of Public Information and Non-Governmental Organizations conference (Wang & Zhao, 2021), the sustainable fashion concept was disseminated in the 1960s, when consumers started to become more aware of how the apparel industry was impacting the environment (Jin & Jung, 2014). Even though in the following decades, sustainable fashion started to be associated with the anti-fur movement (Alevizou, Henninger & Oates, 2016), its meaning kept expanding to include other concepts such as eco-

fashion, green fashion, or even ethical fashion (Carey & Cervellon, 2014). Today, sustainability in fashion is considered a part of the slow fashion movement (Alevizou, Henninger & Oates, 2016), mainly as an opposite to fast fashion business models that seem now ubiquitous in our society.

1.3. The current battle between fast fashion and slow fashion

According to Fletcher (2008), fast fashion can be described as a fast-response system that encourages excessive consumerism. This business model is mainly driven by fashion trends (Tokatli, 2007), delivering new collections to consumers almost every week (Johannsdottir & Thorisdottir, 2019) through a rapid cycle of production at minimum financial cost (Brewer, 2019). Fast fashion saw its beginning in the 1960s, with companies like Inditex leading the way for a radical change in the apparel industry (Crofton & Dopico, 2007). The Spanish enterprise created by Amancio Ortega went from making, in its early years, around 30 million dollars annually (Crofton & Dopico, 2007), to, as of July 2020, having over 21 billion dollars in sales and being amongst the most important companies worldwide (Forbes, 2020). And Inditex was just the beginning. Nowadays, we can find other fashion players following the same business model, serving as an example the cases of H&M, Gap, Mango, and Topshop (Mehrjoo & Pasek, 2014; Lenk & Rotkirch, 2021).

It goes without saying that fast fashion has shaped the garment industry. Through simple designs, cheap materials, and mass production (Fletcher, 2010), consumers prioritize brands that could offer both affordable and trendy items, alongside a wide range of selections (Abreu & Buzzo, 2019). Consequently, this business model ended up having a tremendous impact on purchasing habits (Byun & Sternquist, 2008), with consumption becoming not only more recurrent but also more impulsive, creating a sense of urgency in the consumer (Anguelov, 2015). To reply to popular demand, fashion retailers had no choice but to increase their competitiveness (Barnes & Lea-Greenwood, 2006), entering a wheel of constantly looking for a quicker supply chain that could additionally provide garments at a lower cost (Beebe, 2010). Nowadays, however, literature can offer several pieces of evidence concerning how the growth of the fast fashion model has negatively affected our past, our present, and most likely our future too.

One of fast fashion's most visible consequences can be seen in the environment. According to the Ellen MacArthur Foundation (2017), clothing production has almost doubled since the early days of fast fashion brands. There is no denying that garment manufacturing and, accordingly, garment consumption have contributed to the rise of ecological degradation (Dahlbo, Gwilt, Niinimäki, Rissanen, Perry & Peters, 2020).

For example, the European Parliament Research Service (2020) disclosed that, in 2015, the textile and clothing manufacturing business consumed around 79 billion cubic meters of water, considering that, for the production of a simple cotton t-shirt, the industry spends a similar amount of water to a person's drinking needs for two and a half years. But fast fashion is also

responsible for water pollution, since washing synthetic fabrics, for instance, can release up to 0.5 million tons of microfibers every single year (European Environment Agency, 2019). And even at the end of a garment's life cycle, fashion remains an environmental hazard. As reported by the European Parliament (2020), around 11 kilos of clothing are discarded by Europeans each year, with the big majority ending up incinerated or in landfills, without little chance of ever being recycled. Nonetheless, our environment is not the only thing that the fast fashion model can impair.

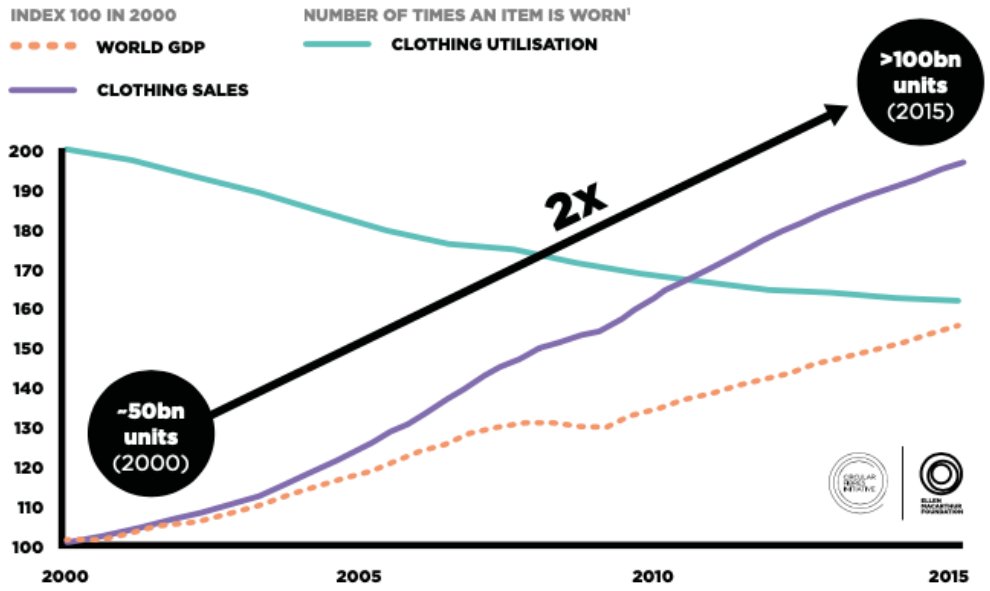

Figure 3. Evolution of clothing sales and utilization 2000-2015 (Ellen MacArthur Foundation, 2017).

Fast fashion's supply chain is very complex. Mainly in the pursuit of economic benefits, the end of the 20th century saw garment production shift from being located in developed nations (Dahlbo et al., 2020) to countries where labor and manufacturing costs were significantly lower (Fernie, Perry & Wood, 2015). As fast fashion brands grew their production, China became the center for garment manufacturing (Lu, 2018). Countries like Bangladesh, Cambodia, Vietnam, Pakistan, and Indonesia also saw considerable growth in their demand for production (Textile Exchange, 2018). It is also not unusual for a brand choosing to place each stage of its supply chain in different countries (Anguelov, 2015). The reason is often rooted in holding a competitive advantage related to costs (Fernie, Perry & Wood, 2015); however, such complexity also decreases transparency in the supply chain (Dahlbo et al., 2020), making it difficult even for the brand to have information on what happens under its command.

Several social and economic problems have already been disclosed in some of these cases. With brands seeking to minimize production costs regardless of the consequences, garment workers tend to be paid low wages and work under poor conditions (Mukherjee, 2015). Even exploitation is not uncommon. Working long hours, without legal contracts to safeguard them, in factories

that are both unsafe and unhealthy, and sometimes even experiencing physical abuses, like sexual harassment, are only examples of what has been reported to happen to garment workers inside the supply chain of some fast fashion brands (Mukherjee, 2015). One incident in particular that has received tremendous media coverage is the collapse of the Rana Plaza building, in Dhaka. Located in the heart of Bangladesh, this building was the home to several garment factories for fast fashion brands, until, in April of 2013, its structure caved in and caused the death of more than a thousand garment workers (Hobson, 2013). The Rana Plaza disaster put in perspective the role of fashion brands and their responsibility regarding labor practices (Auke & Simaens, 2019). Nonetheless, more than representing an opportunity for fast fashion brands to change their behavior, it created the possibility for other business models to grow within the industry.

Figure 4. Collapse of the Rana Plaza building in 2013, in Dhaka, Bangladesh (Yardley, 2013).

As an opposite to the fast fashion model, Fletcher (2008) coined the term slow fashion to define a system that encourages responsibility in both production and consumption. The name is inspired by the "slow food" movement, whose ideas were also translated into the fashion supply chain (Brewer, 2019), such as the appreciation for artisanal production, the preservation of ecosystems, and also "awareness, responsibility, and information" (Fletcher, 2010, p. 261).

Slow fashion promotes sustainability in all three sectors mentioned in the Triple Bottom Line framework: environment, economy, and society. For example, it prioritizes eco-friendly materials in the production process that consume fewer resources than their conventional counterparts (Brewer, 2019), like organic or recycled fibers. It also focuses on durability, prioritizing quality over quantity, and opting for timeless designs (Fletcher, 2010; Jin & Jung, 2016). And it also is an ethical business model, where garment workers are paid fairly and presented with decent labor

conditions (Mukherjee, 2015). Even so, these advantages do not seem to be enough to engage consumers in more sustainable purchasing habits. Because, even though our society is nowadays more aware of these social and economic issues, this awareness tends not to be translated into the general population's actions.

Chapter 2: The consumer's gap between intentions and actions

2.1. Defining the attitude-behavior gap

The negative impacts of the fast fashion industry on our environment and society are becoming increasingly more visible, enabling a feeling of rising awareness among consumers (Bajtelsmit et al., 2019). Because of that, consumption intentions nowadays are based not only on price and quality but also on other society-centered values (Langguth & Schnee, 2018), like sustainability. Generally speaking, consumers appear to be caring more about the effects of their purchasing habits (Lin & Park, 2020). Therefore, the more engaged people became with environmental and ethical issues, the more green consumption should increase (D'Souza, Taghian & Lamb, 2006). At least, that is what was expected from fashion brands, such as Nike, H&M, Levi's, and many others, which have integrated sustainable fashion products into their collections in order to convey a more responsible and conscious brand image (Fletcher, 2008). Nonetheless, while increasing awareness allows for a growing number of sustainable products to be available for consumers, these rarely appear to leave the stores' shelves (Andrews, Cronin, Gleim & Smith, 2013). In reality, what society says is important nowadays, especially in matters of ethical and sustainable consumption, diverges from what is actually practiced (d'Astous & Legendre, 2009), which means that consumer intentions do not always translate into their actual behavior (Lin & Park, 2020).

It has been demonstrated in the literature that there is a difference between society's attitudes towards sustainable fashion – since consumers keep advocating for a more ethical and eco-friendly supply chain – and the actual consumption of these types of products (see, for example, Auger, Birtchnell, Devinney, Eckhardt & Timothy, 2006; Andrews et al., 2013; Lin & Park, 2020; Halme & Turunen, 2021). This phenomenon has been referred to as the attitude-behavior gap (Beard, 2008; D'Souza, 2015; Freise, Will & Strähle, 2015), meaning that intentions and values are not always reflected in purchasing decisions (Preuit & Yan, 2016). Some authors state that consumer intentions should not be considered a strong indicator of green behavior (Brand, 2011; Lin & Park, 2020). Even among people with strong ecological beliefs, it is possible to see a separation between what they claim to care about (in this case, the environment) and what they actually take into account when making a purchase decision (Brand, 2011). In reality, other factors usually appear to be playing a bigger role in general consumption habits further from sustainability.

Arora and Jha (2019) consider that the attitude-behavior gap can be rooted in the general expectation that companies should be producing more sustainable products, whereas consumers should not need to pay more for that – not only in monetary terms but as a general sacrifice. Furthermore, according to Bajtelsmit et al. (2019), a significant number of consumers cannot associate their knowledge of sustainability with their own purchasing behaviors. However, despite these being important explanations, they are just the tip of the iceberg. In the next section, we will present the six explanations that have been brought up in literature as underlying motives for the attitude-behavior gap.

2.2. The reasons explaining this behavioral divergence

After acknowledging that there is a difference between what consumers consider to be important and what they are actually purchasing, several authors have been focusing on understanding what triggers the attitude-behavior gap (see, for example, d'Astous & Legendre, 2009; Freise, Strähle & Will, 2015; Bajtelsmit et al., 2019). And even though different studies have led to different conclusions, six reasons appear to be widely accepted: skepticism, economic motives, lacking self-benefit, lacking a feeling of guilt, lacking knowledge, and one particular justification that is mostly associated with fashion, perceiving eco-design as unaesthetic.

As a growing number of fashion brands began labeling their products as sustainable, green, and ethical, consumers also became more skeptical of the veracity of such designations and what they truly meant (Bandyopadhyay & Ray, 2020). And this is not a novelty in the industry. In a study carried out by Dagnoli (1991), only about 15 percent of the surveyed consumers classified environmental claims as extremely or very believable. More recently, in the research of Bajtelsmit et. al (2019, p. 205), consumers "expressed that it was difficult to believe brands' claims about ethical practices". But where does this skepticism come from? Generally speaking, some authors have shown that consumers have a hard time believing that a brand's sustainability initiative is solely rooted in eco or social consciousness (Beard, 2008; Langguth & Schnee, 2018). Another specific phenomenon that influences consumer credibility: greenwashing (Freise, Strähle & Will, 2015). Greenwashing occurs when a company adopts a misleading action to create the perception that a specific product, collection, or the brand's entire policies, are more sustainable, green, or ethical than they truly are (Du, 2015). There are several ways to put into practice a greenwashing strategy, but this is mostly achieved through green marketing (Du, 2015), where imagery and vocabulary are used to convey a more sustainable image. However, the problem is that greenwashing is not visible to consumers (Freise, Strähle & Will, 2015) since they are only able to see a company's claims but not its real actions. That is why this phenomenon creates a greater sense of skepticism: consumers know that greenwashing exists, they just do not know when it is happening (Freise, Strähle & Will, 2015). Therefore, consumer skepticism can be seen as one of the drivers of the attitude-behavior gap. Even if there is a bigger awareness in society towards sustainable fashion, it is difficult to know if the sustainable options put forward by brands are truly based on their eco-values or rather on the desire to profit from concerned consumers.

Another reason that commonly explains the difference between people's sustainable values and their not-so-sustainable behaviors is price. For most consumers, price is one of the most – if not, the most – important factors when considering a purchase (Blaesi, Hyllegard & Ryan, 2012). And since most sustainable products have higher production costs that usually reflects on also having higher prices (Blaesi, Hyllegard & Ryan, 2012). Because of that, some consumers are simply unable to buy sustainable products – that is usually the case for younger consumers, who have been portrayed as a more conscious generation but are still economically incapable of acquiring higher-priced items (Lin & Park, 2020). But other consumers simply do not see a benefit big enough in order to justify the additional costs involved (Auger, Burke, Devinney & Louviere, 2003), as self-benefit seems to have its own role in the development of the attitude-behavior gap.

For Bietz and Reisch (2011, p. 145), "the dominant explanation for the divergence between attitude and behavior is the 'low-cost hypothesis'", which follows the idea that consumers only match their values with their actions "when the perceived costs of such a choice are low". And these costs are not only related to the monetary issues mentioned in the previous paragraph. Consumers have also been struggling with transforming their lifestyle only to comply with social causes (d'Astous & Legendre, 2009). That is because, as society grows to become more and more self-centered, people turn to their own interests rather than to the interests of society (d'Astous & Legendre, 2009). For instance, in some cases, consumption is seen as a way of conveying a feeling of gratification, since buying more clothes can be associated with happiness (Bajtelsmit et al., 2019). Furthermore, purchasing habits are more than just fulfilling needs nowadays. These can be viewed as an activity for when someone is feeling bored, or as a way of achieving aspirations and portraying identities (Roberts, 2014). As sustainability is a more society-centered value, the prioritization of self-benefit can explain the divergence between intentions and behaviors.

Besides prioritizing their own interests, some consumers also doubt how their purchasing habits can influence a problem as big as sustainability (Perry & Chung, 2016; Langguth & Schnee, 2018). As a matter of fact, individual actions appear to have a significantly smaller impact on social and environmental issues than when large corporations and governments intervene (Bietz & Reisch, 2011). Therefore, responsibility is often placed on these types of institutions, taking it away from consumer action, which remains unchanged regardless of what is truly valued.

In a study conducted by Bajtelsmit et al. (2019, p. 206), "participants did not feel knowledgeable about which clothing brands were ethical and which offered eco-friendly/organic products". The lack of consumer education and information has greatly impacted consumers' purchasing decisions, whether this may be related to the sustainable offers nowadays available in the market or to the urgency in consuming more eco-friendly products (Morgan & Birtwistle, 2009; Bourguet & Guillemaud, 2016). For the first part, it is important to state that perceptions still play an important role in defining a sustainable product from a consumer's point of view (Irwin & Naylor, 2009), and these perceptions are mostly provided by marketing techniques rather than actual educational materials. Therefore, a big majority of the information that reaches consumers may

not always be the most reliable one, since it is motivated by other purposes, such as selling a specific product and gaining profit, instead of simply being a means for education (Bajtelsmit et al., 2019). The other reason is that, to be understood, sustainability needs to be analyzed from a long-term perspective, since both the negative consequences of unsustainable consumption and the positive impacts of a conscious lifestyle will only be observed in the distant future (Bourguet & Guillemaud, 2016). So, when consumers are not able to instantly view their role in sustainability, we are only left with educational and informational tools to present to them the importance of following an eco-conscious lifestyle. As an opposite, the lack of information can create a basis for this separation between what is believed and what is translated into real actions.

Even though the principles of the attitude-behavior gap can be applied to several industries, fashion adds another layer to this divergence, because clothing has more than just a utilitarian role (Bajtelsmit et al., 2019). In reality, garments influence how people present themselves, distinguish their personalities from others, and insert themselves into a community (Chan, Joy, Sherry, Venkatesh & Wang, 2012). Sustainable fashion, therefore, cannot simply be portrayed as environmentally friendly, it has to comply with other factors, such as quality and aesthetics. Nonetheless, eco-fashion has gained the reputation of focusing too much on its "eco" side instead of on its "fashion" one (Beard, 2008; Chan et al., 2012; Langguth & Schnee, 2018). Most consumers assume they will dislike sustainable garments because they believe their design will align with recent fashion trends (Cline, 2012) or with their personal tastes (Beard, 2008). For that reason, these stereotypes that have been associated with sustainable fashion can constitute one more reason behind the attitude-behavior gap and, in particular, how this divergence applies to the fashion industry.

Chapter 3: The role of communication in sustainability

The power of communication is often neglected in the research conducted on sustainability (Ziemann, 2011); however, it is impossible to separate these two concepts. For Ziemann (2011, p. 89), "as soon as something has become an issue – and individuals have made a series of specific contributions to that issue – then communication is taking place", which is precisely what happens when it comes to sustainability, "as if it were possible to first discuss sustainability, then plan and implement it, and finally communicate it. The opposite is the case." As an example, nowadays society has shared perceptions of what constitutes an environmental or social problem because these have been previously communicated (Kruse, 2011). Otherwise, people would have different definitions for the same issues, resulting in social consequences regarding how we address them or even how we fight them.

In the case of sustainable fashion, the role of communication can be even increased, because consumers cannot simply see sustainability – they cannot look at an organic cotton t-shirt and immediately identify it as organic, products need to be perceived as sustainable (McNeill & Moore,

2015). That is why sustainable consumption habits will not perform the same in the apparel industry as they usually do regarding food, for example. Consumers show greater concern regarding what they ingest because it will have immediate impacts on their health (Lindersson, 2017); however, that is not the case for the apparel industry, since its consequences, whether they may be on the environment, society, or on the economy, tend not to impact consumers directly and, therefore, have to be communicated to be perceived (McNeill & Moore, 2015). Perceptions can greatly influence today's purchasing habits and they mainly rely on two factors ranging between two agents: information – provided by brands – and education – on the side of consumers.

Firstly, consumers nowadays rely on brands to gather the information they need to perceive a product as sustainable (Phau & Ong, 2007). In a study conducted by D'Souza, Taghian and Lamb (2006, p. 8), a significant majority of the surveyed consumers showed always to read the ecological labels of the purchased products, considering that these represent "an important way of reaching and communicating environmental justifications of products to the consumer". However, the opposite might happen when these same labels are hard to read or feel inaccurate (D'Souza, Taghian & Lamb, 2006). Only through "clear, transparent and easy-in-use communication" (Borboni, 2019, p. 195) can consumers be aware of all the characteristics that define a sustainable fashion product, from how it is created to how it should be disposed of. However, according to Dawkins (2004), most brands do not effectively employ a communication strategy to influence responsible purchasing decisions. And that is because companies are usually incapable of understanding why eco-conscious consumers choose not to buy more environment-friendly products (Langguth & Schnee, 2018) or even have difficulty in targeting consumers on a more personal level, so that people may better perceive the importance of their own role on sustainable consumption (Lindersson, 2017).

Even though good communication strategies can greatly impact purchasing habits, they are not the only thing that brands need to be aware of when conveying sustainable information (Kruse, 2011). Especially in a system where there is little control from legislators (Davis, Mayer & Schoorman, 2007), which is the general case of the green industry, the feeling of trust plays an essential role in how information is perceived by consumers (Ferrari et al., 2013). And if what a brand shows to be does not align with what its products state to represent, then simply communicating sustainable characteristics will not be enough to favorably influence a purchasing decision (Langguth & Schnee, 2018). Consumers need to know that brands are "walking the talk", and that is essential for the success of a sustainable communication strategy.

Secondly, it has been proven that the more knowledgeable consumers are on sustainability, the more likely they are to engage in sustainable fashion consumption (McNeill & Moore, 2015; Lindersson, 2017). That is because with knowledge comes awareness and, consequently, concern; therefore, it is expected that a more positive attitude ends up being adopted towards environmentally friendly options (Freise, Strähle & Will, 2015). Consumer education is definitely

one of the factors that most influence the rise of ethical and responsible consumption in the fashion industry (Chowb, K., Chowb, P., Shena & Zhengb, 2014); nonetheless, there is also evidence in literature portraying how knowledge alone is not sufficient to surpass the attitude-behavior gap (Ferrari et al., 2013). Despite that, there are enough reasons to believe that knowledge and education can serve as important weapons against the lack of ecological behaviors. Because, as was previously mentioned, brands have been working as the main agents for informing consumers about sustainability (Freise, Strähle & Will, 2015). And, in reality, "when consumers evaluate the products, they use competencies that they already have, and connect those to the meanings they perceive in connection to specific product attributes" (Lindersson, 2017, p. 50). So, knowledge does not work solely on increasing sustainable consumption, but also on helping consumers understand the information that reaches them.

Chapter 4: Exploring brick-and-mortar retail and in-store communication

4.1. Physical retail and its means of communication

Retailing can be defined as the system selling both goods and services directly to the consumer (Rousseau, 2020). According to Berman and Evans (2013, p. 33), it is "the last stage in the distribution process" which "(...) includes every sale to the final consumer". There are several ways of conducting this type of business operation; however, we can divide it into two main categories according to the channels used: online retail and physical retail. On the one hand, online retail is a type of distance selling, where there are no established sales points and the main selling channel is the technology and, more particularly, the Internet (Rousseau, 2020). On the other hand, brick-and-mortar retail encompasses all companies that conduct sales through physical facilities, even though they may still use the Internet "for providing information, customer service, and image building" (Berman & Evans, 2013, p. 39). Due to certain characteristics of brick-and-mortar stores that will be specified in the fourth part of the chapter, this dissertation will focus on this specific retail format.

One of the most important facilities of brick-and-mortar retail is flagship stores. These are the retail format that enables consumers to fully experience each brand (Manlow & Nobbs, 2013), as it is a physical facility tailored mainly to communicate with consumers and stakeholders (Mores, 2007; Dannewald, Jahn, Nierobisch & Toporowski, 2017). This can be achieved through the architecture of the store, providing services with added value (Moore, Nobbs & Sheridan, 2012), or other means of communication that do more than simply improve sales: they improve brand reputation (Arrigo, 2017). As a matter of fact, "a retailer needs a superior communications strategy to properly position itself in customers' minds, as well as to nurture their shopping behavior" (Berman & Evans, 2013, p. 487). That is why it is so important to focus on in-store communication, whether in flagship stores or any other physical retail format.

In-store communication is retailers' last chance to persuade consumers to buy a certain product or service (Uniyal, 2011). Studies show that most consumers enter a store without planning their purchases (Berman & Evans, 2013), which is even more noticeable in the case of fashion retail. For this reason, in-store communication plays an important role in attracting consumers to a brand's products or even to a brand's store. From "attractive store layouts" to "in-store displays", every single part of a store is transmitting some kind of information to customers (Berman & Evans, 2013, p. 39). And, to succeed, "a retailer must communicate a distinctive, clear and consistent image" (Berman & Evans, 2013, p. 488).

As previously seen, sustainability is also a matter of communication. Since retailers are the last channel in the process of selling goods and services to consumers, their role has been called into question in raising awareness towards responsible consumption and diffusing more sustainable business practices (Lehner, 2015). According to Burbano and Delmas (2011), companies have been responding to these consumer demands by improving the quality and quantity of information related to sustainability through their communication channels. And despite communication being achieved through several formats, if in-store communication represents one of the last chances for consumers to make their final purchasing decision, then in-store communication is what retailers should bet on to promote more sustainable consumption with consumers. For example, simple things such as signs or the store layout can promote more sustainable purchasing behaviors (Fredriksson & Fuentes, 2016). Nonetheless, one of the things that are crucial in promoting a more sustainable consumption among consumers is the packaging of the products (McShane, Noseworthy & Pancer, 2015).

Packaging is one of the main instruments of in-store communication used to convey "environmental cues" (McShane, Noseworthy & Pancer, 2015, p. 159). These cues have the ability to shape the consumers' perceptions of a certain product (Chang, 2011) and thereby change their future response when it comes to deciding which product will be taken to the check-out counter (McShane, Noseworthy & Pancer, 2015). In some cases, "products display only a single cue (e.g., an ecolabel), and yet in others, multiple cues are used (e.g., an ecolabel and the color green)" (McShane, Noseworthy & Pancer, 2015, p. 160).

There are basically two types of environmental cues defined in Chang's work (2011). Firstly, the ones that focus on consumers and portray a product's attributes as something useful for them; for example, by explaining how a more sustainable product is also a healthier option, thereby highlighting the consumer's benefit (Chang, 2011). Secondly, the types of environmental cues which focus on the brand itself and, more specifically, on how the company manages its supply chain for the product to become more sustainable (Chang, 2011). It is important to mention that there are two subgroups in which we can divide this last type of environmental cue: on the one hand, they can refer to a type of product positioning reliant on a brand's marketing strategy or, on the other, they can be based on independent and third-party certification (Chang, 2011).

Consumers will differently perceive each type of environmental cue; nonetheless, all of them share the same goal of communicating the environmental performance of a brand or a product.

Environmental cues can range from imagery to text, but there are two formats that should be highlighted: ecolabels, which will not be further discussed here since chapter five will solely focus on them; and the color green, a type of environmental cue relying on imagery, which has been one of the most used strategies by brands to convey sustainability perceptions. According to McShane, Noseworthy & Pancer (2015, p. 162), it is hard to separate the terms "green" from "environmentally friendly", because these two concepts "are often used interchangeably". In general, it is possible to say that the color green has even been adopted as a marketing strategy for referring to more eco-conscious products (Labrecque, Milne & Patrick, 2013), mainly because it has been demonstrated that, even when there are no other environmental cues in a product's packaging, green is enough for consumers to perceive a product as more sustainable, especially when comparing with other products not carrying the same color (McShane, Noseworthy & Pancer, 2015). In the fashion industry, this can be verified, for instance, in H&M's Conscious Collection, where all clothing tags have been painted in green color so as to give consumers a more sustainable feeling.

Figure 5. H&M's Conscious Collection clothing labels (H&M, n/d).

Nonetheless, it is possible to say that consumers evaluate their potential purchases in several ways – more than just through these environmental cues –to make a final decision. Lindersson (2017) has shown that at least six factors are considered by consumers when judging a fashion product (without following a particular order): design and aesthetic, fabric and composition, fit, function, quality, and, lastly, price. As a consequence, all of these factors are also considered by brands when building a sustainable marketing strategy, which is currently referred to as green marketing.

4.2. The case of green marketing

Green marketing encompasses all strategies applied by companies to promote a product or service as eco-friendly and, in general, more sustainable than its conventional counterparts (Cherian & Jacobs, 2012). Even though there is no specific definition for this concept, Polonsky (1994) describes it as a type of marketing aimed at satisfying the needs of consumers for products with low environmental impact. Peattie and Charter (2013) include in their definition an economic component, by defining green marketing as a management process that helps promote sustainable products in a more profitable way.

The concept of green marketing was created by the American Marketing Agency (AMA) around 1975, as a way to define the type of marketing that was mostly associated with advertising the ecological benefits of both goods and services (Kanonuhwa & Chimucheka, 2014). It is possible to see ecological marketing strategies being used from the beginning of the 1970s (Peattie & Crane, 2005), at the same time as the emergence of movements supporting environmental preservation (Afonso, 2017); nonetheless, this form of advertising only became widely adopted by brands at the beginning of the 1990s (Afonso, 2017) and is still being used today as one of the most important tools applied by companies to promote their sustainable offers.

For an advertisement strategy to be defined as green marketing, it should fulfill the four main rules set by the American consultant Jacquelyn A. Ottman (1993). To start with, the consumer must be involved in the process, whether this may be through co-creation in the product development phase or simply integrating customers into the communication process (Ottman, 1993; Nogueira, 2020). Secondly, the company must be transparent, which is essential for consumers to believe what is being advertised (Ottman, 1993). Thirdly, the product must comply with the characteristics that are being communicated, meaning that the added value presented in the promoted good needs to be somehow related to ecological benefits (Ottman, 1993; Nogueira, 2020). Lastly, it is important to consider the price, since most consumers assume that green products always have higher prices than their conventional counterparts (Peattie & Charter, 2013). Consequently, the product or service must be advertised in a way that makes consumers willing to pay that additional cost based on its eco-friendly characteristics (Ottman, 1993; Nogueira, 2020).

According to Nogueira (2020, p. 352), “green marketing is becoming more and more in fashion and it becomes, therefore, a new paradigm to be considered”. As a matter of fact, we have been experiencing in the last decades a shift in marketing strategies from promoting benefits centered around consumers to benefits centered around society and the environment (Martins, 2017). And the reality is that, nowadays, companies profit in several ways when they adopt green advertisement strategies.

Firstly, when consumers are aware of the impacts of their consumption, they will look for ways to not feel guilty after each purchase; consequently, they will search for the options which have the least environmental impact. Because of that, promoting a product as sustainable can increase its consumption, but it will most likely increase brand value and reputation (Petan, 2021). Since consumers seem to be demanding more and more products that help them reduce their ecological footprint, then the role that brands have in providing those products may lead consumers to believe that companies are working with them toward the shared goal of creating a more sustainable society (Nogueira, 2020).

Green marketing will also help companies "stand out and increase their competitive advantage" (Lenk & Rotkirch, 2021, p. 8). Every day we see brands facing increasing pressure towards being more sustainable, whether this may be from governments, shareholders, or other parties involved; therefore, this type of marketing strategy contributes to fulfilling that moral obligation that brands nowadays have to be more responsible (Polonsky, 1994). As a matter of fact, this pressure that companies have been experiencing has resulted in two types of green marketing strategies, according to Peattie and Charter (2013): a proactive strategy and a reactive strategy. While the reactive approach represents how companies implement business activities in response to legislation or the consumers' direct demands, the proactive strategy focuses on looking for improvements by communicating with shareholders and customers in order to understand which marketing activities would be more beneficial for all parties (Peattie & Charter, 2013).

Regardless of the strategies applied or how they are conducted, credibility will always be one of the most crucial elements in promoting a sustainable product (Reutlinger, 2012). Truth and transparency must be achieved as brands communicate with their customers; otherwise, a more negative perception will end up being adopted towards the company or the product that is being advertised (Charter, Ottman, Peattie & Polonsky, 2002) – something that has been reported to frequently happen in today's so-called greenwashing strategies.

4.3. The case of greenwashing

According to Lyon and Montgomery (2013), it is difficult to find one definition able to cover all aspects of greenwashing; however, some authors describe greenwashing as a "decoupling behavior" (de Freitas Netto, Ribeiro, Soares & Sobral, 2020, p. 6). Unlike what is commonly believed, this advertising strategy does not correspond directly to the act of lying, but rather of choosing to omit a part of the truth (Lyon & Maxwell, 2011; Vos, 2014). Because of that, it can be defined as a selective *exposé* of information, covering only the positive aspects of a company's environmental and social performance (Lyon & Maxwell, 2011).

In its most simple description, greenwashing finds itself in the intersection of two main behaviors: "poor environmental performance and positive communication about environmental performance" (Burbano & Delmas, 2011, p. 65). This deliberate selection of information allows

the company to control the consumers' perceptions, by associating certain brands and their products with the social and environmental values which are being advertised (Du, 2015).

In reality, greenwashing strategies can be applied from different angles. Even though it is not unanimous amongst researchers, de Freitas Netto et al. (2020) believe it is relevant to separate the social dimension of these claims from the environmental one; while Bowen (2014) detaches the advertisements applied on a company level to those aimed at products. Some authors also consider that there can be no greenwashing without an accusative component (de Freitas Netto et al., 2020), which means that consumers or other independent entities need to accuse the brand of conveying false claims for it to be defined as greenwashing fully.

Despite being a concept increasingly relevant today, greenwashing strategies have been applied since the beginning of the 1980s (Bowen, 2014). During a time when eco-consciousness seemed to be on the rise, but the access to information was kept minimum – at least, on the consumer's side – several companies were putting forward environmental claims as a way to increase their market share (Dahl, 2010). The first record of a greenwashing strategy dates back to 1986 when the environmental activist Jay Westerveld accused a hotel of only promoting measures that had a low environmental impact in comparison to the entire facility's environmental footprint, like consumers having to reuse towels as a way to save water (de Freitas Netto et al., 2020).

According to Bowen (2014), the designation of the concept itself was born from a merge between the words "green", an allusion to ecology, and "whitewashing", a deliberate attempt to hide facts about a person or an organization with the aim to protect its reputation. Knowing that this type of false advertisement has been around for some time, it is possible to observe a sudden rise in the adoption of greenwashing strategies in the last few years (Dahl, 2010). Between 2006 and 2009, ecological advertisements grew by around 300% (TerraChoice, 2009). And from the 2 219 products revealing some type of environmental claim, which the TerraChoice organization analyzed, 98% were conveying at least one form of greenwashing (TerraChoice, 2009).

There are several ways to classify greenwashing strategies, nonetheless, the most widely adopted method belongs to the marketing company TerraChoice (see, for example, Dahl, 2010; de Freitas Netto et al., 2020), which published a famous report on the matter called "The Seven Sins of Greenwashing" (2009). In this investigation, the company identified seven types of greenwashing strategies and gave each one of them a designation starting with the word "sin" (TerraChoice, 2009). In the following paragraph, we will analyze this type of classification.

The first sin raised in the TerraChoice report is called "Hidden Trade-off", referring to the way companies put forward environmental statements based on ecological features of small importance (TerraChoice, 2009), just like the case of the advertisement strategy criticized by Westerveld in 1986. The second sin, "No Proof", happens when a brand issues information regarding its ecological performance without any evidence to back it up (TerraChoice, 2009).

Some authors who believe that the evidence provided by brands should only be considered valid after being certified by an independent entity (Dahl, 2010). "Vagueness" is the third sin and corresponds to the use of adjectives that do not have a clear meaning to describe a company or a product, as in the case of the word "natural" (Dahl, 2010). These adjectives are, for that reason, easily misinterpreted by consumers (TerraChoice, 2009). Fourth comes the "Sin of Irrelevance", representing the claims that may be true but that are portrayed as important despite not bringing any added value to consumers (TerraChoice, 2009). For instance, when companies classify a product as "CFC-free" when CFCs have been legally banned for some time (Dahl, 2010). The fifth sin, called "Lesser of Two Evils", looks to describe truthful statements which distract the consumer from reality as a whole (TerraChoice, 2009). For example, when fast fashion companies advertise their sustainable collections which, even though they are better for the environment, are still not eco-friendly, due to the unsustainable system in which they are integrated. "Fibbing" is the sixth sin, describing marketing claims that are simply not true (TerraChoice, 2009). Lastly, the "Sin of Worshiping False Labels", for when brands certify their information using supposedly independent entities but that, in reality, have a conflict of interest or were simply created by the brand (TerraChoice, 2009).

Greenwashing has been truly impacting both consumers and the companies themselves since it creates a sense of distrust within the green market (de Freitas Netto et al., 2020). This phenomenon, commonly referred to as ecological skepticism, affects not only the brands that apply greenwashing strategies but also those that don't, because consumers struggle to identify which environmental information is true and which is not (de Freitas Netto et al., 2020). As a consequence, because consumers are afraid to be misled, they end up boycotting the whole of the green market (Burbano & Delmas, 2011). Only through educating consumers and communicating the right information, can brands – and society in general – fight consumer skepticism and greenwashing.

4.4. How information seems to be lacking in brick-and-mortar stores

The report published by TerraChoice (2009) also highlights how the most common environmental cues used in physical retail, namely the color green and ecolabels created by brands, are the communication tools most connected with the marketing sins of greenwashing. McShane, Noseworthy and Pancer (2015) demonstrated that, in the absence of other informational resources, these two can actually negatively impact the consumers' purchase intentions. Because, while these types of allegations are able to activate the perception of eco-consciousness in consumers, they then fail "to further substantiate the environmental claim" due to the lack of supporting cues (McShane, Noseworthy & Pancer, 2015, p. 171).

Also, consumers can only register a certain amount of stimuli in a physical retail setting, and retailers have not been optimizing their communicative store settings to improve consumers' full experience (Arrigo, 2017). Even though "we focus on an appearance-related cue, there are other types of sensory cues (e.g., the way the product feels or smells), product-related cues (e.g., shape of the product), and environmental cues (i.e., store where the product is displayed, other products on the shelf, green walls in the store) that seem likely to similarly activate an environmental schema" (McShane, Noseworthy & Pancer, 2015, p. 172).

With an increasing number of brands advertising their products as eco-friendly, it is important to keep in mind the notion of trade-offs. When consumers see a product communicated as sustainable, they believe that, for that to be possible, other factors must have been compromised (Irwin, Luchs, Naylor & Raghunathan, 2010). Namely, quality: for a product to be sustainable, some consumers assume that certain resources have been redirected for that, turning the product into something of lower quality (Dhar, Gorlin & Newman, 2014). The same can happen with desirability, which affects the consumers' purchasing intentions. Lastly, consumer skepticism can also play a role here, since it impacts how consumers perceive green retail in general (Burbano & Delmas, 2011).

Chapter 5: Introducing ecolabels into the fashion industry

5.1. Ecolabels: a general definition

McShane, Noseworthy and Pancer (2015, p. 162) define ecolabels as a "wide range of certification labels that are used to signal various ethical qualities about products (e.g., ethical sourcing, fairtrade, energy efficiency, labor practices, animal rights, environmental orientation, etc.)." Companies adopt this tool to identify and promote sustainable products (Lenk & Rotkirch, 2021) as a means of communicating its eco-friendly features (Ferrari et al., 2013).

As one of the most used methods to certify a product or a company's environmental performance (Sammer & Wüstenhagen, 2006), ecolabels can convey a vast range of information (Delafrooz, Nouri & Taleghani, 2014). These may apply to various areas within sustainability (Henninger, 2015) or even to different stages in the supply chain (Halme & Turunen, 2021). Nonetheless, this diversity of information can actually work as an advantage, since ecolabels end up complementing themselves when applied simultaneously (Halme & Turunen, 2021), also allowing each label to examine deeper into its own area of specialization. Even though this tool has the ability to provide consumers with various types of information, recent investigations have been demonstrating how ecolabels appear to concentrate on the environmental dimension of sustainability (see, for example, Horne, 2009; Chamhuri, Sarah, Siwar, Talib & Taufique, 2014; Lindersson, 2017;

Halme & Turunen, 2021). Only in some cases is it possible to verify a combination of social and environmental norms, both certified by the same label (Lindersson, 2017).

Generally speaking, ecolabels are based on a "binary logic" (Halme & Turunen, 2021, p. 3), meaning that a product or a company is or is not certified by the label. According to Halme and Turunen (2021, p. 3), "the dominant majority of labels offer no scale that would differentiate between the relative sustainability of products and so help the consumer identify a highly sustainable offering as opposed to one that just barely meets the label criteria". The European Union has already adopted this scaling method, for example, in the labels certifying household goods' energy efficiency (Halme & Turunen, 2021). In fashion, nowadays, we can observe this type of classification through the work of Good on You (Halme & Turunen, 2021), an organization that rates fashion companies according to their social and environmental performance from "we avoid" to "great" (Good on You, n/d, n/p.).

Figure 6. Good on You's rating of the fashion brand Zara (Dockrill, 2020).

It is also possible to view ecolabels as a part of a company's sustainability reporting since brands still convey information, even through a binary indicator (Blengini & Shields, 2010). Nevertheless, this type of communication tool cannot be separated from the brands' marketing plans. In its early days, ecolabels were nothing more than a strategy to encourage consumers to follow more sustainable purchasing habits (Horne, 2009). Nowadays, the same strategy is usually integrated into a company's marketing mix, particularly in the fourth P: promotion (Lenk & Rotkirch, 2021). With ecolabeling being used as a way to influence the consumers' decisions and provide information about the sustainability of a product, this strategy is simply defined as a type of green promotion (Bhalerao, Deshmukh & Vaibhav, 2015). That is why it is important to separate ecolabels into two groups: those which are created by independent entities and those which brands create. Because, despite sharing the ultimate goal of influencing the consumers' consumption habits, one is usually more associated with advertising than the other.

5.2. The different types of ecolabels

When it comes to classifying environmental labels, researchers tend to adopt the division performed by the International Organization for Standardization (see, for example, Bratt, Broman, Hallstedt, Oldmark & Robért, 2011; McShane, Noseworthy & Pancer, 2015; Lindersson, 2017; Gonçalves & Silva, 2021). Firstly launched in 1998, the ISO 14020 standard "establishes guiding principles for the development and use of environmental labels and declarations" (International Organization for Standardization, 2000, n/p). At the present moment, it is the 2000 version of this standard that is in place for orienting the process of ecolabeling and its requirements are reviewed every five years (International Organization for Standardization, 2000). The organization is also working on a new standard for environmental labeling – the ISO/CD 14020.2 – which aims to contribute to other United Nations Sustainable Development Goals rather than simply the environmental dimension presented in the "13 Climate Action" goal. The ISO/CD 14020.2 conduct will further subscribe to the following SDGs: "11 Sustainable Cities and Communities" and "12 Responsible Consumption and Production" (International Organization for Standardization, n/d).

Currently, the ISO 14020:2000 standard divides ecolabels into three different groups, commonly referred to as "Type I", "Type II" and "Type III" environmental labels (International Organization for Standardization, 2000). The first type corresponds to environmental claims published by a third-party organization, namely when an independent entity awards a specific certification based on the fulfillment of a set of environmental criteria (International Organization for Standardization, 2000; Blengini & Shields, 2010; McShane, Noseworthy & Pancer, 2015). As an example, we can highlight the EU Ecolabel, which was established in 1992 and since then has been certifying the "products and services meeting high environmental standards throughout their life-cycle" (European Commission, n/d, n/p). According to the ISO 14020 standard, the second type of ecolabeling relates to self-declared environmental claims (International Organization for Standardization, 2000; McShane, Noseworthy & Pancer, 2015). It occurs when manufacturers or retailers make statements about the environmental performance of their own products (Blengini & Shields, 2010). This ecolabeling type is really common in the fashion industry, for example, in the case of H&M, which provides a "Conscious" label to the products within their collections that are considered the most sustainable. Lastly, the third type consists of a "quantified declaration of the environmental performance of products throughout their life cycle" (Blengini & Shields, 2010, p. 485). Also known as Environmental Product Declaration (EPD), these labels allow easier comparison between the environmental performance of similar products (International Organization for Standardization, 2000; Gonçalves & Silva, 2021). However, they are not widely used and known by consumers, unlike the first two types.

Despite the ISO 14020:2000 working as a general standard, each type of ecolabels has its own guideline created by the International Organization of Standardization in 2000. Type I is covered by ISO 14024, having been last reviewed in 2018; Type II is covered by ISO 14021, currently

working under the 2016 version; and Type III is covered by ISO 14025, following the guidelines established by the 2006 review (International Standard Organization, 2000). It is important to highlight that each one of these standards defines "guiding principles" (International Standard Organization, 2000, n/p) for ecolabeling, which means that third-party organizations, manufacturers, retailers, brands, or all other entities that may be involved in environmental labeling are not obligated to follow the ISO recommendations.

Besides the International Standard Organization classification, it is possible to say that ecolabels may vary according to several factors, from the sustainable dimension they refer to (environmental, social, or economic) to how easily they are understood by consumers (D'Souza, Taghian & Lamb, 2006). Even though most of these labels work essentially as binary indicators – since products and companies either have them or not (Blengini & Shields, 2010) – the variations that exist among the wide range of environmental labeling, even between the ones defined by the International Organization for Standardization, also lead to distinct consumer responses (McShane, Noseworthy & Pancer, 2015), particularly when it comes to credibility.

For instance, the work conducted by the United Nations Office for Project Services (2009) concludes that we should only use the term "ecolabel" when referring to third-party independent certifications. With the rising offers in the green market, it is important to further standardize this concept so as to not increase the consumer's ecological skepticism (Caeiro, Domingues, Pires & Ramos, 2015). Because ecolabels may have an important role to play in reducing today's attitude-behavior gap, but they have to work efficiently for that to be fully possible.

5.3. Ecolabels as communication tools

We have previously established how information and education can be important for consumers' perception of sustainable fashion. Unlike the older days of retail, when there was a bigger information gap between brands and their customers, we nowadays have to see consumers as more empowered and more informed agents during the shopping process (Lindersson, 2017). And the more information is provided to them, the more aware consumers will be of the impact of their purchasing decisions (Auger et al., 2003); however, the hardship remains in finding how to communicate this information for it to be valued by consumers (Kenning, Meise, Philips & Rudolph, 2014).

According to the investigation conducted by Ferrari et al. (2013, p. 261), "sending stronger environmental guarantees and more information to the market increases the consumer's trust, which can have positive effects on competitiveness, and even on turnover." In their work, ecolabeling was mentioned as one of the tools which can "increase consumers' liability and magnify their attitude to buy greener products" (Ferrari et al., 2013, p. 261), thereby classifying ecolabels as an effective way of providing information to consumers.

Also, in the research of Bratt et al. (2011), ecolabels are defined by their ability to inform consumers, since they are an instrument that helps to specify certain sustainable attributes of a product or a company that customers were not aware of. For that reason, they are essential for the consumer's decision process because they help to identify and opt for the products which perform better in terms of environmental or social requirements (Ferrari et al., 2013; Caeiro et al., 2015).

Furthermore, when ecolabeling is developed by independent and reliable entities, like the European Union, these labels can also work as market regulators (Caeiro et al., 2015). In this case, they do not only identify the products and companies which are less harmful to the planet, but they prevent the use of greenwashing strategies by brands (Dosi & Moretto, 2001).

On the other hand, consumers have been demonstrated to associate ecolabels with the environmental dimension of sustainability (Lindersson, 2017), considering that the most common clothing labels focus primarily on describing materials and defining the ecological aspects of the supply chain. In a study conducted by Lindersson (2017, p. 38), consumers described the present methods for ecolabeling as providing "brief information" and they mainly recalled encountering "green-coloured labels with links to websites to visit, or with barcodes to scan for further information". For that reason, in this study sample, consumers did not consider ecolabels as strong influencers of their purchasing behaviors, mainly when these labels were the only presented source of information (Lindersson, 2017).

Nonetheless, Blengini and Shields (2010, p. 490) believe that the use of this labeling strategy might have a more positive outcome if stakeholders are actively involved "in the creation and dissemination of eco-labels". In the last few years, we have been finding out that simply describing a garment's background and its reduced ecological impact does not seem to increase the consumers' sustainable behaviors, since it does not seem relevant enough to influence their decisions (Bandyopadhyay & Ray, 2020). According to Bandyopadhyay and Ray (2020, p. 387), the most successful sustainable fashion brands do not base their communication solely on sustainability, rather they follow a more "balanced communication", a sort of a sweet spot that not only does not harm the environment but also shows to bring direct advantages to consumers, like improved product quality or better health conditions.

Returning to retailers, it is important to acknowledge their role in choosing which information to provide to consumers (Kenning et al., 2014); however, they must always ensure that ecolabels work as a communication strategy capable of highlighting a sustainable product's added value to consumers (Lindersson, 2017). In the end, ecolabels can also have another effect: if retailers see rising consumption in the presence of these labels, they will also increase their own sustainable product offers because they know it has a positive outcome both for them and the consumer (Blengini & Shields, 2010).

Despite several studies have demonstrated that ecolabels can be effective informative tools in sustainable fashion brands and products, it is also important to return to the concept of the sweet spot advanced by Bandyopadhyay and Ray (2020). Mainly in the fashion industry, where design is such an important part of the buying process, garments cannot only focus on their environmental impact, because they still need to be attractive to consumers (Bandyopadhyay & Ray, 2020). Only after having assured that, should we implement an effective communication strategy (Bandyopadhyay & Ray, 2020), particularly based on ecolabels. But which types of ecolabels should we use? They all have pros and cons, which is what we will explore next.

5.4. Balancing the outcomes of brand's self-ecolabeling

In this and the following chapter, we will be balancing the pros and cons of the different types of ecolabels according to the ISO 14020:2000 standard division. However, there will only be mention of two of the three ecolabeling types, namely Type I (third-party certifications) and Type II (self-ecolabeling), since they are the most commonly used tools nowadays. We will start by describing the advantages and disadvantages of Type II ecolabels, considering that these are not only the most popular within the fashion industry but also the ones that researchers criticize the most.

Generally speaking, it is difficult to provide consumers with an effective communication strategy, which can both show to be simple and understandable, and influence them into making a more conscious decision (Gonçalves & Silva, 2021). Nevertheless, the green marketing methods developed by retailers, which can be inserted into the Type II labeling category, are believed to be one of the reasons why consumers mostly struggle with matching their intentions and values with their purchasing behaviors (Johnstone & Tan 2015; Lindersson, 2017). Looking from a consumer's perspective (which will be the main perspective adopted by the author in these chapters), a brand's self-ecolabeling can often seem misleading (Lindersson, 2017) and eventually raise more doubts than answer the questions consumers already have.

Firstly, it is important to establish that sustainability reporting in the fashion industry is not in any way a legal requirement that companies have to meet (Caeiro et al., 2015); therefore, ecolabels are voluntary for brands (Fidélis & Moreno Pires, 2012) and their use has been growing partly thanks to the demands of consumers. However, if there was some kind of governmental legislation on this matter, it would have an impact besides making this tool safer for consumers: it could help standardize how the information is gathered and portrayed in ecolabels.

Even though the ISO 14020:2000 standard has provided brands, producers, and retailers with guidelines for the use of ecolabels, these are, once again, voluntary, and have not been put in place in the majority of the cases. As a consequence, brands' communication is filled with green terms that cannot be compared between themselves (Gonçalves & Silva, 2021; Halme & Turunen, 2021). For example, labeling a garment as "organic" can have different meanings for different brands

because there is no standardized mandatory guide describing the percentage of organic material that a brand needs to have in their garment's composition for it to be characterized as such. Because of this inconsistency, consumers end up being harmed more than benefiting from this kind of communication (Lindersson, 2017), considering that they struggle to compare different garments solely based on their labels (Gonçalves & Silva, 2021). There have already been some harmonization efforts, for example in the food industry (Lindersson, 2017), but these have not yet been translated into the specific needs of the fashion industry. And even in the cases where that has happened, these efforts remain inside the work of a specific company and are not shared with the entire industry (Gonçalves & Silva, 2021).

Another way in which self-ecolabeling shows to bring disadvantages for consumers is in how much it relates to advertising (Halme & Turunen, 2021). In reality, these communication tools often aim to reach the emotional side of consumers (Peattie & Crane, 2005), instead of attracting them through rationality. This logic, together with the sudden rise in the use of ecolabels, makes it easier for consumers to be skeptical about their veracity (Peattie & Crane, 2005). In research conducted by the Eurobarometer (2011), the main reasons behind green skepticism were related to the lack of credibility of companies and the use of unclear messages. It is no surprise that in a market where greenwashing is increasingly a reality (Peattie & Crane, 2005; TerraChoice, 2009), "consumers are reluctant to exercise the power of their green purchasing, as they no longer know who or what to believe" (Ferrari et al., 2013).

Still on the topic of reliability, we should recall the investigation conducted by TerraChoice (2009), which showed that the use of the color green and self-ecolabeling were among the environmental cues most associated with greenwashing by consumers. By combining these two elements, we are describing the most common type of green marketing strategy: ecolabels painted in green. We know that the color green is typically associated with sustainability (Labrecque, Milne & Patrick, 2013); however, the sole use of this color as a means of information tends to negatively affect consumers' perception (McShane, Noseworthy & Pancer, 2015), because even if it is an easy way to convey a particular message, consumers do not see it as enough for indicating the environmental attributes of a product.

Lastly, when a company intentionally resorts to self-ecolabeling simply to attract eco-conscious consumers, others may tend to perceive the promoted product as lower quality, since they assume other functions and attributes were taken less into account (Dhar, Gorlin & Newman, 2014). Once again, it is important for brands to follow a balanced communication, otherwise, consumers will consider sustainability as a tradeoff (McShane, Noseworthy & Pancer, 2015) and that is something that should be avoided.

5.5. Balancing the outcomes of third-party certifications

Unlike the cases previously presented, Type I ecolabels (the ones established by third-party entities) look for coherence through categorization. Categorizing certain characteristics in clothing can be tremendously important for consumers, since it helps them assess and frame the sustainable attributes of a certain product (Gershoff & Frels, 2015), making it easier to compare garments amongst the existing categories, even when a sole garment seemed to be difficult to analyze by itself (McShane, Noseworthy & Pancer, 2015). Having been created by an independent entity, these types of ecolabels work as a simple comparison tool, considering they use the same indicators for evaluating products from different brands (Blengini & Shields, 2010); also, we must keep in mind that these indicators will most likely be more reliable and objective than the ones established by brands to evaluate their own products (Curran, 2001).

When referring to third-party entities, these can both be independent businesses focused on classifying other brands' products, or legal authorities, such as the European Union, which have the power to establish mandatory guidelines for communicating environmental attributes. For Ferrari et al. (2013, p. 263), these norms "could prevent biases or misleading messages being conveyed to consumers and could enable a more consistent and synergetic action by other influent stakeholders (...) to support or boycott the purchasing of certain products on the market". Some methods are already being taken into action, like the European Product Environmental Footprint (PEF), which is creating an A to E certification scheme (Gonçalves & Silva, 2021) that will be discussed in the following chapters. Nonetheless, this and other similar cases are not only very recent but they also tend to ignore other aspects of sustainability that go beyond the environmental impact of a product (Blengini & Shields, 2010; Gonçalves & Silva, 2021).

Generally speaking, we may say that the simpler a label seems to be, the more attracted the consumer will be towards it (Lindersson, 2017), but this simplicity can also end up minimizing the reliability of the claim (Horne, 2009) since consumers "will likely seek out additional environment-related cues to support single-categorization as an environmentally friendly product" (McShane, Noseworthy & Pancer, 2015, p. 163). Similar flaws were found in the investigation conducted by Ferrari et al. (2013, p. 260), with studies showing that consumers will only find value in independent ecolabels if they are previously aware of their "meaning, characteristics, requirements, guarantees provided".

Despite that, we have already established how important it is for consumers to trust the information that is provided to them (Lindersson, 2017), and the reality is that Type I ecolabels are commonly characterized as more reliable (Ferrari et al., 2013). In the presence of ecolabels like the EU Ecolabel or the FSC (Forest Stewardship Council) certification, the study conducted by Ferrari et al. (2013) has shown that the importance of the brand's own communication decreases because consumers place credibility and loyalty in the labels that more official authorities have created.

But reliability is not the only positive characteristic that emerges from independent ecolabeling. On the one hand, it will encourage brands to adopt more sustainable practices and business models, because if these certifications become part of mandatory policy guidelines, all organizations will want their products to be well integrated into the system (Caeiro et al., 2015). This will consequently benefit consumers because it will once again facilitate sustainable fashion consumption (Ferrari et al., 2013). On the other hand, independent ecolabeling will also increase competitiveness, whether between brands or national markets, considering it will disadvantage producers that prioritize low costs over environmental impacts (Blengini & Shields, 2010).

Chapter 6: Classifying sustainability today

6.1. How can we classify sustainability?

As we have established the importance of categorization (see, for example, McShane, Noseworthy & Pancer, 2015), it becomes now equally crucial to highlight the methods currently used to frame certain sustainability features in all industries but particularly in textile and apparel. But, before that, we will focus on what companies and legal authorities need to classify sustainability: data.

Since we have been analyzing the consumer perception of sustainability through communication, it will be no surprise if we once again mention the importance of the information provided by brands. There has been a growing tendency for companies to report their sustainability efforts (Kareiva, McCormick, McNally, Miller & Ruckelshaus, 2015), which is a crucial component of most successful businesses (Bansal & Gao, 2013). Nevertheless, brands will only be able to properly inform on their environmental and social performance if they ensure traceability in their products. Whether this may be achieved through "radio frequency identification (RFID)" or "block chain systems", traceability rests in guaranteeing transparency throughout all supply chain, from the place of origin of raw materials to the entirety of the chain's working conditions (Gonçalves & Silva, 2021, p. 21). Traceability becomes even harder – and consequently more important – in companies that rely on multiple sub-suppliers and place their factories in countries where environmental and labor standards are still lower than standard European guidelines (Gonçalves & Silva, 2021). But even when corporate sustainability reporting is well achieved, we still have to face another obstacle: "the inconsistency of reporting methods" (Kareiva et al., 2015, p. 7376). Just like the fact that different brands present different types of ecolabels, making it hard for consumers to compare them, the same happens with companies' reporting (Kareiva et al., 2015), considering that they are allowed to use a wide range of indicators to evaluate their sustainable performance.

As a matter of fact, indicators are one of the most important parts of sustainability classification. Blengini and Shields (2010, p. 482) define an indicator as a "parameter (…) which provides information about the state of a phenomenon, environment, or area with a significance extending beyond that directly associated with a parameter value." These parameters should be scientifically

valid and representative, but also easy to interpret; furthermore, we cannot forget the quality and credibility of the data that lies behind them, and that is why traceability and good sustainable reporting are so important (Blengini & Shields, 2010).

Nowadays, in an effort to harmonize sustainable reporting and simplify classification, most environmental indicators are following the impact categories established by the life cycle assessment tool (Gonçalves & Silva, 2021), which we will be analyzing in the following chapter.

6.2. The different methods and tools for sustainability classification

As pointed out by Gonçalves and Silva (2021), most authors rely on the life cycle assessment (LCA) tool when identifying the environmental impacts of different products. By always using the same set of procedures (Crossin, Daver, Moazzem & Wang, 2018), this technique simplifies – for producers, companies, or consumers – the evaluation and following comparison of how a certain product or service affects the environment, from when it is created until when it is disposed of (Blengini & Shields, 2010).

The LCA tool was initially established in 1997 by the International Organization for Standardization and its current principles and framework can now be found under the ISO 14040:2006 standard (International Organization for Standardization, 2006). It consists of four main steps: "definition of the goal and scope of the LCA, the life cycle inventory analysis (LCI) phase, the life cycle impact assessment (LCIA) phase, the life cycle interpretation phase" (International Organization of Standardization, 2006, n/p). The first step aims to establish the study's purpose and "define the functional unit and system boundaries" (Crossin et al., 2018, p. 1575). Then, the inventory analysis focuses on collecting the information needed to assess the impact of a product, namely its spending of resources and the emissions and waste created during its production and after its disposal (Crossin et al., 2018). In the third step – the impact assessment – there is a deeper analysis of the data gathered during the last stage to measure the studied product's environmental impact (International Organization for Standardization, 2006; Crossin et al., 2018). Lastly, during the life cycle interpretation phase, it is when researchers can understand the environmental problems raised by the manufacturing of a specific product, and then compare them to the results achieved in the LCI and LCIA phases for similar products (International Organization for Standardization, 2006).

Despite being a good step forward when it comes to sustainability classification, the life cycle assessment tool also has its shortcomings. Firstly, as we were able to see by its definition and main procedures, the LCA as framed by the ISO 14040:2006 is mainly focused on the environmental dimension of sustainability. To counteract that, the s-LCA has been recently developed, as a tool to highlight the social and economic impacts of a product (Gonçalves & Silva, 2021). While following the same four stages as the LCA, the s-LCA performs an evaluation solely based on social

impacts (Gonçalves & Silva, 2021), meaning that, at the moment, there is no ISO standard for life cycle assessment combining both the environmental and social features of a product. Another issue relates to the LCA tool's dependence on collecting reliable and accurate data (Bach, Eggers, Finkbeiner, Gül, Lehmann & Spielmann, 2015). According to Bach et al. (2015, p. 1647), "the lack of reporting and documentation of factory-specific emissions limits the scope of interpretation and conclusion on the actual environmental performance of the product". These problems are usually reported in the additional final four stages of the life cycle assessment tool, namely: "reporting and critical review of the LCA, limitations of the LCA, the relationship between the LCA phases, and conditions for use of value choices and optional elements." (International Organization for Standardization, 2006).

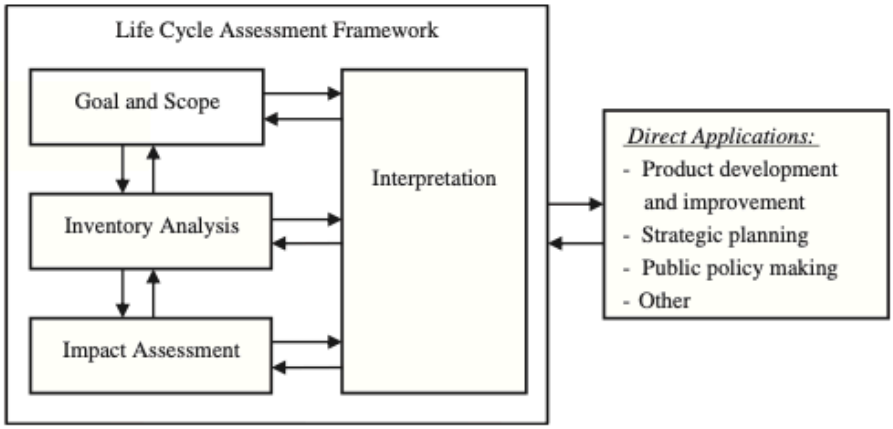

Figure 7. Phases of the LCA tool (International Organization for Standardization, 2006).

The LCA standard is definitely the most used tool for sustainability evaluation; however, other methods have been developed, sharing the same goal, and that derived from the principles established by the International Organization for Standardization.

One example is the eco-cost methodology, established by the Delft University of Technology in the 1990s with the goal to simplify product evaluation (Brezet, Hendriks & Vogtländer, 2001; Gonçalves & Silva, 2021). The main difference is that this tool uses one single indicator to evaluate a product's environmental impact, encompassing "material depletion, fossil energy consumption, toxic emissions" (Brezet, Hendriks & Vogtländer, 2001, p. 157), and it expresses "the amount of environmental burden of a product on the basis of prevention of that burden" (Gonçalves & Silva, 2021, p. 8) in terms of money (Brezet, Hendriks & Vogtländer, 2001). The eco-cost methodology evaluates the environmental impacts raised in the production and recycling process by comparing them with the Earth's estimated boundaries (Brezet, Hendriks & Vogtländer, 2001).

Other tools, such as the Higg Index, were created to provide companies and consumers with a simple comparison mechanism based on sustainability. The Higg Index was created by the Sustainable Apparel Coalition (SAC) in 2011 and it helps calculate a garment's environmental

impact throughout its entire life cycle (Gonçalves & Silva, 2021). Since all products are evaluated using the same indicators, consumers can easily compare the assessed products to choose the most sustainable options.

It would be possible to quote other examples, for instance, the Sustainable Brand Index (Gonçalves & Silva, 2021), or the Good on You brand comparison app; nonetheless, the rest of this chapter will rather focus on the initiatives that have been conducted within the European Union's legislation, since it is the area of jurisdiction of this dissertation.

6.3. Current developments in the European Union

In April 2013, the European Commission launched the Product Environmental Footprint (PEF) Guide aiming to provide a cohesive directive for measuring and informing consumers and companies on the impact of a product during its life cycle (European Commission, 2013; Bach et al., 2015; Gonçalves & Silva, 2021). This guide is part of a bigger initiative entitled "Single Market for Green Products" (European Commission, 2014, n/p); however, for the purposes of this work, we will focus solely on the Product Environmental Footprint Guide.

Together with the PEF Guide, the European Commission has established the Product Environmental Footprint Category Rules, which help designate more particular requirements for evaluating and comparing the results of product's impacts studied according to the PEF norms (European Commission, 2013; European Commission, 2014). Nonetheless, there is still much to be done in assessing the relevant impact categories that should evaluate a product's environmental footprint (Bach et al., 2015); furthermore, it is yet to be determined how to translate those results into information that can be easily communicated to consumers.

The PEF Guide has been testing several approaches to communication, one of which is the A to E certification scheme (European Commission, 2013; Gonçalves & Silva, 2021). This method has already been adopted in the EU Energy Label, where appliances are evaluated according to their electrical spending from A – the most efficient – to E – the less efficient (Bach et al., 2015). As a matter of fact, the scale in the EU Energy Label has been broadened from A to G starting from March of 2021, in order to avoid classifications of "A+", "A++" and "A+++" that were starting to become common within the appliances' market (European Commission, 2021).

In the Product Environmental Footprint approach, the scale is similar, with class A being used to characterize the product with the least environmental impact and E the biggest impact, with stage C marking the measure with which other products are benchmarked (Bach et al., 2015). But, as we can see, the PEF Guide only measures the environmental performance of products, whereas the social impacts are still left out from this approach (Gonçalves & Silva, 2021). Also, the European Commission has yet to explain how this measuring tool will coexist with other labeling schemes defined by the ISO 14020:2000 standard, namely the Type III environmental product

declarations and Type I third-party certifications, where the European Union already has its own tool (Bach et al., 2015).

The EU Ecolabel, firstly launched in 1992, is a type of sustainability certification that can be integrated into the Type I ecolabels of the International Organization for Standardization. According to the European Commission (2020, p. 3), it promotes "goods and services with reduced environmental impacts all over their life-cycle, when compared with products in the same product group existing on the European market". While aiming to guide the consumers' choices in terms of sustainable options (European Commission, 2020), the EU Ecolabel also "encourages and supports producers who are more aware of the environmental consequences of extractive, industrial, and manufacturing activities" (Blengini & Shields, 2010, p. 478).

Just like the PEF Guide, the EU Ecolabel is extensive to several product categories, from textile and footwear to paper and wood-based products (European Commission, 2020), but, as a crucial difference, this Type I label places a small number (but still present) of social parameters within its requirements (Associação Têxtil e Vestuário de Portugal, 2015).

As this dissertation is being written, the European Commission has been studying ways "to integrate PEF method in EU Ecolabel criteria through the development of PEF studies to identify hotspots, when needed, and through the 'pilot project' on the revision of EU Ecolabel criteria for textiles and footwear apparel" (European Commission, 2020, p. 7). The following investigation aims to provide further evidence on this matter.

Chapter 7: Methodology

7.1. Research question and variables

According to Carvalho (2002, p. 85), "scientific knowledge does not have the sole purpose of creating or discovering new theories. (...) A new paradigm does not lead necessarily to the rejection of the previous one (...)." The chapters of the literature review proved fruitful to obtain more information regarding the impact of ecolabels on sustainable fashion consumption; however, several questions still emerged from the theoretical framework. Among these, we highlight the following topics:

- Which types of ecolabels have the biggest effect on consumers?
- What is the best way to pass information onto consumers through a small clothing label? Is it through text, imagery, or other tools?
- Can we base fashion ecolabels on other systems that have already proven their efficacy?
- Do ecolabels have the same effect on all consumers or do we need distinct strategies for each target audience?

The questions mentioned above connect in terms of the impact that ecolabels may have on the buying habits of the general consumer, so, to find an answer to them was to find an answer to a bigger problem, that is, the research question. We'll introduce once again the question which guided this research: **Can ecolabels help increase sustainable consumption in brick-and-mortar fashion stores?**

For Kerlinger (1980), a problem is a question through which the different variables connect. In this case, the variables rest on two different fields of study. The first one is mostly based on communication, particularly regarding the type of information, which can be portrayed in a clothing label, and that translates into whether a garment is sustainable. The second side follows a more behavioral approach, notably the behavior of fashion consumers. From the sociodemographic characteristics that divide consumers into distinct target groups to understanding their recurrent shopping habits, there were different variables that could originate from this field. Nonetheless, according to what had been found by the author as potential gaps in the literature, these were the selected variables for this study:

- **Consumer education** (V1). The first variable focuses on the impact that a consumer's level of knowledge on sustainability matters has on their fashion choices.
- **Vocabulary** (V2). The second variable relates to words and how these can affect the sustainability perception of a garment.
- **Certifications** (V3). The third variable separates the several types of ecolabels according to the ISO 14024 norm as a way to understand the impact of independent certifications.
- **Color** (V4). The fourth variable is the first approach to the imagery on ecolabels, aiming to analyze the effect of the color green, which is typically associated with sustainability.
- **Evaluation schemes** (V5). The fifth variable is the second approach to the imagery on ecolabels but is based on the impact of schemes and systems as means for transmitting information to consumers.
- **Price** (V6). The sixth variable will be analyzed through the lenses of consumer behavior, in order to understand how distinct prices affect the consumers' shopping decisions.

Variable number	Variable name	Variable type
V1	Consumer education	Behavioral
V2	Vocabulary	Communicative
V3	Certifications	Behavioral/Communicative
V4	Color (green)	Communicative
V5	Evaluation schemes	Communicative
V6	Price	Behavioral

Table 1. Names and types of variables in the research, from: Author.

7.2. Methodology and methods

To find an answer to the research question previously presented, the next chapters will consist of a mixed-method research methodology divided into two main stages: the exploratory stage and the confirmatory stage.

First, in the exploratory stage, the author will take the knowledge obtained in the literature review and look to develop it extensively, not only in terms of depth of information but also in broadening the research to other topics that may contribute to this investigation. For that, this first stage will be composed of two distinct qualitative methods, targeted at two distinct audiences. It will begin with a round of exploratory interviews, where the author will talk with fashion and sustainability experts to further understand the impact of ecolabels on sustainable fashion consumption. During the four sessions of interviews, the interviewees will range from a member of the European Commission, representing the EU Ecolabel team, to a faculty professor and researcher on matters of sustainable fashion, as well as a fashion journalist from Vogue Portugal and an owner of a sustainable Portuguese fashion brand sold on a brick-and-mortar store. After this, for the second part of the exploratory stage, the author will conduct a focus group composed of ten participants, where average fashion consumers of diverse backgrounds will gather to talk about their shopping habits and how ecolabels could impact their fashion consumption. It is important to underline that the exploratory stage will be crucial to understanding which questions should take part in the second stage.

The second stage is the confirmatory stage, where the knowledge obtained through qualitative methods, such as literature review, exploratory interviews, and the focus group, will be tested with a reliable set of quantitative data, consequently confirming or denying the hypotheses that were crafted during the research. This stage will be based on a survey composed of distinct sections which will touch on diverse topics regarding ecolabels and sustainable fashion and will be presented to a group of more than a hundred respondents. The data collected in the confirmatory stage will be the basis for the final discussion focused on understanding if ecolabels can really help increase sustainable consumption in brick-and-mortar fashion stores.

7.3. Exploratory Stage: Interviews

7.3.1. Research design, study object, and general goals

After having collected relevant information for the present investigation in the works of renowned authors, compiled in the previous chapters, the author conducted a series of interviews that took part in the qualitative dimension of the mixed methods approach used in this dissertation.

These interviews were carried out with experts in several fields mentioned in the literature review, notably fashion, fashion retail, sustainability, and ecolabels. The interviewees were chosen according to their professional careers, current jobs and occupations, and past works, being these

in any way related to the work that was being conducted in this investigation. While some experts were chosen for their theoretical knowledge, others provided information according to their practical experience in the mentioned fields.

Having a diverse set of interviewees was important for achieving the purpose of this part of the methodology. The more varied these experts' experiences were, the more areas could be covered, as a way to gather information capable of complementing the works analyzed in the literature review. Because all in all, the main goal behind the interview portion of the research design was to explore and deepen the knowledge obtained in previous chapters, with the intention of clarifying any doubts that the first round of readings may have left. Also, even though the author had conducted extensive literature research, there are always topics that may be missing from those first few chapters, and these interviews are the perfect opportunity to raise new questions and explore more ideas before entering the quantitative dimension of this investigation.

Other more specific goals are mainly associated with the selected panel of interviewees. For example, in one of the cases, there was an interview with one of the authors of an academic paper frequently mentioned in this dissertation's literature review, with the purpose of understanding a greater deal of the investigation that had been carried out before and after publishing that work. In another case, there was an exchange of questions with a representative of an organization - the European Union - whose reports were also relevant for the first chapters. Since there had already been an evolution in work conducted by the EU, but that hadn't already been reported to the general public, the interviewee was able to offer important insights that could contribute greatly to this dissertation.

7.3.2. Problem

Just like every single method that was later applied, the exploratory interviews were conducted with the aim of discovering a possible answer to the main research question: Can ecolabels help increase sustainable consumption in brick-and-mortar fashion stores? However, considering that the interviewed experts came from different backgrounds, the author gathered a set of specific topics to be approached according to the particularities of each case. It resulted in a total of five main issues, which guided the overall script of the interviews.

The first issue was associated with sustainability communication. In this part, the author sought to understand which characteristics were usually featured by experts whenever they wanted to describe a fashion product as sustainable. The following questions made up for the first part of the script:

- Which characteristics do you choose to highlight when you want to define a garment/clothing line as sustainable before the general consumer?
- Which characteristics do you choose to highlight when you want to define a garment/clothing line as sustainable before a fashion expert?

- Among the characteristics highlighted in the last answer, are there any that you consider relevant to communicate to experts, but may not have the same importance to the general audience? If so, which ones and why?
- (Only for experts not associated with fashion brands) Can you remember any information that you may consider to be relevant to describe a sustainable fashion product but that is usually not communicated by brands? If so, what?

The second part of the interview guide focused on sustainable fashion communication in physical retail spaces, due to the specific challenges that these locations face when trying to highlight the sustainable features of a product. This section was solely applied to one of the interviews since only one expert had practical knowledge on this matter. The questions were presented as follows:

- How do you shape your methods of communicating sustainable fashion according to the specific needs of both online and physical retail spaces?
- Within a brick-and-mortar store, which tools do you use to communicate sustainable features to your consumers?
- Which flaws or difficulties related to communication can be found in physical retail spaces? And which mechanisms have you been adopting to fight these difficulties?

In the third section, the focus shifted to ecolabels, firstly as a general concept. Since the author also interviewed experts which worked outside the fashion industry, some questions recognized broader examples of ecolabeling strategies were allowed, even though the author always preferred to target the specific needs of sustainable fashion every time that was possible. This was the only section to which all interviewees replied, and it was composed of the following questions:

- Are you familiar with the concept of ecolabels? If so, what do you consider to be an ecolabel, and could you give current examples of it?
    - Among the mentioned examples, which ones do you consider to be a good example, and which do you consider to be bad ones, and why?
- What are the advantages of using ecolabels for consumers?
- And which are the problems or obstacles raised by existing ecolabels (still in the perspective of the consumer)?

The fourth section connected ecolabeling strategies with consumer behavior, as a way to understand how consumers perform before different communicative situations. It was aimed at looking for words, colors, expressions, schemes, imagery, or other means of communication, which inform the general audience on the characteristics of a certain garment, and how consumers react to those same tools. The questions were the following:

- From examples gathered in your professional experience, how do you feel that ecolabels impact consumer behavior during the shopping process?

- Which characteristics mentioned on an ecolabel may be more attractive to consumers?
- On the contrary, which information do you see as superfluous for a consumer's shopping process?
- How can ecolabels contribute to increasing sustainable fashion consumption?

The fifth and final section was a deep dive into the European Union's ecolabeling strategy, where it was analyzed the work from the past years but also possibilities for the future. Just like in the third part of the interview, the nature of this topic allowed for examples outside the fashion industry to be mentioned. This section read as follows:

- What are the main advantages and disadvantages of only targeting the environmental or the social dimension of sustainability in an ecolabel? Is it viable to find a solution for an ecolabel covering both?
- How has the European Union been working to communicate the PEF Guide's findings to the general public? Could that communication be associated with the work conducted on the EU Ecolabel?
- What are your thoughts on the A to E certification system that we see on nutritional labels and energy efficiency schemes? Is it something that we could see applied to the fashion industry in the near future?

With these five sections, the author covered a big majority of the topics touched on in the literature review, while also being able to create a foundation for the following methods of the investigation.

7.3.3. Methodology and sample characterization

In total, the author conducted four interviews with four different fashion and sustainability experts. Two of the interviews were conducted in Portuguese - the author's mother tongue -, while the other two were conducted in English.

Regarding their organization, it was intended for all four interviews to be semi-structured; however, that was not possible in two of the cases, because of time constraints posed by the interviewees. In those cases, both the questions and the answers were sent by email. In the remaining cases, the author followed the initial plan. One interview was conducted in person, while the other was in a videoconference, which allowed the author to progressively tailor the questions to the ideas posed by the interviewees during the conversation. The author created the main script, detailed in the previous chapter, from which questions were selected that could better target the interviewees' background and field of knowledge. Because of that, not all interviewees replied to the five different sets of questions, and the author will further detail which questions were posed in which interviews in the next paragraphs.

As has already been mentioned, four experts were selected to take part in this investigation. The first interviewee was Silvia Ferratini, coordinator of the EU Ecolabel team in the unit of Circular

Economy, Sustainable Production & Consumption, from the Directorate-General for Environment at the European Commission. According to the "Strategic EU Ecolabel Work Plan 2020 - 2024", the European Commission has been studying ways to "integrate PEF method in EU Ecolabel criteria through the development of PEF studies to identify hotspots, when needed, and through the 'pilot project' on the revision of EU Ecolabel criteria for textiles and footwear apparel" (European Commission, 2020, p. 7), therefore, Silvia Ferratini was selected to clarify the work that the European Commission did in the past on the ecolabels topic, but also to provide insight on the work that the EU may be developing in that same field while this thesis is being developed.

The second interviewee was Mafalda Afonso. Mafalda is the co-founder of the sustainable Portuguese fashion brand Sunkissed and is also currently working as a sales assistant in the Etikway concept store - a physical retail location containing several sustainable Portuguese fashion brands. For that reason, Mafalda Afonso's selection was based on her practical knowledge, not only as a brand owner and strategist, but also thanks to her experience observing customers while contacting with sustainable fashion garments in person.

Sara Andrade was the third selected interviewee. In Vogue Portugal's print issues, Sara is the main responsible for writing sustainability fashion pieces, whether these are advertisements or editorial content. For that reason, the journalist is used to communicate sustainable fashion as an attractive feature for high-end female consumers - Vogue Portugal's main target audience – and to know what brands want to communicate to their consumers.

Lastly, the author interviewed Anabela Gonçalves. Anabela Gonçalves is the co-author of the scientific paper "Looking for Sustainability Scoring in Apparel: A Review on Environmental Footprint, Social Impacts and Transparency", published in May 2021, and is also a researcher at Faculdade de Ciências da Universidade de Lisboa. Having been one of the main contributors to previous chapters of the literature review, thanks to the mentioned academic paper, it was intended for Anabela to fully explain her research methods and conclusions, as well as talk about further studies that have been made after the publication date.

Name	Occupation	Area of expertise	Interview purpose	Selected sections
Silvia Ferratini	EU Ecolabel team coordinator at European Commission	Ecolabels	To provide insights regarding the current work of the European Union on the ecolabel sector.	3 and 5
Mafalda Afonso	Co-founder of the sustainable Portuguese fashion brand Sunkissed; Sales assistant at Etikway concept store	Sustainable fashion in brick-and-mortar retail	To explain her brand's method of sustainability communication and to provide insights regarding the behavior of sustainable fashion consumers in a brick-and-mortar store.	1, 2, 3 and 4
Sara Andrade	Journalist at Vogue Portugal	Sustainable fashion communication	To define what is currently being communicated regarding sustainable fashion and to explain which types of information brands should provide.	1, 3 and 4
Anabela Gonçalves	Researcher at Faculdade de Ciências da Universidade de Lisboa	Sustainable fashion classification and ecolabels	To clarify the results of her academic paper "Looking for Sustainability Scoring in Apparel: A Review on Environmental Footprint, Social Impacts and Transparency" and provide further conclusions on her studies.	1, 3, 4 and 5

Table 2. Characterization of the interviewees for the exploratory stage, from: Author.

7.3.4. Results

After completing the interviews, the author gathered a full list of conclusions regarding, on the one hand, the issues touched on by all interviewees, and, on the other hand, some important topics that were raised in specific cases. Since the interviews were divided into five sections, the presentation of the results will follow the same structure, even though section five has been

diluted into the conclusions presented for sections three and four, since there was not a lot of information to be presented on its own.

7.3.4.1. Results for the first section

As explained in chapter "7.3.2. Problem", the first section of the interview's guide concentrated on how brands are currently communicating fashion sustainability. And one of the topics which were raised right at the beginning was that not communicating sustainability is actually something rare today. In the words of Sara Andrade, journalist for Vogue Portugal: "(...) sustainability is a big marketing and selling point nowadays, so I don't really see any brand not mentioning it." As a matter of fact, all interviewees agreed that sustainability is in itself a driver of consumption, and, for that reason, brands want to inform consumers about their environmentally friendly and socially responsible initiatives. When this type of communication does not happen, that is because either a brand is already known for its sustainability features (for example, Patagonia communicates sustainability less than H&M, because it's widely known as a responsible brand), or the brand has already evolved from a certain stage in their journey towards sustainability, which means that a specific sustainable action may already have been communicated previously.

Nonetheless, generally speaking, brands want to communicate how sustainable their clothes are, and, when doing so, some interviewees mentioned that materials are one of the garment components that are most frequently put forward by brands, especially in comparison with other social aspects. For Anabela Gonçalves, that is because the social dimension of sustainability is something that is taken care of behind the scenes: "Brands don't communicate [the social aspects] as much, but their main concern is to verify, to audit suppliers, to make sure that there are no situations that can put in risk human rights, labor rights." This is because consumers draw a lot of conclusions from the place where a garment is produced. For example, the "Made in Portugal" label is widely associated with sustainability, and fair labor practices, whereas Bangladesh or China are associated with the complete opposite. It's interesting to see how the majority of the interviewees referred to "Made in Portugal" as a direct synonym for sustainability, and that, according to them, it was also the case for consumers.

When it comes to communicating materials, there are two words that truly attract consumers: "organic" and "recycled", since these are the words people are used to hearing the most. But, in the Etikway store, Mafalda Afonso declares to see a big difference among consumers of different nationalities. Even though Portuguese customers may associate organic cotton, for example, with sustainability, they tend to also connect it to higher prices, therefore making them step away from the garment; but that is not the case for Northern European consumers, who Afonso believes that seem to only buy a garment when those words are written on the label. The other thing that enhances the sustainability perception of a certain material is independent certifications, such as GOTS (Global Organic Textile Standard), BCI (Better Cotton Initiative), or OEKO-TEX, which

tend to be present in the labels of the most renowned sustainable fashion brands. Despite their undeniable presence, that may not be the same for the efficacy of these certifications – something that will be developed in future paragraphs.

In the first section, it was still discussed what lacks to do in terms of sustainability communication. Anabela Gonçalves pointed out how brands are currently focusing on communicating the environmentally friendly features of their packaging or even their store consumption. Nonetheless, there is still not a lot of information about the impacts of transportation in the global supply chain, mainly in the sustainability reports put forward by brands (which was the main type of documents analyzed in the work of the researcher).

7.3.4.2. Results for the second section

Regarding the topic of in-store communication, the majority of the claims came from the experience of Mafalda Afonso at the Etikway concept store. Afonso started by pointing out how communicating sustainability in-store is much harder than doing it online. Her brand, Sunkissed, has a strong online base, through which the interviewer says to inform consumers in a much more visual way. However, that is not so easily done in a physical location. According to Mafalda Afonso, most consumers enter the Etikway concept store thinking it is a store "like others", even though several signs and visual clues help describe it as a sustainability-focused selling point. For in-store communication, the Etikway concept store bets on the following methods to highlight its sustainable features: one board explaining what circular fashion is; one board highlighting all the independent entities that certify the garments of the store; a "sustainable fashion" sign before entering; clothing labels informing on materials (brands are obliged to highlight if their materials are recycled or organic), place of production and certifications. For the Sunkissed labels, Mafalda Afonso places the following information on her label: materials, certifications, place of production (which is always "Made in Portugal"), and "Slow fashion".

Nonetheless, Afonso clarifies that the fact that this information is present does not imply that consumers will actually understand it: "To be honest, there hasn't been not even one consumer in-store that has shown to have deep knowledge on this matter [of sustainable fashion]." For that reason, the role of the sales assistant is crucial to explain to consumers why a certain garment is more sustainable than other, but, mainly, to "justify" the garment's prices. For Mafalda Afonso, communication is an important tool to explain why prices are generally higher in sustainable garments and, in the Etikway store, it's usually the materials and the place of production that are presented as an explanation. But it's important to bear in mind that this need for justification is, most of all, a result of the lack of education and knowledge that consumers have on sustainable fashion (or the production of garments in general).

7.3.4.3. Results for the third section

Since the third section was the only one to which all interviewees contributed, it would be expected for it to have the most varied number of opinions. However, most of the arguments presented in the next paragraphs were shared by all experts, especially the definition of the concept of ecolabels. In fact, every single interviewee replied in accordance with the Type I category of the ISO 14024 guide. This means that ecolabels were always described as "environmental claims published by a third-party organization" (International Organization for Standardization, 2000) and never as "self-declared environmental claims" (International Organization for Standardization, 2000), which represents Type II of the ISO 14024 guide, and is a very common type of ecolabeling strategy applied by brands.

Furthermore, it was implied that even though certain social aspects may be guaranteed, ecolabels are mostly used to communicate the environmental performance of a product. That is the case of the EU Ecolabel, according to Silvia Ferratini: "EU Ecolabel criteria are mainly environmental, but in the case of textiles, also broad social criteria are there, to ensure the respect of broad social issues. (...) you would not want the EU Ecolabel given to environmentally friendly clothes done by children!" This lack of social guarantees is usually explained due to the difficulty in certifying both the social and environmental features of a product. However, Anabela Gonçalves clarifies that although this combination may be hard to achieve, it has already been performed by industry players, like the Sustainable Apparel Coalition, with the Higg Index.

According to Anabela Gonçalves, the Higg Index was created by the SAC as a way to "be in tune with the European Commission, because they know that legislation is to come in these sectors, so they are preparing the tools to answer to what the legislation will be." Silvia Ferratini confirmed that the European Commission has been studying new approaches to ecolabel communication under the Sustainable Product Initiative, and even though Ferratini has claimed that "it is a bit early for me to be able to say anything", there is already information (see, for example, European Commission, 2020) that it might be similar to the A to G classification system that is used in the EU Energy Label.

But there are other ways to communicate sustainability through ecolabels that may not always be considered. In the Etikway store, there were examples of labels made out of recycled paper and biodegradable options that contained seeds of flowers or vegetables that could be planted. The same type of visual cues could be obtained through the color green, which, in the view of the interviewees, is still very much in tune with the concept of sustainability.

Regarding the problems that persist in current ecolabels, each interviewee presented challenges that are more in tune with their occupation. Sara Andrade talked about the fact that brands having to pay for obtaining an independent certification from a third party may raise the risk of corruption, while Mafalda Afonso explained that small Portuguese fashion brands struggle to obtain these certifications, whether because they cannot afford it, or their production doesn't

reach the minimum amount of fabrics that these entities require for certification. According to Silvia Ferratini, the EU Ecolabel lacks visibility. In the words of Anabela Gonçalves, the tremendous amount of different entities certifying sustainable fashion brands may harm the consumer's ability to understand what they need to look for while shopping.

7.3.4.4. Results for the fourth section

As the fourth section was related to the relationship between consumers and ecolabels, the interviewed fashion experts talked about the advantages and disadvantages of these communication tools in the viewpoints of who is buying the garments.

One thing that seemed common in all cases was that ecolabels provide truthful and reliable information which empowers consumers, namely when speaking about Type I ecolabels according to the ISO 14024 guide. For that reason, it's also a way to fight greenwashing, or, in the words of Sara Andrade: "(...) [ecolabels] are a way to confirm your practices, giving the product that extra layer of truthness and validation so the consumer knows that being sustainable isn't just something that you say on your [Instagram] bio, it's something that has been verified. And that builds trust in the consumer." Also, ecolabels have the power to act in accordance with current legislation, to further confirm and validate the security of products that are being sold. This issue was presented by Anabela Gonçalves, because, during her studies, the researcher learned that "consumers believe that something that is for sale is safe (...) It is not always like that." Nonetheless, ecolabels can contribute to guaranteeing that brands comply with the legislation in place, since they are a tool for independent organizations to monitor the manufacturing processes, and then certify the level of sustainability of a certain garment or material.

But the world of ecolabels is not always that simple. In many cases, brands are presented with a complex set of criteria that needs to be fulfilled in order to obtain the organization's seal of approval. And while this may favor consumer security, it harms smaller brands that, although sustainable, cannot be certified due to the costs and the time that it takes to have a certain material certified. For Silvia Ferratini, this complexity is precisely one of the points that EU Ecolabel needs to work on: "We [the EU Ecolabel team] will see in the occasion of the next revision of the criteria if there is room for simplification." The other problem raised is the lack of visibility of ecolabels, not only in the case of the EU Ecolabel – even though it was also one of the challenges presented by Silvia Ferratini in her interview – but also even for bigger players like GOTS or BCI. Mafalda Afonso has frequently experienced the feeling of presenting Type I ecolabels to consumers in the Etikway store and seeing no reaction to the information because most consumers do not understand what these organizations actually do. "For a consumer that does not work in the fashion industry, they do not know what GOTS or BCI is. We need to invest more time in educating people to understand the certifications' meaning. (...) That must come from legislative entities, not only from brands," said Mafalda Afonso during her interview.

All interviewees agreed that there is still a lot that needs to be done by legislators, since, as this dissertation is being written, ecolabels are still a voluntary tool presented by brands to inform consumers about their sustainable practices. Currently, consumers are the main drivers for the presence of ecolabels, partially thanks to their growing recognition of the importance of sustainability. And despite all the issues that may have been raised during the interviews, there are still a lot of benefits for consumers in having this tool while shopping. As Mafalda Afonso puts it: "For them [consumers], it's having the power of information on their side so they can make the right decision."

7.4. Exploratory Stage: Focus group

7.4.1. Research design, study object, and general goals

After conducting interviews with fashion experts, the author continued the exploratory stage of the present research with a focus group. A focus group is an "informal discussion among selected individuals about specific topics" (Beck, Trombetta & Share, 1986, p. 73). According to Wilkinson (1998, p. 182), "it involves one or more group discussions, in which participants focus collectively upon a topic selected by the researcher, and presented to them (most commonly) as a set of questions." For this investigation, the focus group was used as part of the exploratory stage, before the development of a consumer survey (Wilkinson, 1998).

The focus group was composed of fashion consumers, from different age groups, genders, occupations, and financial capacities, who were chosen in order to represent various types of consumers. Even though the author was aware that it wouldn't be possible to achieve a complete representation of all consumers, diversity was widely taken into account, and it was one of the most important factors during the selection process of the people that would be attending this section of the investigation.

After talking with professionals who have deep knowledge on the topics of fashion and sustainability, it was now important to understand the opinions and viewpoints of a vaster audience, which typically does not have the same amount of knowledge compared to those who work inside the industry. Since the ultimate goal of this dissertation is to understand how consumers react to ecolabels, there was no one better than consumers to explain how they are currently reacting to the sustainable initiatives being put forward and how these affect their shopping habits.

The reason behind the execution of a focus group was to enable a conversation among the participants as a way not only to gather the biggest variety of opinions possible but also for it to be possible for consumers to confront different opinions amongst themselves. The goal was for the author to introduce some key talking points, and participants would discuss them with minimum to no intervention from the researcher. As Wilkinson (1998, p. 186) puts it, "focus group research conducted within a social constructionist epistemological framework does not utilize the

notion of pre-existing ideas, opinions, and understandings, located inside the heads of individuals, but, rather, presupposes that sense-making is produced collectively, in the course of social interactions between people."

Other more specific goals were pre-testing questions and methods of investigation that could be applied in the following step of the investigation: the consumer survey. Since both methods had the same target audience, the focus group was the perfect opportunity to experience how the questions would be posed and which topics could provide a more reliable data set, since the participants reacted immediately to the guide. Also, it was one additional possibility to get in touch with topics that may not have been present in previous steps of the exploratory stage. Consumers were encouraged to present their own opinions, which often differed from industry professionals' perspectives.

7.4.2. Problem

To create the focus group guide, the author followed the same approach that had been used in the interview section, with some alterations pertaining to the target audience. The guide started once again from the main research question and then branched out into the topics that had come up during the literature review and interviews which were specific to the consumer's behavior, reaction, or knowledge. Because of that, the final focus group guide was composed of five different sections: consumer knowledge on fashion sustainability; ecolabels; practice examples of ecolabeling schemes; vocabulary and images; price sensitivity.

The first part was created with the intent to better understand the participants' knowledge of sustainable fashion. Since diversity was largely taken into account during their selection, they also had different levels of education on matters of sustainability, and, more specifically, sustainable fashion. With that in mind, these were the questions that made up the first part of the guide:

- How would you self-evaluate your knowledge of sustainable fashion?
- What is sustainable fashion?
    - What is green fashion?
    - What is ethical fashion?
- Do you feel as if you've been buying sustainable fashion? If so, in which stores do you do it? And if not, why don't you do it?

The second section was all about ecolabels, not only to understand if the participants were familiarized with the concept but mainly to see how they would react to current examples of ecolabeling schemes in the fashion industry. For that, these were the questions posed to the participants:

- What is an ecolabel?
    - Consumers were asked to see if they would recognize a Zara ecolabel.

    - Consumers were asked to see if they would recognize an H&M ecolabel.
    - Consumers were asked to see if they would recognize a GOTS ecolabel.
- Which type of information is usually present in clothing labels?
- When you read a fashion label, which type of information are you usually looking for?
- When you read a fashion label, which type of information do you ignore?
- Is there any information that is not usually present on a clothing label but that you wish it would be there?

The third section carried on with the topic of ecolabels but mostly focused on current examples of ecolabeling schemes, not only from the fashion industry but also from other sectors, and how consumers would react to them. There were four cases contemplated in this part of the focus group guide, namely the EU Ecolabel, the EU Energy Label, the nutritional traffic light label (more particularly, the one used by the Portuguese supermarket Continent), and, lastly, the Good on You scheme for fashion brands. For each case, the author posed four questions:

- Do you recognize it?
- What are the benefits of receiving information from this scheme?
- What are the downsides to receiving information from this scheme?
- And what if it was on a clothing label? What would you think of it?

The fourth section was intended to test how consumers react to specific words and visual clues that translate a sustainable initiative's presence. The aim was to understand which vocabulary or imagery had the biggest impact on shopping habits, which was achieved through comparing clothing labels, where consumers chose the option they would be more likely to purchase. These were the comparisons put forward in section four:

- Recycled cotton vs. Organic cotton
- Recycled polyester vs. Organic cotton
- Recycled polyester vs. Cotton
- Made in Portugal vs. Made in Bangladesh
- Recycled polyester, Made in Portugal vs. Organic cotton, Made in Bangladesh
- Polyester, Made in Portugal vs. Organic cotton, Made in Bangladesh
- Organic cotton, Made in Portugal, written in a green clothing label vs. Organic cotton, Made in Portugal, written in a white clothing label
- Polyester, Made in Bangladesh, written in a green clothing label vs. Organic cotton, Made in Portugal, written in a white clothing label
- Organic cotton vs. Organic cotton certified by GOTS
- Organic cotton certified GOTS vs. Organic cotton certified OEKO-TEX
- Organic cotton certified GOTS vs. Organic cotton certified BCI
- Organic cotton certified GOTS vs. Organic cotton certified EU Ecolabel
- Organic cotton vs. Recycled polyester which saves 60% more water

- Organic cotton which saves 70% more water vs. Recycled polyester which saves 60% more water

The fifth and final section was centered around price sensitivity, since price was pointed out as one of the main factors which supports the attitude-behavior gap explained in literature review. It followed the same comparison method from the last section, adding monetary information that had not been mentioned before. The comparisons were as follows:

- Organic cotton, Made in Portugal, €10 vs. Polyester, Made in Bangladesh, €5
- Organic cotton, Made in Portugal, €7,5 vs. Polyester, Made in Bangladesh, €5
- Organic cotton, Made in Portugal, in a green tag, €10 vs. Polyester, Made in Bangladesh, in a white tag, €5
- Organic cotton, Made in Portugal, in a green tag, €7,5 vs. Polyester, Made in Bangladesh, in a white tag, €5
- Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €10 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €5
- Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €7,5 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €5

7.4.3. Methodology and sample characterization

The focus group was conducted in person, in the city of Leiria, Portugal, with a group of 10 participants who chose to speak in Portuguese among themselves, and with the author of the guide. As was previously mentioned, the guide presented to the participants was divided into five parts: the first three were mostly composed of open questions, and the last two followed a comparison system where consumers had to choose between two options.

For the author, it was important to ensure that participants would be given the complete freedom to openly talk about their shopping habits, and doubts and concerns regarding sustainable fashion, which was mostly obtained with the open questions contemplated in the first half of the guide. These questions were formulated with the intent to be answered with long responses, usually asking for the consumer's opinion or knowledge on the matter. This section also focused on enabling a debate among the interviewees, opening the room for discussions that could represent the various types of consumer behavior.

The fourth and fifth parts of the focus group guide contained questions based on comparisons. For each topic, participants were given two examples of clothing pieces and had to choose which garment they would buy solely based on the information that was presented to them. Even though the author gathered quantitative data, because of how these questions were conducted, the comparisons' main purpose was to understand the reasoning behind each consumer's choice. These sections of the guide were also important to test different questions that would be later

applied to the consumer survey since the author could observe how the participants were reacting to each example given.

In terms of the sample characterization, the group was composed of 10 participants of different ages, gender, and occupations. The ongoing pandemic impacted the group's composition since two participants tested positive for Covid-19 a few days earlier and had to be replaced, which meant that the age group from 26 to 42 ended up not being represented.

Overall, the gender division was perfectly achieved, with 5 women and 5 men. Regarding the different age groups, there was 1 participant under 20 years old, 2 participants from the ages of 20 to 25, other 3 representing people from 43 to 50, and 4 consumers above 50 years old. Diversity was also achieved in the social parameter of occupation, with two students and eight employed consumers, ranging from warehouse managers to accountants. It is important to mention that three of the participants were in some way connected with the fashion industry, but despite having a relatively higher degree of knowledge in the topic, they were not considered experts in the matter of sustainable fashion. Below there's a more accurate description of each participant.

	Gender	**Age**	**Occupation**
Participant 1	Female	51	Kindergarten teacher
Participant 2	Female	53	Entrepreneur/Clothing store owner
Participant 3	Female	50	Dressmaker
Participant 4	Male	57	Accountant
Participant 5	Male	43	Business operations manager
Participant 6	Female	21	Call-center operator
Participant 7	Female	48	Warehouse manager for a fashion brand
Participant 8	Male	25	Student
Participant 9	Male	17	Student
Participant 10	Male	55	Graphic designer

Table 3. Characterization of the focus group members for the exploratory stage, from: Author.

7.4.4. Results

7.4.4.1. Results for the first section

The first section of the focus group was intended for the author to better understand the level of knowledge and education that consumers believed to have – and actually showed to have – on matters of sustainable fashion. For that, participants were asked to self-evaluate, on a scale of 1 to 10, what they considered to be their level of knowledge on the topic, and the results ranged from 4 to 7, resulting in an average of 5.5. This medium level of knowledge was then later supported by their answers on some of the most common definitions that we relate to sustainable fashion.

Regarding the definition of sustainable fashion itself, it was clear that participants mostly explained it by referring to its environmental dimension. The group talked about materials, the need for reusing clothes and buying second-hand, and even mentioned the impact of washing cycles on the environment. Only one participant recalled the more social aspects of the definition. And the same happened when defining ethical fashion. It was interesting how one participant thought that ethics, in this case, was used to describe the difference between what consumers say and what consumers actually do: "I remember seeing a sentence from someone in China saying how much they earned from producing a certain product, and that shocks everyone, including me. You are shocked by that, but then you forget. Because the price-quality relation makes you want to buy that garment. And your ethics vanish" (Participant 1). Without mentioning it directly, this participant was referring to the attitude-behavior gap that has already been extensively discussed in previous chapters.

It is also important to say that, during the debate which arose in the first section, sustainability itself was never put into question, although sustainable fashion was sometimes mentioned using pejorative words and expressions. For example, second-hand garments were shown to be perceived as "damaged clothing" and some participants agreed on how they usually "doubt" that certain garments are actually as sustainable as brands say they are (mainly in terms of their materials and composition).

Furthermore, a big majority of the focus group members said they are aware that they do not buy sustainable garments. Mainly participants between the ages of 48 to 57 explained that their "generation is not sensitive to that", while younger consumers claimed that they are trying to make more sustainable choices.

7.4.4.2. Results for the second section

The lack of knowledge regarding sustainable fashion among the participants ended up having the biggest impact on the second section since this was supposed to be focused on ecolabels, but consumers were not familiar with the concept. When asked to define ecolabels, the answers varied

greatly: some thought the concept was related to the recycling instructions that usually come in products and others described it as "the inner label of garments that tells us how to wash it". And the same happened when participants were shown different examples. Although Zara and GOTS' ecolabels looked familiar to a few of the participants, no one could tell where that familiarity came from.

When the discussion switched to regular clothing labels, consumers agreed that price is the number one information they look for. After that, materials seemed to be important (mainly for people with particular allergies and sensibilities), as well as the place of production – here, "Made in Portugal" was the most sought-after. On the other hand, washing instructions were the least important piece of information that, according to the participants, exists on a clothing label.

7.4.4.3. Results for the third section

For the third section, the debate centered around current examples of ecolabeling schemes, whether those which are associated with the fashion industry or other types of products that are evaluated or classified according to a particular factor. As has been mentioned, the focus group guide contemplated the following four examples: the EU Ecolabel, the EU Energy Label, the nutritional traffic light label (more particularly, the one used by the Portuguese supermarket Continente), and, lastly, the Good on You scheme for fashion brands.

The debate led to the conclusion that both the energy efficiency certification (EU Energy Label) and the traffic light food label had the biggest impact on consumers' purchases. All participants, with no exception, knew the systems very well and were aware not only of their purpose but also of how they function, since it was, in their words, "easy to understand". Two focus group members even said: "It would be great if we had that on clothing" (Participants 4 and 7).

After these two methods of classification, the EU Ecolabel was the one that triggered the most positive reactions. Even though any of participants identified the label, the majority claimed that it looked "familiar," and it was clearly reported as being a reliable tool since it belonged to the European Union. Consumers even said that they could assume certain characteristics from the presence of the EU Ecolabel, such as "sustainable", "European", "good quality", and "ecologic".

Lastly, the Good on You evaluation system, whose functioning was explained in chapter "5.1. Ecolabels: a general definition" of the theoretical framework, was the least well-received among the participants. Despite not discarding its relevance, they claimed that this type of scheme is usually more associated with the satisfaction surveys that are taken after making a purchase, thereby not providing information as clearly as the other tools.

7.4.4.4. Results for the fourth and fifth sections

Since the fourth and fifth sections of the focus group guide followed a similar methodology, the results will be given in the same chapter, as a way to facilitate the comprehension of the overall conclusions taken from the label comparison.

The opening questions focused on materials, where the author was able to conclude that, even though words like "organic" or "recycled" may have a slight impact on consumers' choices, it's the materials themselves that actually count. And, when sustainability is prioritized, natural materials are usually preferred, even when compared to recycled synthetic options. In this case, it was cotton that was always preferred to polyester, even when it was regular cotton against recycled polyester. The participants only became divided when recycled cotton was compared to organic cotton and, in this example, recycled cotton ended up gathering more votes, but it was a difference so small that should not be considered due to the size of the sample.

But, when more information was added, it was not the materials that influenced the consumers' decisions: it was the place of production. For example, most participants only chose a garment made out of recycled polyester when it was produced in Portugal, even surpassing organic cotton, which was made in Bangladesh. It was clear how "Made in Portugal" had such a big impact on each choice, and this was mainly due to two reasons: the first being that certain countries (like Bangladesh, presented in the comparison) were associated with bad labor conditions, including slavery, and the lack of environmental legislation; the second reason was purely economic. As one of the participants puts it: "If it [a garment] is produced in Portugal, the margin stays in Portugal, so it helps the Portuguese economy and that also counts for me" (Participant 4).

Still, on the topic of materials, several independent certification entities were placed for comparison; however, the results demonstrated that, although the presence of certifications may be important, consumers cannot distinguish among the different organizations, and therefore are not aware of what each one entails. When asked to choose between a certified garment and a non-certified one, the choice was obvious: the certifications made it much more reliable. But, besides the European Union – which we have already described as being the most "comforting" and "secure" – there was no other entity that sparked a specific interest from the consumers.

Colors were also tested in this label comparison section, mainly to see how much the color green could impact the consumers' purchasing habits. And the author concluded that it still has a role to play. When choosing between the same exact clothing labels, with the only difference of one being painted in green and the other in white, most consumers choose the green one, claiming that it would attract them the most whilst in a physical retail space. But the color green should be not considered a decisive factor, because, when the information was modified on the labels, consumers made their choice according to the written information, not the color in which the label was painted.

Generally speaking, the more information was provided, the more consumers became aware of their choices. Although consumers knew what a "recycled" or "organic" material was, it was not until those words were really put into numbers that they understood the differences. As it was explained before, cotton was almost always chosen in comparison with synthetic materials. If it was written on the label that the garment made out of recycled polyester was saving 60% of water, and the organic cotton one had no such information, then the majority ended up choosing the recycled polyester garment. However, several consumers raised some doubts regarding how the numbers would be calculated, declaring that this information could be easily manipulated.

The price was the next thing that was added to the equation, but several factors made the author discredit the obtained results. To begin with, participants claimed that the price difference that was presented was not so big that it would fully impact their shopping decisions. Furthermore, since this exercise was conducted within a group of ten participants, it's important to take into consideration the impact of the social desirability bias, which relates to "the basic human tendency to present oneself in the best possible light" and makes "respondents (…) unwilling or unable to report accurately on sensitive topics for ego-defensive or impressions management reasons" (Fisher, 1993). Being sustainability one of those topics, it was very likely that participants were answering according to what was right, instead of what they would actually do. And, as a matter of fact, 9 out of 10 participants chose, in every single comparison containing prices, the garment with the highest monetary value, which means that there were no differences worth debating.

However, during the price comparison exercise the author added another piece of information to the labels: a sustainability evaluation scheme that followed the same method as the energy certification one. Regarding that specific issue, the author was able to gather three main conclusions. First, that this systems work as an eye-catching tool, that can be easily seen in a brick-and-mortar store; second, that it is familiar to everyone, and it follows a logic that it is easy to understand; and third, that it is even more reliable when created by a third-party, like the European Union or an independent entity that is able to verify the information presented in the scheme. In the words of one of the participants: "I believe that the evaluation of garments [with the energy efficiency certification scheme] should be really considered. You look [at the label] and it's instantly seen. (…) And it's so simple, you usually think like this: the red is bad, it's what spends the most" (Participant 7).

7.5. Confirmatory Stage: Consumer survey

For the confirmatory stage of this investigation, the author conducted a survey targeted to general consumers to obtain quantitative data that could confirm the previous discoveries.

7.5.1. Research design, study object, and general goals

After gathering information on the topics of sustainable fashion and consumer behavior, this questionnaire was presented with the intent to understand further if ecolabels can be effective tools for increasing sustainable fashion consumption. By collecting answers from a diverse set of consumers, the survey enabled the author to analyze and compare the results that had been drawn from previous methods, such as literature review, exploratory interviews, and a focus group; thereby reaching more practical and reliable conclusions.

The questionnaire also presented some advantages for the investigation that, until now, had not been obtained using the previous methods. To start with, thanks to its practicality, the author was able to reach a much vaster audience – for example, while the focus group gathered the answers of 10 consumers, this quantitative tool encompasses the responses of more than 130 participants. Also, and mainly in the focus group, there was the obstacle of the social desirability bias (Fisher, 1993), which would be less noticeable in the following stage since the survey was taken anonymously by the consumers. Lastly, by providing quantitative data, it was easier to test the hypotheses established for this chapter, working as a culmination of the results collected from the distinct methods applied in this investigation.

With this in mind, the survey stage presented itself as the perfect tool to collect data on the impact of the types of ecolabels, colors, imagery, vocabulary, and pricing, in order to understand how the fashion industry can turn ecolabels into the most effective tool possible, not only for the matters of sustainability communication but mainly for guiding consumers' purchasing decisions.

7.5.2. Problem

The questions presented in the questionnaire were similar to those described in the focus group guide since the group was also a way to test how consumers would react to each question. For that reason, the consumer survey guide ended up following the same topic divisions, with slight alterations to the questions themselves, according to what had been learned in previous methods and also tailoring them to the particularities of this method.

Like the focus group guide, the questionnaire was divided into five sections; however, the first section was meant to gather demographic data, which will be analyzed in chapter "7.5.3. Methodology and sample characterization". The remaining sections carried on the divisions that had been tested among the focus group, with a few alterations that will be now described. It's important to highlight that the author looked for similar surveys on research papers and books; however, there was no pre-tested investigation that could be applied to the aims of this dissertation. For that reason, all questions and answers were crafted by the author.

After completing the section which sought to gather sociodemographic data, the questionnaire focused on understanding the consumers' knowledge of sustainable fashion – this time not

through the use of self-evaluative questions, but with other types of inquiries that would make the participants' opinions and level of education appear more subtly. For that, participants were presented with four closed questions and one open question, as follows:

- From 0 to 5, please evaluate the following factors according to their impact on the sustainability of the fashion industry:
    - Online shopping packaging
    - Workers' salaries
    - Washing cycles
    - Materials and fabric composition
    - Production volume of fashion brands
    - Factories' working conditions
- Through which means do you usually obtain your knowledge on sustainable fashion? Please evaluate on a scale of frequency, from "Never" to "Always":
    - Books and magazines
    - Documentaries
    - Social media
    - Academia: classes, courses, workshops
    - Fashion brands' websites/brick-and-mortar stores
    - News websites and blogs
- Which of the two labels belongs to the most sustainable garment?
    - Label 1: 100% organic cotton, Made in Portugal
    - Label 2: 100% polyester, Made in Bangladesh
    - I don't know
- Which of the two labels belongs to the most sustainable garment?
    - Label 1: 100% recycled polyester, Made in Portugal
    - Label 2: 100% organic cotton GOTS certified, Made in Bangladesh
    - I don't know
- If you can, please explain your answer to the two last questions.

The third section was centered around ecolabels, and, more particularly, understanding what consumers think about current ecolabeling schemes, as well as which types of information they take from current clothing labels to justify their shopping decisions. In that sense, consumers were firstly presented with three ecolabel examples (a Zara "Join Life" label, the EU Ecolabel, and a GOTS label), and, without mentioning their names, by simply showing their images, consumers were asked for each case:

- Do you recognize this label?
    - Yes
    - No
- Which of the following sentences do you feel best represents their meaning?

    - It characterizes a garment which is not sustainable
    - It characterizes a garment which is sustainable
    - It characterizes a garment which is very sustainable
    - I don't know

To complete the third section, consumers were also asked:

- When you read a clothing label, which information do you consider relevant in order to buy that garment? Please evaluate each component from 1 to 5:
    - Price
    - Size
    - Materials/fabric composition
    - Washing instruction
    - Place of production

In the fourth section, consumers found a dilemma: "Imagine that you are standing before two white t-shirts, and you need to buy one of them. Simply with the information presented, choose which one you would be more likely to buy." All of the 10 cases were comparisons, where, just like in the focus group, consumers had to choose between one of two clothing labels, or claim that the choice would be indifferent to them. This comparison tool allowed the author to test the efficacy of ecolabels according to several factors: materials, place of production, colors, independent certifications, and prices. The main goal was to create a hierarchy among the different types of information that we can usually find on a clothing label and understand which had the most impact when making the final shopping decision. The comparisons were presented as follows:

- Polyester, Made in Portugal vs. Organic cotton, Made in Bangladesh
- Recycled polyester, Made in Portugal vs. Cotton, Made in Bangladesh
- Cotton, Made in Portugal, written in a white clothing label vs. Cotton, Made in Portugal, written in a green clothing label
- Organic cotton, Made in Bangladesh, written in a white clothing label vs. Polyester, Made in Portugal, written in a green clothing label
- Organic cotton certified GOTS vs. Organic cotton in a Zara's Join Life label
- Organic cotton certified GOTS vs. Organic cotton certified EU Ecolabel
- Organic cotton, Made in Portugal, €40 vs. Polyester, Made in Bangladesh, €10
- Organic cotton, Made in Portugal, €30 vs. Polyester, Made in Bangladesh, €10

The fifth and final section was crafted after the consumers' interest in specific ecolabeling schemes during the focus group. These were the energy efficiency certification, created by the European Commission, and the traffic light food label, with a particular focus on the one which is used by the Portuguese supermarket Continente. The efficacy of each tool was tested through the use of

closed questions and comparisons, with an application of these systems to the specificities of the fashion industry. For each label, these closed questions were posed:

- Do you recognize this label?
    - Yes
    - No
- From 1 to 5, evaluate the certification scheme according to the following characteristics:
    - How easy it is to read
    - How easy it is to understand
    - How fast it is to read
    - How fast it is to understand
    - How much it impacts your choice of a product
    - How much it impacts the monetary evaluation that you make of a product

The comparisons diverged slightly according to the systems proposed by each label. Consumers had to choose between label one, label two, or indifferent. For the case of the energy efficiency certification, the comparisons were the following:

- Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €40 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €10
- Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €30 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €10

For the traffic light food label system, the evaluation was made not for the entirety of the garment, but for the components that more usually impact its sustainability: water spending, CO2 emissions, energy spending, and social issues. The evaluation was portrayed in colors (red, orange, yellow, and green), and also more specific details were provided for each component. To make the comparisons easier to understand, the author will now only describe the colors for each component, but the labels can be seen consulted in Annex 2.

- Organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €40 vs. Polyester, Made in Bangladesh. Water: orange; CO2: orange; Energy: orange; Social issues: red. €10
- Organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €30 vs. Polyester, Made in Bangladesh. Water: orange; CO2: orange; Energy: orange; Social issues: red. €10

Finally, the two different systems were compared between themselves. Consumers could choose between label one (with the energy efficiency scheme), label two (variation of the traffic light food label), or indifferent:

- Label one: Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €40
- Label two: Organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €40

7.5.3. Methodology and sample characterization

The consumer survey was conducted between the 30th of March and the 1st of May 2022, using the Google Forms platform to gather all the responses. The questionnaire was written in Portuguese since the author chose to narrow down the research to the Portuguese consumer market to obtain more accurate and precise results. The participation was completely anonymous, having only been gathered the sociodemographic data of the people who took part in the survey. All participants consented to the use of their personal information in the present investigation.

As was mentioned in chapter "7.5.2. Problem", the questionnaire was divided into five main sections according to the different topics that would be later analyzed. The sections were composed of three types of questions. Firstly, closed questions were the tool most used by the author, more specifically "yes" or "no" questions as well as scale questions. Still in the range of closed questions, but with a more specific goal, there were several comparison questions, mainly in sections four and five. These types of questions were deliberately chosen to obtain accurate responses from consumers, without having to pose direct questions where the answers could deviate from the truth. For example, instead of asking "Does a green clothing label impact your shopping decisions?" consumers were shown two similar clothing labels, with the only difference being that one was painted in white and the other in green. Lastly, there was one open question in the second section, because the author believed that it would be valuable to draw new perspectives pointed out by consumers, that, until that moment, had not been touched on during other stages of the dissertation. This question was not intended to provide the questionnaire with quantitative data, but rather distinct ideas and viewpoints that could be added to the final discussion.

Before sending out the questionnaire, it was tested with 5 specifically selected consumers, from different genders, age groups, and levels of knowledge on sustainable fashion to ensure sure that there would be no misunderstood sentences or questions. After minor alterations, the questionnaire was shared on social media platforms, such as Facebook, Instagram, and LinkedIn and emailed directly to specific sets of consumers, since the author was aware that the main target audience that would be reached on social media was mostly young and, therefore, not representative of the entire Portuguese consumer market.

In total, there were 134 responses to the online questionnaire. The following tables will show how this sample divides according to gender, age group, place of residence, academic level, and employment situation.

1. Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	18	13,4	13,4	13,4
Female	112	83,6	83,6	97,0
Non-binary	4	3,0	3,0	100,0
Total	134	100,0	100,0	

Table 4. Characterization of the survey's participants according to gender, from: Author.

2. Age group

	Frequency	Percent	Valid Percent	Cumulative Percent
<18	4	3,0	3,0	3,0
18-25	82	61,2	61,2	64,2
26-41	25	18,6	18,6	82,8
42-57	23	17,2	17,2	100,0
Total	134	100,0	100,0	

Table 5. Characterization of the survey's participants according to age, from: Author.

3. Employment situation

	Frequency	Percent	Valid Percent	Cumulative Percent
Student	41	30,6	30,6	30,6
Student-worker	22	16,4	16,4	47,0
Full-time employee	59	44,0	44,0	91,0
Part-time employee	4	3,0	3,0	94,0
Unemployed	6	4,5	4,5	98,5
Other	2	1,5	1,5	100,0
Total	134	100,0	100,0	

Table 6. Characterization of the survey's participants according to employment situation, from: Author.

4. Place of residence

	Frequency	Percent	Valid Percent	Cumulative Percent
Aveiro	3	2,2	2,2	2,2
Braga	5	3,7	3,7	5,9
Bragança	1	0,8	0,8	6,7
Coimbra	3	2,2	2,2	8,9
Évora	3	2,2	2,2	11,1
Faro	2	1,5	1,5	12,6
Leiria	32	23,9	23,9	36,5
Lisboa	48	35,8	35,8	72,3
Porto	15	11,3	11,3	83,6
Santarém	5	3,7	3,7	87,3
Setúbal	10	7,5	7,5	94,8
Viseu	7	5,2	5,2	100,0
Total	134	100,0	100,0	

Table 7. Characterization of the survey's participants according to the place of residence, from: Author.

5. Academic level

	Frequency	Percent	Valid Percent	Cumulative Percent
Middle School	4	3,0	3,0	3,0
High School	33	24,6	24,6	27,6
Bachelor's Degree	76	56,7	56,7	84,3
Master's Degree	21	15,7	15,7	100,0
Total	134	100,0	100,0	

Table 8. Characterization of the survey's participants according to academic level, from: Author.

7.5.4. Propositions and hypotheses

To better analyze the data obtained from the questionnaire, the author established four hypotheses and six sub-hypotheses to guide the final overview. A hypothesis implies the relation between two or more variables (Kerlinger, 1980), so these were based on the six main variables which had been presented at the beginning of the methodology stage (Figure 8). They were: consumer education, price, presence of certifications from independent entities (mainly the European Union), colors, vocabulary, and, finally, evaluation schemes.

The first hypothesis resulted from the differentiation of ecolabels made by the ISO standard, and more particularly the ISO 14024 guide, which separates this tool into three main categories: Type I, Type II, and Type III ecolabels. Since Type III ecolabels are not common in the fashion industry, these were excluded from the hypothesis, and the author compared simply the ecolabels established by brands (Type II) and the ones established by independent third parties (Type I). In this last case, the focus group showed that the European Union was one of the most trusted entities for sustainability certification, which was also contemplated in a sub-hypothesis (H1.1).

H1: Consumers consider Type I ecolabels more reliable than Type II.
H1.1: Among all independent entities for sustainable fashion certification, the European Union is the most trusted by consumers.

The second hypothesis was also based on a comparison, but this time it focused on the different types of information that can be found on a regular clothing label. Since materials and place of production had been highlighted either by fashion experts during interviews or by focus group members, these were the main variables that could divide consumers according to their impact on a shopping decision. The place of production proved to be more valuable in the focus group analysis, therefore, that was translated into this hypothesis. And since materials were also to be considered, the author also placed importance on vocabulary resulting in a second sub-hypothesis (H2.1).

H2: The social dimension (place of production) has more impact than the environmental one (materials) for fashion consumers.
H2.1: "Organic" and "recycled" positively affect consumers when analyzing a garment's composition.

The third hypothesis was meant to understand how visual cues work in conveying information to consumers. Due to the limited size of clothing labels and the lack of other means to inform consumers of a garment's sustainability in a brick-and-mortar store, words can also be very limited and restrictive. For that reason, visual cues are presented as more effective tools since they can provide information in a more quick and easy manner. Among the different types of visual cues that can be used in clothing labels, the author highlighted the color green, because, according to several authors referenced in the theoretical framework (for example, see McShane,

Noseworthy & Pancer, 2015), it is usually associated with sustainability, and also, the presence of ecolabeling schemes, mainly the EU Energy Label system, and the traffic light food label method.

H3: Visual cues are the best tool to convey information on fashion ecolabels.
H3.1: The color green is associated with sustainability, thereby it impacts consumers' buying decisions regarding fashion.
H3.2: Label systems like the energy efficiency certification and the nutritional traffic light are effective tools to increase sustainable fashion consumption.

The fourth hypothesis was created with the purpose to tie up the investigation, by demonstrating how ecolabels can be effective in increasing sustainable fashion consumption. However, even though this may be the case for all consumers, some types of audiences tend to be more impacted by this tool than others, due to the impact of variables such as education and price.

H4: Ecolabels help increase sustainable fashion consumption in all consumers.
H4.1: Ecolabels are more effective in already eco-conscious consumers.
H4.2: Ecolabels are less effective in price-sensitive consumers.

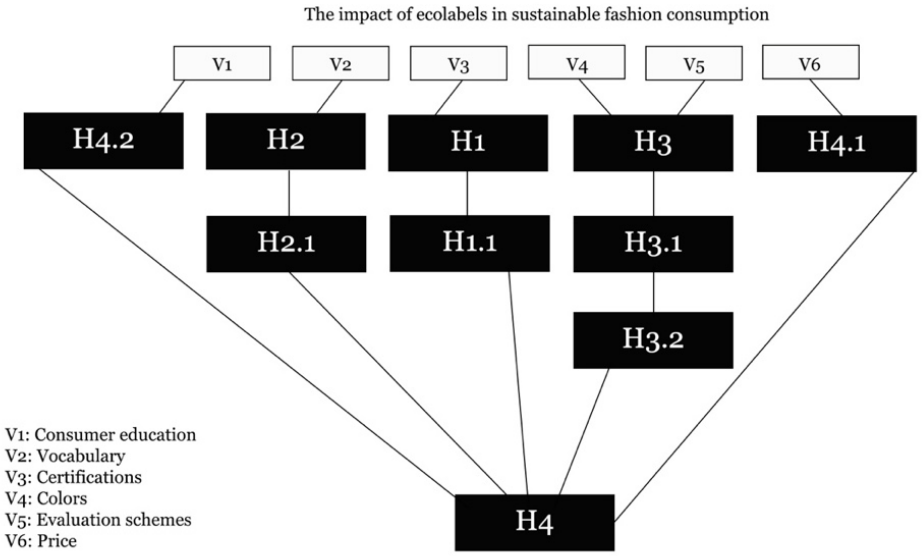

Figure 8. Visual representation of the connection between variables and hypotheses, from: Author.

7.5.5. Descriptive analysis

After the sociodemographic analysis, part two of the questionnaire focused on understanding the participant's level of knowledge on sustainability. Firstly, consumers were asked to evaluate from 1 to 5 the impact of six distinct factors on a garment's sustainability (Figure 9). By adding the different evaluations from a total of 134 responses, materials and garment composition emerged

as the most important factor, with 594 points, followed by the production volume of clothing brands (555 points) and labor conditions (536 points). The impact of online shopping packaging came fourth, with a total of 526 points; washing cycles (518 points) and workers' salaries (481 points) were voted as the two least important factors for defining a garment's sustainability. The option "I don't know" was voted 23 times, mostly on the impact of workers' salaries, counting 8 answers from 6% of the respondents. Furthermore, the author analyzed the means through which consumers obtained knowledge on fashion sustainability, with a scale of frequency ranging from "Never" to "Always". To each answer was attributed a numerical scale (1 for never; 2 for rarely; 3 for frequently; 4 for almost always; 5 for always) which resulted in a final count for easier analysis. Social media was the most used means for information (478 points), next to news websites and blogs (377 points) and documentaries (361 points). The three least used means by respondents were clothing brands' stores and websites (341 points), books and magazines (298 points), and academic resources, such as classes or research papers (289 points).

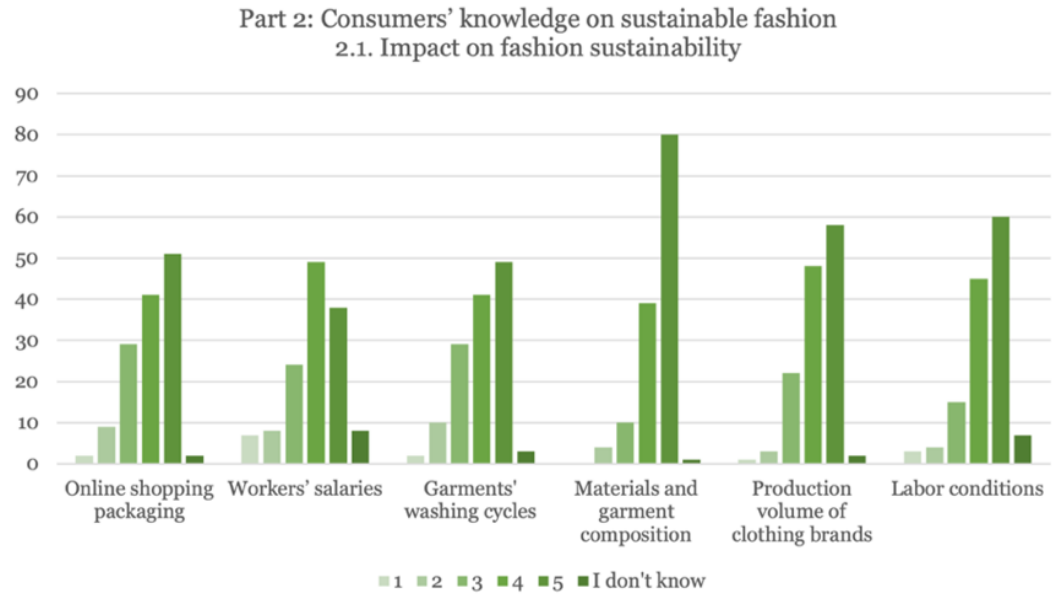

Figure 9. Results of the impact of different factors on fashion sustainability, from: Author.

In the last part of this section, consumers were given two clothing labels and had to choose which was the most sustainable option (Figure 10). In the first comparison, 96,3% of the respondents (129 people) prioritize the "100% organic cotton Made in Portugal" clothing label over the "100% polyester Made in Bangladesh" one, which was only selected by 2 participants (1,5% of the total sample). There were also 3 answers (2,2%) marking the "I don't know" option. In the second comparison, the results were more divided: 64,9% of respondents (87 consumers) voted for the "100% recycled polyester Made in Portugal" label against 22,4% (30 consumers) who selected the "100% GOTS certified organic cotton Made in Bangladesh" as the most sustainable. The percentage of answers claiming "I don't know" increased 10,5 percentage points, reaching 12,7% of the total sample or 17 consumers.

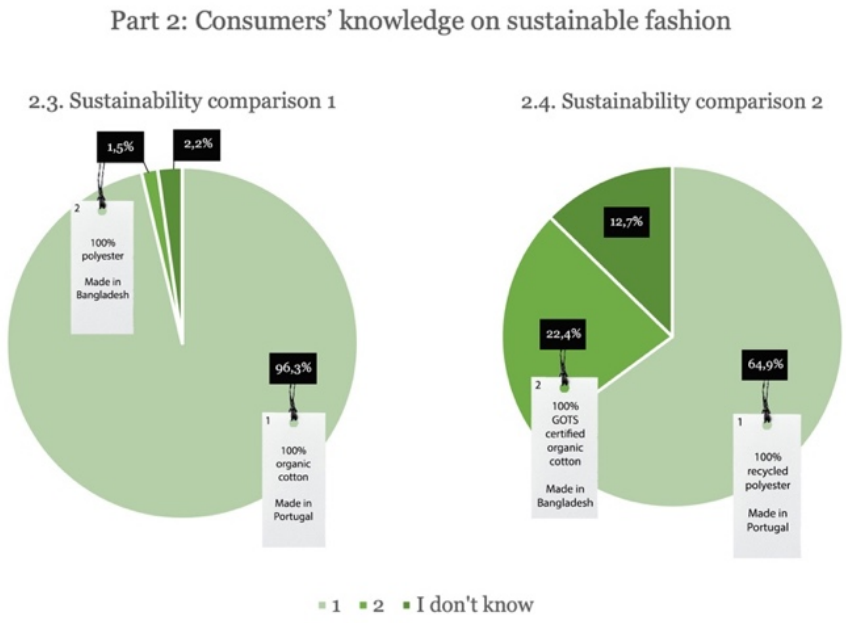

Figure 10. Results of two comparisons regarding the labels' perceptions of sustainability, from: Author.

Lastly, consumers were given the possibility to explain, through an open question, why they had chosen each option. The answers can be summed up in the following points:

- 37 (58,1%) consumers mentioned Portugal as a more reliable option;
- 20 (31,25%) consumers mentioned cotton and organic natural materials as more sustainable;
- 8 (12,5%) consumers mentioned recycled materials as more sustainable;
- 16 (25%) consumers mentioned transportation as an important factor to be considered when analyzing sustainability;
- 5 (7,8%) consumers mentioned certifications as an important factor to be considered when analyzing sustainability;
- 1 (1,6%) consumer didn't know what the GOTS certification was;
- 3 (4,7%) consumers mentioned that brands can manipulate their labels, consequently mentioning that the information should not be trusted.

The third section was intended to understand consumers' knowledge of the different types of ecolabels available nowadays in the fashion industry. The first ecolabel analyzed was the "Join Life" label from the fast fashion brand Zara (Figure 11). 67,9% of the participants (91 answers) said they recognized the label, while 32,1% (43 answers) didn't.

Regarding its meaning, 12,7% (17 answers) voted on how this label was describing a non-sustainable garment, 68,6% (92 answers) said it was describing a sustainable garment and 7,5% (10 answers) selected that it was very sustainable. There were also 15 participants (11,2%) who said they did not know what the meaning was.

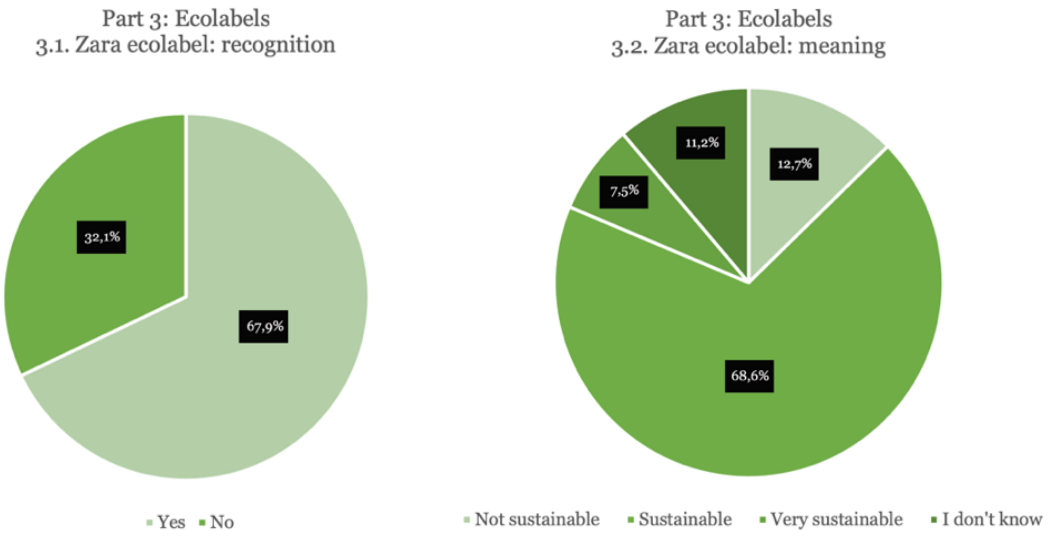

Figure 11. Results of recognition and perceived meaning of Zara's ecolabel, from: Author.

The following label was the EU Ecolabel, which was recognized by 32,1% of the sample (43 participants) and not recognized by 67,9% (91 participants). No one voted on this label being used to describe a non-sustainable garment, but the majority (53,7% or 72 participants) said it was describing a sustainable garment. Furthermore, 28,4% (38 participants) voted on it being very sustainable and 17,9% (24 participants) selected the "I don't know" option.

The GOTS (Global Organic Textile Standard) label was the last one to be analyzed, having been recognized by 47% of the respondents (63 consumers) and not recognized by the majority (53% or 71 consumers). There was only one person (0,7% of responses) who said that the label was describing a non-sustainable garment, while 39,6% (53 responses) voted on the option saying it was describing a sustainable garment and 42,5% (57 responses) said it was a very sustainable one. 23 people (17,2% of responses) said they did not know.

The last question of this section focused on the importance that the several components usually presented on a clothing label have for consumers (Figure 12). Size appeared as the most important component, with a total of 608 points, immediately followed by price with 606 points. Materials and garment composition (523 points) and place of production (453 points) appeared after, while washing instructions were presented as the least important, with 388 points.

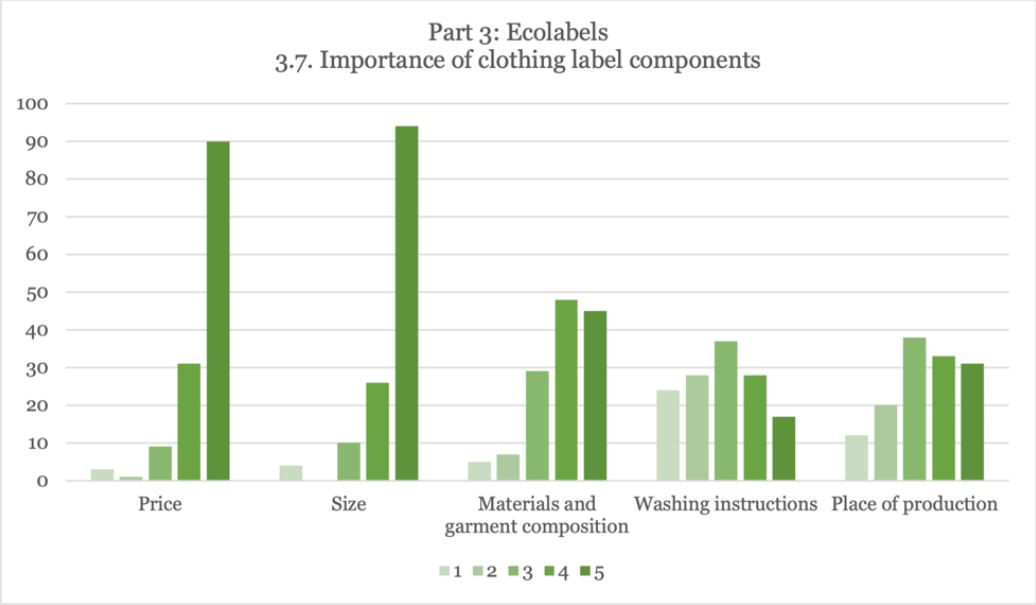

Figure 12. Results of the level of importance of the different clothing label components, from: Author.

The fourth section was composed of 8 comparisons where consumers had to choose which garment they would buy solely based on the information that was being given to them through the garment's label. The first two comparisons focused on analyzing the impact of materials, vocabulary, and place of production on a consumer's fashion choice. In the first case, 42,5% of the respondents (57 consumers) chose the "100% polyester Made in Portugal" label, while 48,5% (65 consumers) preferred the "100% organic cotton Made in Bangladesh" one, and 9% of the answers (12 consumers) were marked as being indifferent. In the second case, 64,9% of the respondents (87 consumers) chose the "100% recycled polyester Made in Portugal" label against 28,4% (38 consumers) who voted for the "100% cotton Made in Bangladesh" option, and 6,7% of the answers (9 consumers) said it was indifferent.

The third and fourth comparisons were intended to understand how the color green would impact the consumers' choices (Figure 13). In the third comparison, both labels declared to be "100% cotton Made in Portugal", but the first one was painted in white - having been chosen by 22,4% of participants (30 answers) - and the second one was painted in green - selected by 34,3% of participants (46 answers). There were also 58 answers (43,3%) voting on the option "Indifferent". For the fourth comparison, the first label was painted in white, and it had written: "100% organic cotton Made in Bangladesh". It was selected by 47% of participants (63 answers). The second label, which was chosen by 41% of participants (55 answers), was painted in green and it described a "100% polyester Made in Portugal" garment. Also, 12% of the answers (16 participants) were indifferent.

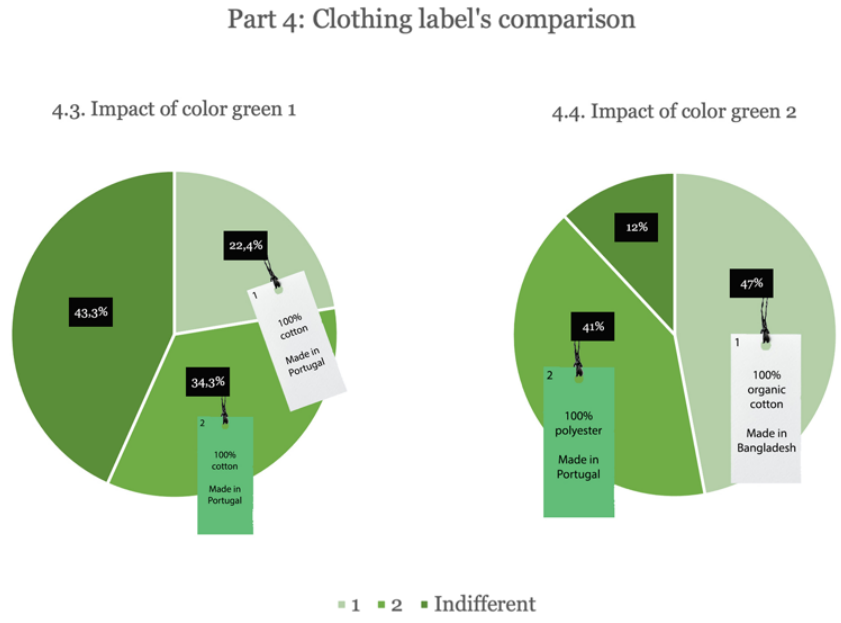

Figure 13. Results of two comparisons regarding the impact of the color green on labels, from: Author.

The following pair of comparisons focused on the impact of certifications (Figure 14). The fifth case compared GOTS-certified organic cotton to organic cotton from the "Care for Fiber" Zara collection. While the first one was selected by 84,3% of consumers (113 responses), the second one was chosen by 5,2% (7 responses), and also 14 consumers (10,5%) said it was indifferent. In the second set, the first option remained as the GOTS certified organic cotton label, which was chosen by 30,6% of consumers (41 responses), but this time compared against an EU Ecolabel, selected by 28,4% of consumers (38 responses). There were also 55 consumers (41%) who said the choice was indifferent.

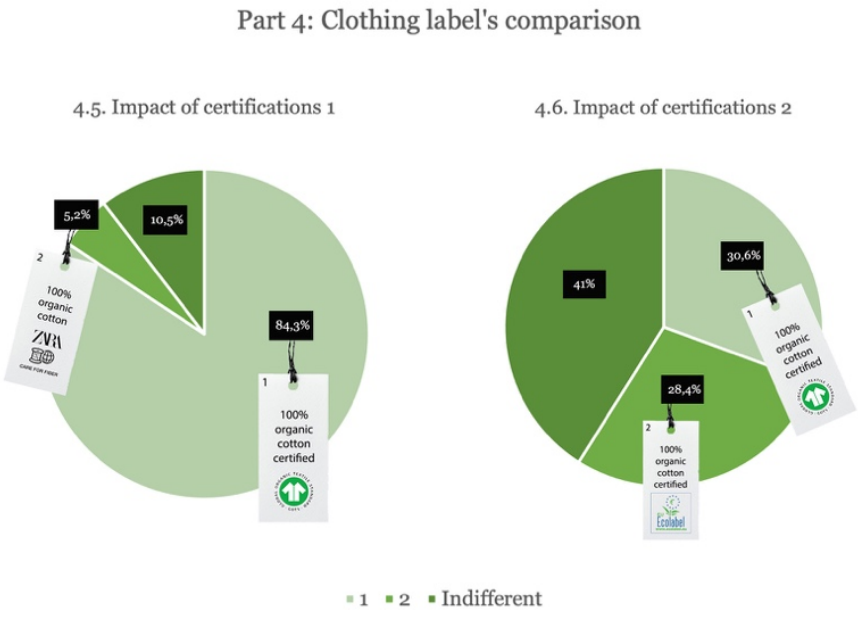

Figure 14. Results of two comparisons regarding the impact of certifications in labels, from: Author.

The last two comparisons were created to analyze the impact of price on consumer choices. Comparison number seven put a "100% organic cotton Made in Portugal" label, priced €40, against a "100% polyester Made in Bangladesh" one, priced €10. In this case, 57,5% of participants (77 answers) chose the first label, while 40,3% (54 answers) preferred the second one, and 2,2% of the answers (3 answers) were marked as indifferent. Comparison number eight was similar, but the first price went down from €40 to €30. This time, 68,7% of participants (92 answers) voted for the €30 label, while 30,6% (41 answers) voted on the €10 one. One participant (0,7%) said to be indifferent.

The fifth section touched on the efficacy of other ecolabels and systems, in order to understand if these could be applied to the fashion industry. The first system analyzed in the survey was the energy efficiency label created by the European Union for evaluating household appliances and other electrical goods. Almost every single respondent (98,5% of the answers or 132 people) recognized this label, and there were 1,5% of the participants (2 people) who did not know what it was.

Consumers evaluated this label from 1 to 5 according to five different factors to understand its efficacy. It was mostly presented as quick to read (608 points) and easy to read (599 points), but it was also easy to understand (585 points) and quick to understand (580 points). The parameters "Impact in product choice" and "Impact in monetary evaluation" were the lowest scores, with 569 and 542 points respectively.

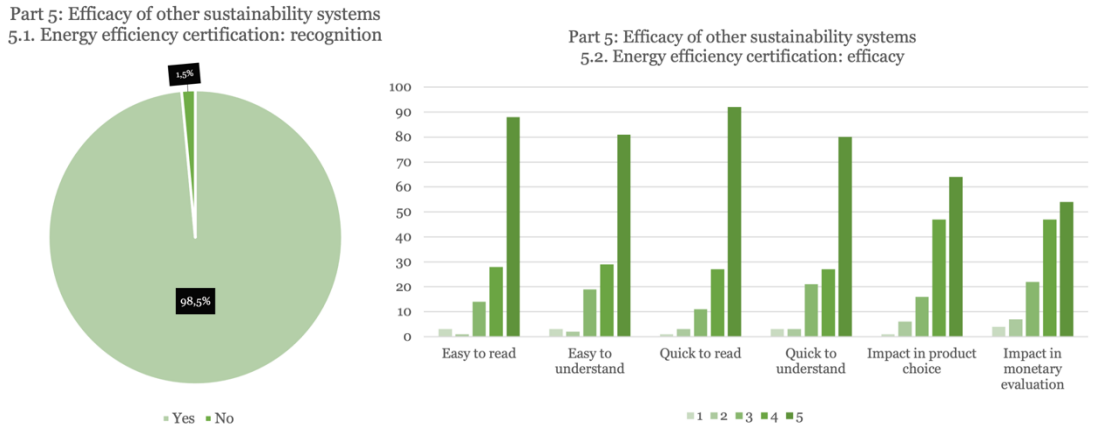

Figure 15. Results of the recognition and efficacy of the energy efficiency certification label, from: Author.

This system was then introduced into the label comparisons that had been done in the last section. In the first case, consumers had to choose between a "100% organic cotton Made in Portugal" label, priced at €40, and with an evaluation of A from the A to G classification scheme, or a "100% polyester Made in Bangladesh" label, priced €10, and with an evaluation of F from the A to G classification scheme. Here, 79,1% of consumers (106 answers) chose the first option, while 19,4% (26 answers) chose the second one, and 2 people (1,5%) marked the choice as indifferent.

In the second case, the comparison remained practically unchanged, with the difference that the first price was lowered from €40 to €30. After this reduction, 85,8% of consumers (115 answers) chose the first option, while 13,5% (18 answers) chose the second one, and 1 person (0,7%) voted indifferently.

The second system analyzed in this survey was the traffic light food label system, more particularly the one used by the Portuguese supermarket chain Continente (Figure 16). This label was recognized by 96,3% of participants (129 consumers) and only 3,7% (5 consumers) did not recognize it. The same components as for the last example were evaluated in order to understand the efficacy of this label system. It was mostly voted as easy to read (512 points) and easy to understand (488 points). Its impact on product choice gathered 472 points, being the third-highest scoring parameter. Quick to read ranked fourth, with 470 points, followed by quick to understand (464 points), and its impact on the monetary evaluation of a product received the lowest score, with 442 points.

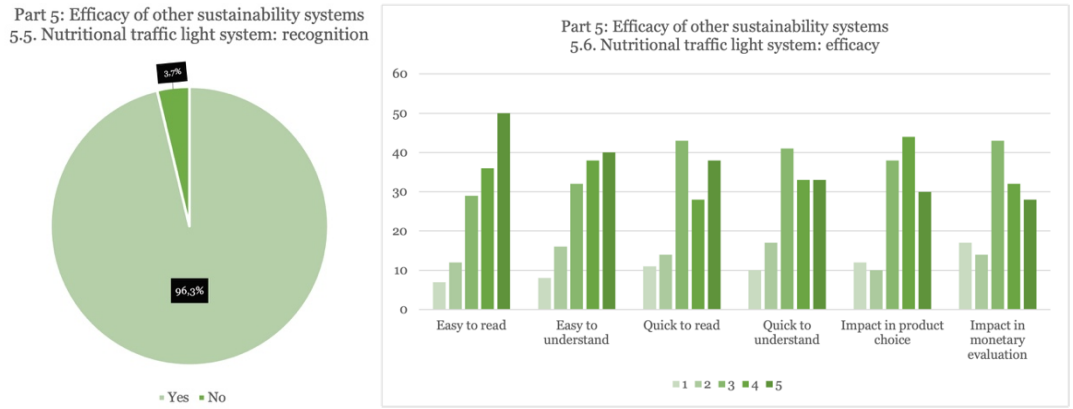

Figure 16. Results of the recognition and efficacy of the nutritional traffic light system, from: Author.

After this, the author presented the same comparisons as per the last example, having only changed the system for evaluation, where it was introduced a colored box system similar to the traffic light food label system. In the first comparison, 76,6% of respondents (104 people) voted for the "100% organic cotton Made in Portugal" label, priced at €40, with mostly green boxes, while 18,7% (25 people) preferred the "100% polyester Made in Bangladesh" label, priced €10, with mostly orange boxes. Also, 3,7% of respondents (5 people) marked the option "Indifferent". The second comparison maintained the same components, with the difference that the first price was lowered to €30. In that case, 85,1% of respondents (114 people) voted for the first label and 11,2% (15 people) voted for the second one. The number of "Indifferent" responses was the same as in the last comparison.

The questionnaire ended with a final comparison question, where consumers were asked to choose between two labels of "100% organic cotton Made in Portugal", priced at €40 (Figure 17). The only thing differentiating them was the scheme that was being applied to describe how sustainable the garment was. The first label followed the energy efficiency scheme, and it was

selected by 53,7% of the participants (72 consumers), while the second label showed a similar system to the one in the traffic light food label, and it was the preferred option of 23,15% of the participants (31 consumers). Finally, 31 consumers (23,15%) voted indifferently.

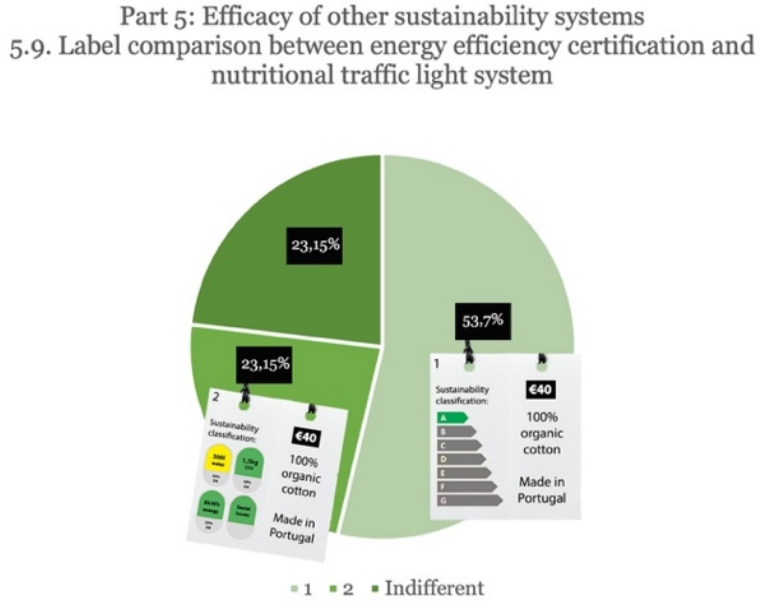

Figure 17. Results of the comparison between the two label systems, from: Author.

7.5.6. Results and hypothesis confirmation

The final section of the methodology will focus on connecting the results obtained from the consumer survey and compare them to the hypotheses crafted for the confirmatory stage.

H1: Consumers consider Type I ecolabels more reliable than Type II.

The first hypothesis touched on the different types of ecolabels defined by the ISO 14024 standard, where Type I characterizes the certifications provided by independent entities and Type II represents ecolabels created by brands. On the questionnaire, Type I ecolabels were portrayed by the GOTS label and the EU Ecolabel, whereas Type II ecolabels took the form of a Zara "Join Life" label. By looking at the third section of the survey, we can quickly realize that the Zara ecolabel was the one most recognized by the participants - 67,9% said they knew what it was, while only 32,1% and 47% declared to recognize the EU Ecolabel and the GOTS label respectively (Figure 18).

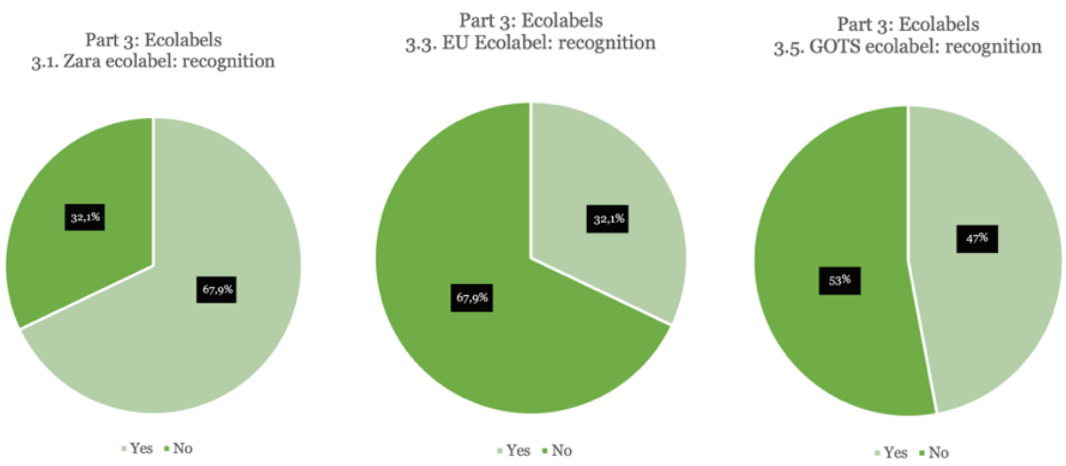

Figure 18. Results of the recognition of Zara's ecolabel, the EU Ecolabel, and the GOTS label, from: Author.

However, the Zara "Join Life" label was the one that ranked the lowest regarding its garment characterization (Figure 19). 17 people said this label belonged to a non-sustainable garment, an option which was only marked by one person regarding the GOTS label and by no one for the European Union certification. On the opposite side of the scale, 7,5% of the respondents claimed that the Zara label was characterizing a very sustainable garment. This percentage grew by 20,9 percentage points for the EU Ecolabel and 35 percentage points for the GOTS label.

Furthermore, in section four of the questionnaire, consumers were able to compare the different types of ecolabels. 84,3% of the participants chose a GOTS certification label, and 5,2% selected the Zara "Join Life" label. With this in mind, it has been proven that consumers consider Type I labels more reliable than their Type II counterparts, thereby confirming H1.

Figure 19. Results of the perceived meaning of Zara's ecolabel, the EU Ecolabel, and the GOTS label, from: Author.

H1.1.: Among all independent entities for sustainable fashion certification, the European Union is the most trusted by consumers.

Among the organizations that provide independent certifications for the fashion industry, the European Union came up several times during the author's research as an example of an organization seen as reliable by consumers. The survey put this into perspective by comparing the impact of the EU Ecolabel against one of a private organization, which, in this case, turned out to be the Global Organic Textile Standard (GOTS). The third section immediately showed that consumers were more familiarized with the GOTS label (47%) than with the EU Ecolabel (32,1%) and they overall viewed the first label as more likely to characterize very sustainable garments (42,5% marked that option for the GOTS label, while only 28,4% selected it regarding the European Union label). A final comparison was set up in the fourth section of the questionnaire, where consumers were able to choose between labels of the different entities. There, the results came out very divided, with 30,6% choosing the GOTS label, 28,4% the EU Ecolabel, and, lastly, 41% marking the choice as indifferent. In the end, we cannot assume that the EU Ecolabel is more

trusted by consumers, since it mostly scores similar (or lower) to other Type I ecolabels and, in this case, more particularly the GOTS label.

H2: The social dimension (place of production) has more impact than the environmental one (materials) for fashion consumers.

Place of production and garment composition/materials are two factors that are almost always detailed in clothing labels nowadays. During the exploratory phase of this research, notably, the interviews with fashion experts and the focus group with consumers, the place of production seemed to be of the highest importance to the general audience. And indeed that was shown immediately in the second section of the questionnaire, where consumers were confronted with a clothing comparison that only accounted for those two types of information. When asked about the reasons that had guided their choice, 37 people mentioned how having Portugal as the place of production was their main guideline, while only 28 people mentioned materials (Figure 20).

Figure 20. Quantitative results of the open question regarding sustainability justification, from: Author.

However, the same did not translate into the third section. When asked to choose between a garment made in Portugal with the composition of 100% polyester and a garment made in Bangladesh, with 100% organic cotton, 42,5% selected the first option and 48,5% selected the second one. Since Bangladesh has – as many of the consumers explained in the open question of the second section – a negative connotation as a place of production for fashion, this leads us to assume that materials were guiding consumers which chose the second option, also because natural materials, like cotton, were described in that same open question as more sustainable than synthetic materials (here represented by polyester). A second comparison made the confirmation of this hypothesis even more inconclusive because 64,9% of the participants preferred a 100% recycled polyester garment made in Portugal against a 100% cotton made in Bangladesh one, which was only selected by 28,4%. This means that we cannot assume either that the place of

production or the garment's composition is always the most relevant, since the value of each component changes according to the situation which is placed in front of the consumer. There is no defined guideline, only an evaluation of each specific case.

H2.1: "Organic" and "recycled" have a positive effect on consumers when analyzing a garment's composition.

Inside the world of materials, there are specific words that tend to make consumers assume that a garment is more sustainable than its counterparts; since "organic" and "recycled" are the most common, the author used those two words in several comparisons to understand their impact. And already in the second section, it was possible to see it. After choosing which label belonged to the most sustainable garment, 20 people used the organic cotton factor as the main justification for their choice, followed by 8 people who did the same regarding recycled materials (in this case, polyester). But this was even clearer in the fourth section, where the label with the most votes in the first two comparisons was always the one with the words "organic" or "recycled" in them (Figure 21). In the first case, it was the garment made in Bangladesh with 100% organic cotton (collecting 48,5% of the votes, while its counterpart remained at 42,5%) and, in the second case, it was the garment made in Portugal with 100% recycled polyester (which was selected by 64,9% of the respondents against 28,4% who voted for 100% cotton). Therefore, these two words' positive impact on the consumers' choices was perfectly visible.

Figure 21. Results of two comparisons regarding the impact of materials and place of production in labels, from: Author.

H3: Visual cues are the best tool to convey information on fashion ecolabels.

The color green and label systems were the types of visual cues analyzed in the consumer survey. The analysis of the following two hypotheses will demonstrate the efficacy of visual cues.

H3.1: The color green is associated with sustainability, thereby it impacts consumers' buying decisions regarding fashion.

One of the biggest questions which rose from the theoretical framework was regarding the impact of the color green on consumers' buying habits. This was because, even though the color green was typically associated with sustainability, it was also starting to be associated with greenwashing, due to being used as an "easy-fix" when it comes to portraying a more sustainable image. To settle this question, two comparisons in the fourth section of the survey touched on the impact of this particular visual cue. In the first case, there were two very similar clothing labels, with the exact same information, but the first was painted in white and the second in green. Even though more consumers chose the green label over the white one, the winning option was "Indifferent", voted by 43,3% of consumers (9 percentage points higher than the votes on the green label). The second case showed once again that the color green cannot really impact the consumer's decision, since the label painted in green was not selected by the majority. This was probably because that same label pertained to a garment composed of 100% polyester, meaning that, although the color may have a small impact, it's not capable of shifting entirely a consumer's perspective.

H3.2: Label systems like the energy efficiency certification and the nutritional traffic light are effective tools to increase sustainable fashion consumption.

Besides the color green, another visual cue was analyzed in the consumer survey: label systems. Both the energy efficiency certification as well as the nutritional traffic light label were recognized by a big majority of respondents (98,5% and 96,3%, respectively) and scored really high regarding their efficacy. For example, the energy efficiency certification scored 608 points (out of 670) in the parameter "quick to read" and 599 in "easy to read", while the nutritional traffic light label gathered 512 points (out of 670) in the parameter "easy to read" and 488 in "easy to understand". However, their efficacy was mostly proven by the results of the comparisons presented in the following sections of the questionnaire. In the fourth section, when choosing between a garment made in Portugal, composed of 100% cotton, priced at €40, and a garment made in Bangladesh, composed of 100% polyester, priced at €10, 50,7% of respondents selected the first option and 40,3% the second one (Figure 22).

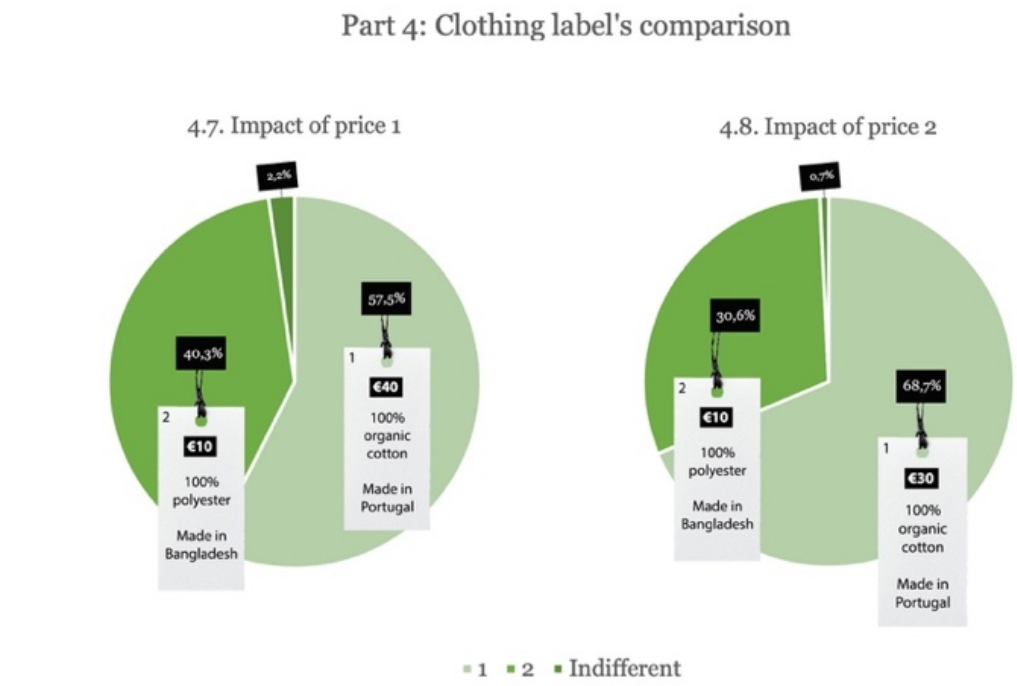

Figure 22. Results of two comparisons regarding the impact of price on labels, from: Author.

However, in the fifth section, the same comparison but with the presence of an energy efficiency certification system (which evaluated the first garment with an A and the second one with an F), 79,1% of respondents selected the first option (Figure 23), which means that 29 people changed their choice because of the added label system.

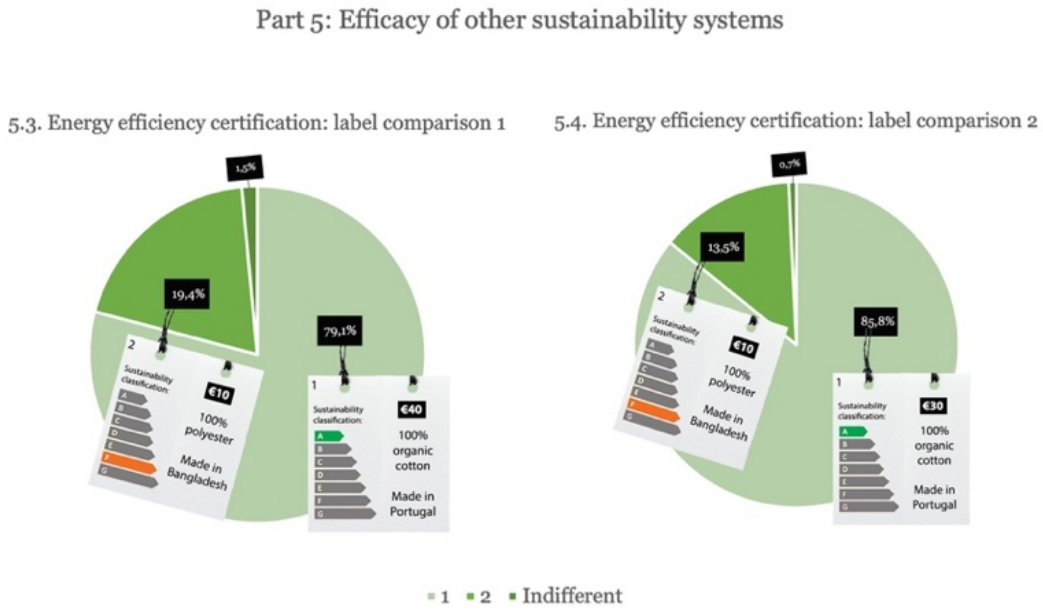

Figure 23. Results of two comparisons regarding the impact of price in labels with the energy efficiency system, from: Author.

A similar thing happened with the second label system, the nutritional traffic light label. When this label was added to the regular clothing label, 76,6% chose the first option (Figure 24), meaning that 27 participants changed their choice compared to when there was no labeling system at all, now opting for the most sustainable garment. This means that both tools effectively impacted consumers' choices, by making more people choose the most sustainable option.

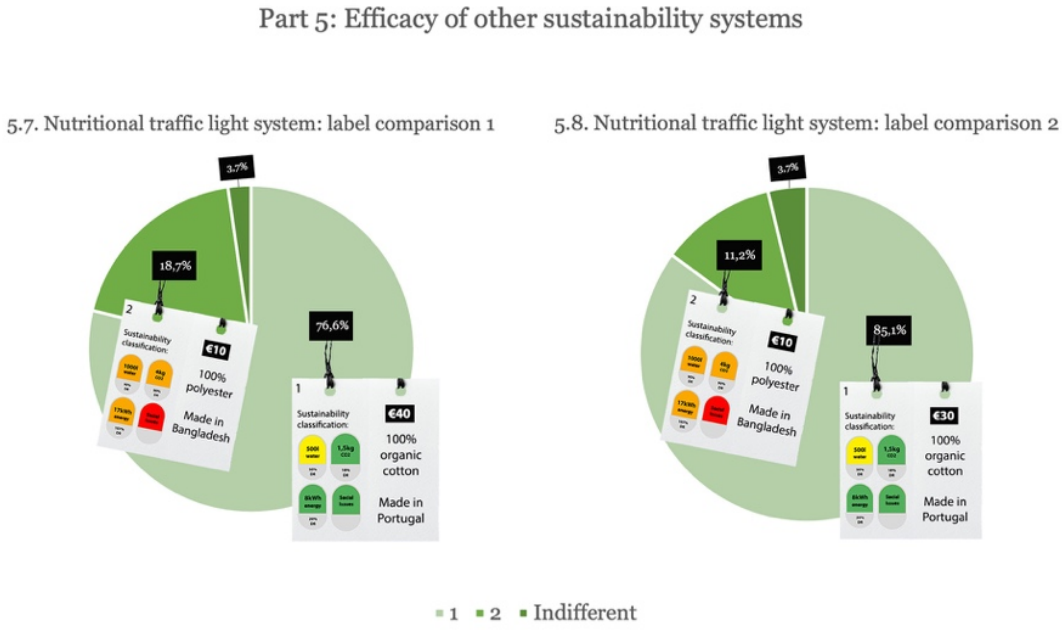

Figure 24. Results of two comparisons regarding the impact of price in labels with the nutritional traffic light system, from: Author.

H4: Ecolabels help increase sustainable fashion consumption in all consumers.

Regardless of the price and level of education that consumers have on the topic of sustainable fashion, the overall results of the consumer survey showed that generally speaking, the more information is provided regarding the sustainability of a garment, the more consumers will prefer that garment over its not so sustainable counterpart. However, there are some specificities that need to be considered in the confirmation of this hypothesis, namely that Type I ecolabels help increase sustainable fashion consumption more than Type II entities, and also that some components do not work separately - for example, the simple introduction of the color green may not have a big impact on the consumers' decisions, but when it is part of an evaluation system, it is a more effective tool for consumers than vocabulary, for example. Even so, an overview of the results and previous hypotheses confirms that ecolabels help increase sustainable fashion consumption in all consumers.

H4.1: Ecolabels are more effective in already eco-conscious consumers.

Since it was difficult to analyze the level of education of consumers, the author looked for subtle clues in the first section that would help define the participant's knowledge of sustainable fashion.

These ended up being the means through which consumers obtained their knowledge on this topic (books and magazines, documentaries, and academic resources were considered the most legitimate means of information) (Figure 25), and also how they classified each component of the fashion production chain according to their impact on fashion.

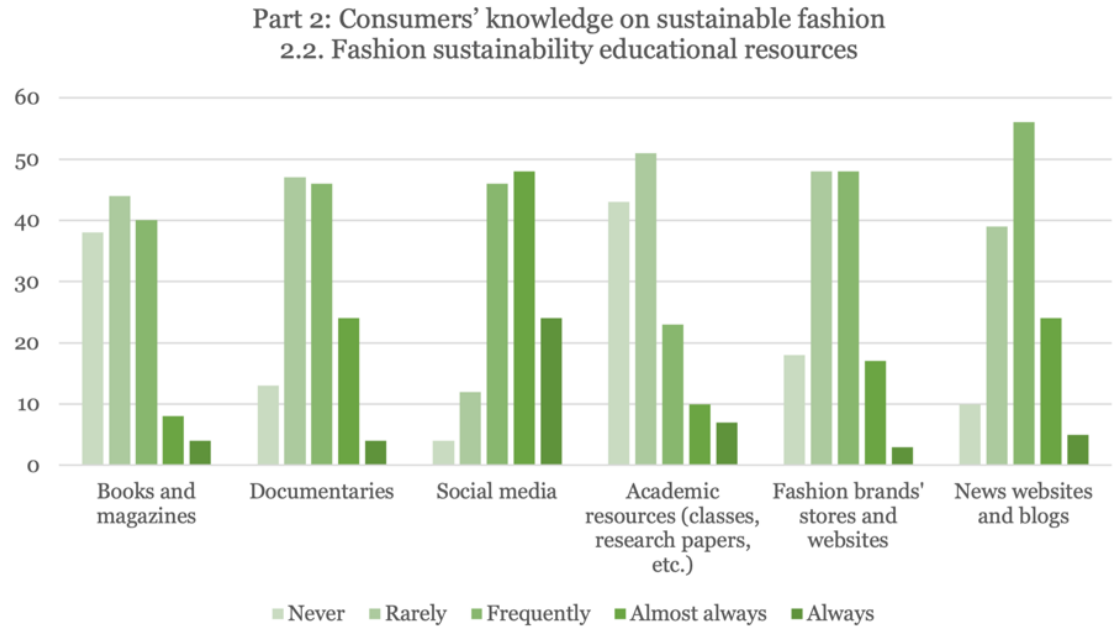

Figure 25. Results of the resources used to obtain knowledge on fashion sustainability, from: Author.

Firstly, the author analyzed the group of participants who had changed their decision on which garment they would buy after introducing label systems. Out of the 29 people who shifted their buying behavior in the fifth section, with the introduction of the energy efficiency certification system, only 20,7% (6 participants) met the criteria to be considered as having a high level of education on the topic of sustainable fashion. This means that the big majority of people who were impacted by ecolabels were actually perceived as less eco-conscious consumers. In fact, the author analyzed the choices of the people who claimed to always get their sustainable fashion knowledge from books, magazines, or academic resources. Among those 9 answers, 7 (77,8%) kept choosing the most sustainable garment throughout all comparisons, meaning that the presence of different visual cues or even price did not impact their choice. Overall, we might say that ecolabels are more effective in consumers who know less about sustainable fashion since consumers that are already characterized as eco-conscious do not need an added incentive and will always try to make the most sustainable choice.

H4.2: Ecolabels are less effective in price-sensitive consumers.

Price is one of the most important components of a clothing label. For the consumers who took part in the present survey, price ranked second in terms of importance immediately after size (606 points and 608 points respectively, out of 670). We already saw that there were 29 answers where

consumers shifted their choice from the lowest-priced garment (or from seeing the choice as indifferent) to the highest-priced and most sustainable garment thanks to the presence of ecolabeling systems. However, there were still 26 people who kept choosing the lowest-priced garment, no matter how the clothing label was portrayed. Price sensitivity can also be seen in the cases where the most sustainable garment's price was changed from €40 to €30. When there were no ecolabeling systems or visual cues, this change saw an increase in 11,2 percentage points of people choosing the most sustainable garment. When there were ecolabeling systems present, the increase was only 6,1 or 8,5 percentage points, depending on the type of system. This confirms the hypothesis that ecolabels are still effective in price-sensitive consumers but are less effective in this group compared to the general audience.

Hypothesis	**Was it confirmed?**	**Explanation**
H1	Yes	84,3% of consumers trusted a Type I label, like the GOTS ecolabel, against 5,2% who preferred a Type II label, represented by Zara.
H1.1	No	Even though the GOTS label scored slightly better than the EU Ecolabel, the answers came out too divided to say that one is more trusted than the other.
H2	No	While the place of production was more important in some cases, materials were more important in others, so we cannot assume that there is always one that has more value than the other. It varies according to the situation.
H2.1	Yes	Labels with the words "organic" or "recycled" were almost always chosen by the majority of consumers.
H3	Yes	Although the color green may not have shown the full potential of visual cues, label systems did (and demonstrated how the color green can be effectively used).
H3.1	No	When comparing two clothing labels with the same information, but one painted in white, and the other in green, 43,3% of consumers said the choice was indifferent.

H3.2	Yes	For both labels, the number of consumers who chose the most sustainable garment went up at least 25 percentage points when these new systems were added to a regular clothing label.
H4	Yes	An overview of the results and previous hypotheses confirms that ecolabels help increase sustainable fashion consumption in all consumers.
H4.1	No	Only 20,7% of people who changed their choice to a more sustainable one thanks to ecolabeling systems were perceived as eco-conscious. The participants with higher knowledge were always choosing the most sustainable option, regardless of how the label was presented.
H4.2	Yes	Even though 29 people shifted their buying decisions thanks to ecolabels, 26 kept choosing the lowest priced option.

Table 9. Summary of the performance of each hypothesis after the consumer survey, from: Author.

Chapter 8: Discussion

In a nutshell, this research was divided into two main stages. One was mostly exploratory, which means that the author used qualitative methods to understand more about the impact of ecolabels in the fashion industry, and the other was confirmatory, where that knowledge was tested by applying quantitative methods.

In the exploratory stage, after having gathered information from relevant authors and studies in the literature review, the author interviewed four industry experts and conducted a focus group with consumers from distinct backgrounds. The confirmatory stage was based on a consumer survey, which was created to gather enough data capable of confirming (or denying) the hypotheses that had resulted from the knowledge obtained from previous methods. The results from both stages - exploratory and confirmatory - will now be briefly described to provide a general overview.

8.1. Exploratory stage

The exploratory research stage opened with four interviews with fashion experts. The interviews' general guide was divided into five topics: sustainability communication (in general), sustainability communication in brick-and-mortar stores, ecolabels, the impact of ecolabels on

consumer behavior, and, lastly, the European Union's ecolabeling strategy -, and each fashion/sustainability professional answered to the questions connected to their specific field of knowledge. At the end of the four interviews, the author gathered relevant information for all five topics.

Regarding general sustainability communication, one of the main take-aways was that most fashion brands are now benefiting from promoting their sustainable initiatives since it has become a selling point. Among the several types of communication, brands tend to focus on the use of vocabulary, highlighting components like organic or recycled materials and well-perceived places of production - for example, Portugal is largely associated with fashion sustainability. The garment composition seems to be the most advertised component for creating a sustainable image, but brands are also betting on communication fields, such as packaging and store consumption. Regarding sustainability communication in brick-and-mortar stores, experts mostly explained how it is harder to transmit information to consumers with the few tools that are given in a physical retail space. Even if brands find a way to communicate their sustainable efforts, seeing that information is not the same as understanding it, so, generally speaking, sellers feel like they need to try to justify things like high prices to consumers because there still seems to be a vast lack of education on this topic.

All four interviews touched on the general topic of ecolabels and all four interviewees described ecolabels according to their Type I definition of the ISO 14024 standards - this means that, in the industry, only independent organizations are considered qualified to certify the sustainability of a garment. Although several experts declared that, at the present moment, there is a very diverse set of sustainability certifications for fashion, covering different fields of sustainability, the environmental pillar of the concept is still the most sought after by brands. Ecolabels, however, are now able to express sustainability through very different systems: some brands choose to create clothing labels out of biodegradable materials, while others rely on systems and imagery to make their comprehension easier for consumers. Some of these examples are being developed by the brands themselves, since they believe that legislation is about to come in this field, which may not be so far off from the truth. The European Union, for instance, may be developing an evaluation system for clothing similar to the one used to communicate energy efficiency in household goods.

Although there might be some problems with current examples of ecolabels, all the interviewed industry experts believe that they are a way to provide truthful and reliable information that will empower consumers and their choices. Ecolabels could act together with legislation, working as an extra layer of certification and consumer safety. However, for that to actually work, governments and institutions need to invest more in educating their citizens on matters of sustainability. The fact that a lot of consumers do not feel impacted by independent certifications on clothing labels may be associated with this lack of knowledge; therefore, working on consumer

education should be the next big step for optimizing the potential of ecolabels in the fashion industry.

The last paragraphs covered the main results of the interviews with fashion experts. After that, the author focused on understanding the viewpoint of consumers, opting for a focus group with ten participants from different age groups and occupations as a way to represent a wider range of the wide audience of fashion brands. The topics raised in the interviews were adapted into questions for consumers, having been posed with the intent to generate a discussion that would make consumers pinpoint their shopping habits and how they are impacted by ecolabels in fashion stores. The results will now be described and compared to the interview section of the exploratory stage.

The first set of questions posed to the focus group was intended to understand their level of knowledge of sustainable fashion. In a self-evaluation stage, most participants considered their knowledge to be average. While almost all consumers could describe the concept of sustainable fashion, they tended to do it by referring to the environmental side of the term. Furthermore, a big majority said they did not buy sustainable clothing, but that they were completely aware of that, giving the price and generational gaps as the two main explanations.

When asked about the concept of ecolabels, however, no participant was quite able to describe it. On the matter of clothing labels, consumers were said to mainly look for components such as price and the garment composition, while the place of production was less important for consumers, followed by the least relevant factor of them all: the washing instructions. Even after having seen several examples of current ecolabels, few of them were recognized by the focus group members. Among all the independent certifications portrayed, the Good on You website system was the one that seemed to perform the worst with consumers, since they were associating the imagery with satisfaction inquiries. The EU Ecolabel, on the other hand, was the one described as the most reliable. However, other systems seemed to be widely accepted by the audience, even though these were not examples from the fashion industry. We are talking about the systems used in the energy efficiency certification labels for household goods and in nutritional labels, mainly the traffic light system. Consumers showed some curiosity regarding how that could be applied to fashion.

The last section of the focus group enabled the author to understand more about the impact of ecolabels on consumers through comparisons, where the participants were asked which garment they would buy solely based on the information provided to them. The results showed that place of production (in this case, Portugal) seemed to be the most relevant factor when making a choice, even though materials were also very important – natural materials were always prioritized. Still, on the topic of garment composition, participants always preferred when materials were certified by independent organizations, despite not knowing what each organization represented. Other factors were tested, like the color green, which enabled an association with sustainability but did not represent a decisive factor for consumers, while, on the opposite side, applying systems like the energy efficiency certification seemed to spark interest once again from the participants. The

only factor which was not fully tested was the price, because, even though it was a part of the label comparisons, consumers seem to be affected by the social desirability bias (Fisher, 1993), which made participants more prone to choose the most socially acceptable option, and not the one they would select on a normal scenario.

8.2. Confirmatory stage

The confirmatory stage, which was carried out through a consumer survey with 134 participants, was essential to gather data on the impact of ecolabels on fashion consumers. After the information obtained from qualitative methods, such as the literature review, exploratory interviews, and a focus group, there were ten hypotheses that stood out from the research stage, uniting the six different variables that had been previously presented regarding the efficacy of ecolabels and their role on a consumer's shopping decision. The responses obtained from the questionnaire enabled the author to confirm or deny those hypotheses.

Overall, the majority of the propositions were confirmed by the results of the questionnaire. Six out of the ten hypotheses proved to be true, while four were not confirmed, and the analysis of each case will now be performed according to the order in which they were presented. Starting from the first two hypotheses (H1 and H1.1), these were based on the variable of certifications (V3) and focused on the role of independent entities in the fashion ecolabeling industry. H1 was verified, proving that consumers find Type I ecolabels – the independent certifications – more reliable that Type II ecolabels – the brands' certifications –, since 84,3% of consumers preferred a garment certified by GOTS over 5,2% who selected the garment certified by Zara's eco-friendly label. The remaining 14 responses voted indifferently. However, hypothesis 1.1., which created a hierarchy of the different types of independent labels, was not confirmed by the survey, since consumers were too divided to be able to demonstrate if the European Union was considered the most reliable organization.

Hypotheses 2 and 2.1 were based on the second variable - vocabulary - and, once again, only one of these was verified in the survey. Even though the questionnaire was able to show that using words like "organic" or "recycled" to describe a garment's composition tends to make consumers more prone to buy the most sustainable option (H2.1), thanks to the fact that participants were regularly choosing the labels portraying one of these words, the survey did not demonstrate if materials, in general, were less important to consumers than the place of production (H2). As a matter of fact, there seemed to be no particular order of hierarchy between these two pieces of information since consumers were shaping distinct responses and patterns of thought for each case.

The third set of hypotheses (H3, H3.1, and H3.2) followed the two types of imagery in ecolabels that were divided into variable 4 (colors) and variable 5 (evaluation schemes). Beginning with H3.1., this hypothesis intended to understand the impact of the color green - a color typically

associated with sustainability - on the consumers' fashion choices. After analyzing the final data, the author concluded that this visual cue did not have a relevant impact on the general audience. For example, when choosing between two clothing labels portraying the same information, but one is painted in white and the other in green, 43,3% of respondents classified the choice as indifferent. However, the color green was the only visual component whose impact was considered irrelevant. The presence of evaluation schemes, pertaining to H3.2, made the number of consumers choosing the most sustainable garment increase by at least 25 percentage points. These systems, like the ones similar to the energy efficiency certification of the European Union for household goods or the nutritional traffic light label, were shown to be more effective to increase sustainable fashion consumption than vocabulary, for example, which meant that hypothesis 3 was also confirmed since visual components were demonstrated to be a very effective means of communication, even though the results of H3.1 had not been sufficient.

Lastly, hypotheses 4, 4.1, and 4.2 divided the impact of ecolabels on the different types of consumers. On the one hand, H4.1 associated the performance of fashion ecolabels with the consumer's level of knowledge on sustainability (variable 1), by assuming that the more eco-conscious consumers were, the more impacted they would be by ecolabels. Nonetheless, this was not what was verified in the questionnaire. For instance, among the 29 participants who changed their shopping decision after introducing sustainability evaluation schemes, only 6 of them (around 21%) met the criteria for being considered eco-conscious consumers. This means that ecolabels were mostly impacting those consumers who were knowledgeable on matters of sustainable fashion. On the other hand, H4.2 analyzed price sensitivity, explaining that the more consumers prioritized the price of a garment, the less ecolabels would impact their choices - and this hypothesis was confirmed. Even though there were 29 consumers shifting their choice towards sustainability thanks to ecolabeling schemes, there were still at least 26 consumers who kept choosing the lowest priced option, no matter how ecolabels were portrayed. However, an overview of the survey's results makes it easily understandable that ecolabels can be effective for increasing sustainable fashion consumption in the wider group of consumers, thereby confirming hypothesis 4.

Conclusion

"Can ecolabels help increase sustainable consumption in brick-and-mortar fashion stores?" This was the question with which the author initiated this dissertation, and, at this stage, we can say that there is enough evidence to respond affirmatively. Yes, ecolabels can help increase sustainable consumption in brick-and-mortar fashion stores, but there are some factors that need to be considered to maximize their efficacy.

First of all, there needs to be a unified definition for the concept of ecolabels. Nowadays, several types of clothing labels and certifications can be found under this umbrella word; however, industry experts demonstrated that this term should be only used for describing independent certifications provided by third-party entities, therefore not covering the sustainable labels created by brands to use in their own garments. This would benefit consumers not only by decreasing the extensive number of current ecolabels - and, consequently, being easier to understand which organization certifies what - but also by contributing to minimizing greenwashing attempts.

Secondly, it is essential to introduce several modifications to current clothing labels from brick-and-mortar stores because these labels are obsolete, particularly in comparison with what brands can communicate to their consumers online. For example, defining a place of production has no necessary meaning anymore because the lack of legislation on sustainable fashion communication enables that, in some cases. It takes only a button to be sewed in Portugal for that garment's place of production to qualify as Portugal (despite 99% of the garment having been made in Bangladesh, for instance). This is just one example of the many reasons that can explain why current clothing labels do not transmit relevant information to consumers. So, how could this be changed? During this research, we have proven the efficacy of communicating sustainability to consumers through visual schemes and systems. The author believes that this should be the future of clothing labels in brick-and-mortar stores. Some brands have been trying to fix the lack of information issue by adding QR codes to labels with more data about the garment. Nonetheless, we know that the majority of consumers will not take the time to read the information that cannot be easily and quickly accessed. This is why visual systems could fill this gap: they are not only quick to read and understand, but they are also easy to read and understand. Consumers do not need a lot of training to understand that a green evaluation of "A" is positive while a red evaluation of "G" is negative. Because of that, visual schemes and systems should be considered a part of the future of ecolabeling in the fashion industry.

Lastly, as was mentioned by the interviewed professionals and later verified both in the focus group and on the consumer survey, one of the best tools that can be used to increase sustainable fashion consumption is education. Without educated consumers, there will always be barriers to how much ecolabels can do to increase sustainable shopping habits. Education would be the key to empowering consumers in their choices since they would be able to interpret all the information that would be provided to them and make the best decision out of it. Education would be the key

to pressuring brands into making more sustainable products, as consumers would know how and what to demand from them. Education would be the key to helping overcome price sensitivity, namely in middle-income families with the monetary means to support smaller brands with a more artisanal and sustainable production but are still unaware of the benefits that come with it. Education would be the key to helping ecolabels help increase sustainable fashion consumption.

All in all, this research gathered important evidence to understand the impact that ecolabels can have in providing consumers with the opportunity to make informed and conscious decisions, which will lead to a more informed and conscious fashion industry.

Study limitations

Sustainability is a subject where people tend to see a right and a wrong answer. Therefore, any research on this matter may easily be affected by the social desirability bias (Fisher, 1993). As previously detailed, this concept explains why participants, during this investigation, tended to choose the most sustainable garment, even when it was not the one they would buy in a day-to-day scenario. Particularly in situations where people are easily identified – in this investigation, we had that on the focus group stage – they will be more prone to opt for the answers that are widely perceived as the most correct; for example, choosing the highest-priced item because it typically is the most sustainable one. The social desirability bias may have impacted some of the results obtained in the present research, mostly on the focus group, but perhaps also in the consumer survey, even though the answers were anonymous.

The second limitation that was presented to the author came during the exploratory interviews stage. When creating the initial plan for this dissertation, there was the intention of having one additional step of ecolabel testing in a real-life scenario. The author would have liked to observe how consumers interact with ecolabels, in a brick-and-mortar store, after having created a prototype with the changes that brought the biggest results during the consumer survey. Nonetheless, this action was discouraged by one of the interviewees, whose view was that the main components that make up for the success of an ecolabel could not be mimicked under the resources of this dissertation – and we could get into the risk of spreading misinformation to consumers. For example, we have said that ecolabels should belong to an independent authority, therefore, not having the name of an independent organization associated with our label testing would diminish its efficacy (creating a fake organization was not an option due to the risk of spreading misinformation). Also, we had no resources or tools to evaluate a garment's sustainability, so there was no reliable information to be communicated. In a nutshell, the author preferred not to perform this type of test in the present research.

Furthermore, other limitations pertain to the type and size of the studied sample, particularly, in the consumer survey. A sample of 134 participants is a small sample, alongside the fact that, in the sociodemographic parameter of gender, the sample was dominated by female participants and

was lacking the input of the male gender. It is also important to highlight that, during the focus group stage and consumer survey, the author gathered the consumers' answers from the Portuguese market. While the literature review compiled studies mostly tailored to international audiences, the results of this particular dissertation should be referred following the Portuguese market trends.

Finally, after having consulted several studies and dissertations, the author noticed that it is common to mention time as an important limitation. However, even though there is always more one could do with more time, in this particular dissertation, that was not exactly how time posed a problem. Time was, and still is, a problem, because we, as a society, are running out of it. We do not have centuries or decades to create a more sustainable industry. We probably have no more than a few years to find quick and easy solutions that will have a big impact on our planet. Therefore, the real limitation comes when we postpone the work that needs to be done in terms of changing the course of the fashion industry. It comes when we use our busy schedules as an excuse to continue our routines without being conscious of our habits. And, especially, time is a limitation when we use it as an excuse to not contribute to important works that can be the basis for a more sustainable fashion industry, just because they are being created by students and not professionals of the industry. Time is a problem because we are running out of it, but we should use the time we have left to bet on those shaping our industry's future.

Further studies

Since ecolabels in fashion industry are a recent topic, a lot still can be done for further development of these studies.

To begin with, it would be important to broaden the present research to wider consumer markets to see if there are any relevant differences in the results. For example, it could be interesting to test the impact on ecolabels in the behavior of Northern European consumers, since they are generally believed to be more sustainable consumers overall, and then compare it to the results of Southern European consumers, for example, from Italy or Greece. This would help to understand if organizations like the European Union need to adopt distinct ecolabeling strategies according to the countries they are targeted to.

Furthermore, another component that was left to develop was the application of several certification systems in the fashion industry. In this research, we took the case of the energy efficiency certification and nutritional traffic light label and tried to apply it to the specificities of clothing generally. Nonetheless, there could be a lot of benefits in actually developing a specific rating system, based on these two previously demonstrated ideas, that could encompass all the particularities of evaluating a garment's sustainability.

Lastly, ecolabels work on a two-party system. Firstly, there needs to be a way to evaluate how sustainable a garment really is, and only after will we have the data to communicate it to

consumers. Since this dissertation only focuses on the latter, further investigations could focus on creating a measuring system that would work with the communication tools that were proven effective in this research.

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Annex

Annex 1: Interview guide

Part 1: Sustainability communication

1. Which characteristics do you choose to highlight when defining a garment/clothing collection as sustainable to general consumers?
2. Which characteristics do you choose to highlight when defining a garment/clothing collection as sustainable to fashion experts?
3. Among the characteristic mentioned in the last question, are there any that you find relevant as an expert, but you believe do not have the same importance to the general consumer? If so, which one(s)?
4. Can you remember any information that you find relevant to "justify" the sustainability of a fashion product that is generally not communicated by brands (for instance, in press releases)? If so, could you give an example?

Part 2: Sustainability communication in brick-and-mortar stores

1. How do you shape your methods of communicating sustainable fashion according to the specific needs of both online and physical retail points?
2. In the physical space, which tools do you use to communicate sustainable features to your consumers?
3. Which flaws or difficulties related to communication can be found in physical retail spaces? And which mechanisms have you been adopting to fight against them?

Part 3: Ecolabels

1. What do you consider to be an ecolabel and can you give current and practical examples of this concept?
2. From the given examples, could you highlight one ecolabel that you consider to be a good example - in terms of methods, performance, and how information is conveyed to consumers - and another that you consider being a poor example, explaining why?
3. What are the main advantages of using ecolabels in sustainable fashion products for consumers?
4. What are the main problems related to current ecolabels?

Part 4: Ecolabels and consumer behavior

1. From examples gathered in your professional experience, how do you feel that ecolabels impact consumer behavior during the shopping process?
2. Which characteristics mentioned on an ecolabel are more "attractive" to consumers?

3. On the contrary, which information do you see as superfluous during the consumer's shopping process?
4. How can ecolabels contribute to increasing sustainable fashion consumption?

Part 5: European Union's ecolabeling strategy

1. What are the main advantages and disadvantages of only targeting only the environmental or the social dimension of sustainability in an ecolabel? Is it viable to find a solution for an ecolabel covering both?
2. How has the European Union been working to communicate the PEF Guide's findings to the general public? Could that communication be associated with the work conducted on the EU Ecolabel?
3. What are your thoughts on the A to E certification system that we see on nutritional labels and energy efficiency schemes? Is it something that we could see applied to the fashion industry in the near future?

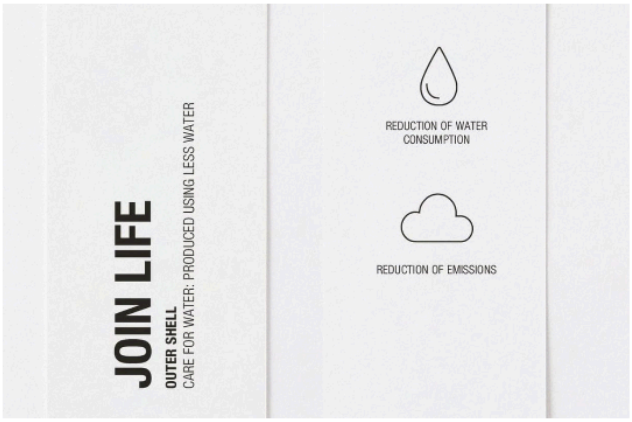
Annex 2: Focus group guide

Part 1: Level of knowledge on fashion sustainability

1. How would you self-evaluate your knowledge of sustainable fashion?
2. What is sustainable fashion?
    a. What is green fashion?
    b. What is ethical fashion?
3. Do you feel as if you've been buying sustainable fashion? If so, in which stores do you do it? And if not, why don't you do it?

Part 2: Ecolabels

1. What is an ecolabel?
2. Do you recognize this ecolabel?



3. Do you recognize this ecolabel?

4. Do you recognize this ecolabel?

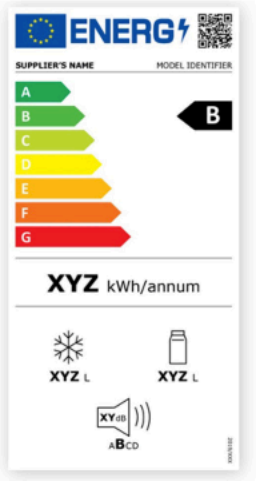
5. Which type of information is usually present on clothing labels?
6. When you read a fashion label, which type of information are you usually looking for?
7. When you read a fashion label, which type of information do you ignore?
8. Is there any type of information that is usually not present on a clothing label but that you wish would be there?

Part 3: The efficacy of current ecolabeling schemes

1. Observe this label:

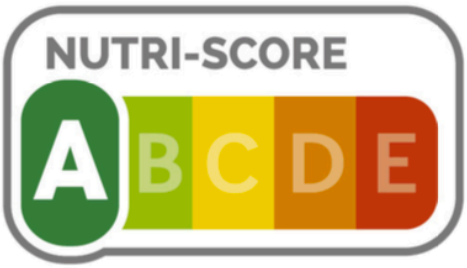
a. Do you recognize it?
b. What are the benefits of receiving information from this scheme?
c. What are the downsides to receiving information from this scheme?
d. And what if it was on a clothing label? What would you think of it?

2. Observe this label:



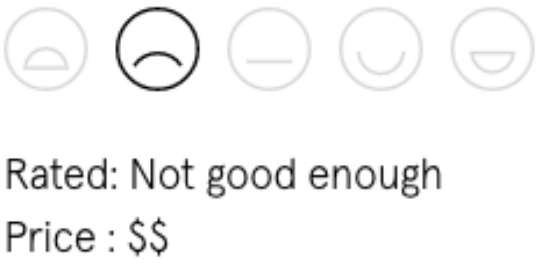
a. Do you recognize it?
b. What are the benefits of receiving information from this scheme?
c. What are the downsides to receiving information from this scheme?
d. And what if it was on a clothing label? What would you think of it?

3. Observe this label:



a. Do you recognize it?
b. What are the benefits of receiving information from this scheme?
c. What are the downsides to receiving information from this scheme?
d. And what if it was on a clothing label? What would you think of it?

4. Observe this label:



a. Do you recognize it?
b. What are the benefits of receiving information from this scheme?
c. What are the downsides to receiving information from this scheme?
d. And what if it was on a clothing label? What would you think of it?

Part 4: Comparison of clothing labels (vocabulary, certifications)

1. Recycled cotton vs. Organic cotton
2. Recycled polyester vs. Organic cotton
3. Recycled polyester vs. Cotton
4. Made in Portugal vs. Made in Bangladesh
5. Recycled polyester, Made in Portugal vs. Organic cotton, Made in Bangladesh
6. Polyester, Made in Portugal vs. Organic cotton, Made in Bangladesh

7. Organic cotton, Made in Portugal, written in a green clothing label vs. Organic cotton, Made in Portugal, written in a white clothing label
8. Polyester, Made in Bangladesh, written in a green clothing label vs. Organic cotton, Made in Portugal, written in a white clothing label
9. Organic cotton vs. Organic cotton certified by GOTS
10. Organic cotton certified GOTS vs. Organic cotton certified OEKO-TEX
11. Organic cotton certified GOTS vs. Organic cotton certified BCI
12. Organic cotton certified GOTS vs. Organic cotton certified EU Ecolabel
13. Organic cotton vs. Recycled polyester which saves 60% more water
14. Organic cotton which saves 70% more water vs. Recycled polyester which saves 60% more water

Part 5: Comparison of clothing labels (price sensitivity)

1. Organic cotton, Made in Portugal, €10 vs. Polyester, Made in Bangladesh, €5
2. Organic cotton, Made in Portugal, €7,5 vs. Polyester, Made in Bangladesh, €5
3. Organic cotton, Made in Portugal, in a green tag, €10 vs. Polyester, Made in Bangladesh, in a white tag, €5
4. Organic cotton, Made in Portugal, in a green tag, €7,5 vs. Polyester, Made in Bangladesh, in a white tag, €5
5. Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €10 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €5
6. Organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €7,5 vs. Polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €5

Annex 3: Consumer survey

Section 1: Sociodemographic data

1. Please indicate which gender you identify with:
    a. Female
    b. Male
    c. Non-binary/Non-conformant
2. Please indicate with age group:
    a. <18
    b. 18-25
    c. 26-41
    d. 42-57
    e. 58-67
    f. 68>
3. In which Portuguese district are you currently living? If you do not leave in Portugal, please finish here your responses.

a. Aveiro
b. Beja
c. Braga
d. Bragança
e. Castelo Branco
f. Coimbra
g. Évora
h. Faro
i. Guarda
j. Leiria
k. Lisboa
l. Portalegre
m. Porto
n. Região Autónoma dos Açores
o. Região Autónoma da Madeira
p. Santarém
q. Setúbal
r. Viana do Caselo
s. Vila Real
t. Viseu

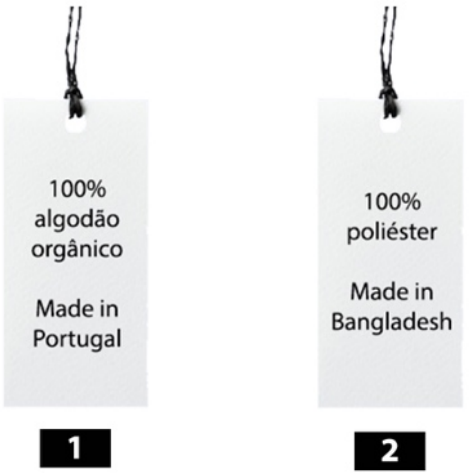
4. Please indicate your complete academic level:
    a. Primary school
    b. Middle school
    c. High school
    d. Bachelor's degree
    e. Master's degree
    f. PhD
5. Please indicate your current work situation:
    a. Student
    b. Student-worker
    c. Part-time worker
    d. Full-time worker
    e. Unemployed
    f. Other

Section 2: Level of knowledge of sustainable fashion

1. From 0 to 5, please evaluate the following components according to their impact on the sustainability of the fashion industry, being that 1 means that they have no impact, and 5 they fully impact it.
    a. Online shopping packaging

b. Workers' salaries
c. Washing cycles
d. Materials and fabric composition
e. Production volume of fashion brands
f. Factories' working conditions

2. Through which means do you usually obtain your knowledge on sustainable fashion? Evaluate on a scale of frequency, from "Never" to "Always":
    a. Books and magazines
    b. Documentaries
    c. Social media
    d. Academic resources: classes, courses, workshops
    e. Fashion brands' websites/brick-and-mortar stores
    f. News websites and blogs
3. Which of the two labels belongs to the most sustainable garment?



    a. Label 1: 100% organic cotton, Made in Portugal
    b. Label 2: 100% polyester, Made in Bangladesh
    c. I don't know

4. Which of the two labels belongs to the most sustainable garment?

   a. Label 1: 100% recycled polyester, Made in Portugal
   b. Label 2: 100% organic cotton GOTS certified, Made in Bangladesh
   c. I don't know
5. If you can, please explain your answer to the two last questions.

Section 3: Ecolabels

1. Do you recognize this ecolabel?

a. Yes
b. No

2. Which of the following sentences do you feel best represents their meaning?
    a. It characterizes a garment that is not sustainable
    b. It characterizes a garment that is sustainable
    c. It characterizes a garment that is very sustainable
    d. I don't know
3. Do you recognize this ecolabel?

a. Yes
b. No

4. Which of the following sentences do you feel best represents their meaning?
    a. It characterizes a garment that is not sustainable
    b. It characterizes a garment that is sustainable
    c. It characterizes a garment that is very sustainable
    d. I don't know
5. Do you recognize this ecolabel?

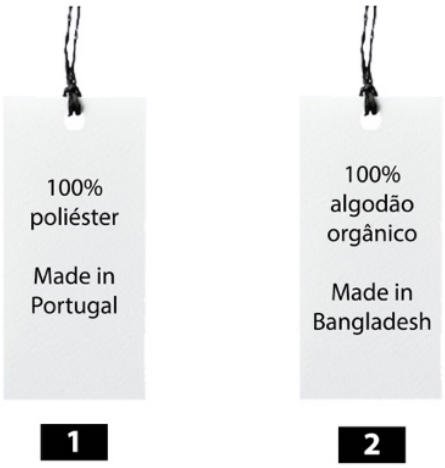
a. Yes
b. No

6. Which of the following sentences do you feel best represents their meaning?
    a. It characterizes a garment that is not sustainable
    b. It characterizes a garment that is sustainable
    c. It characterizes a garment that is very sustainable
    d. I don't know
7. When you read a clothing label, which information do you consider relevant in order to buy that garment? Evaluate each component from 1 to 5, being that 1 means that it is not relevant and 5 means that it is completely relevant.
    a. Price
    b. Size
    c. Materials/garment composition
    d. Washing instructions
    e. Place of production

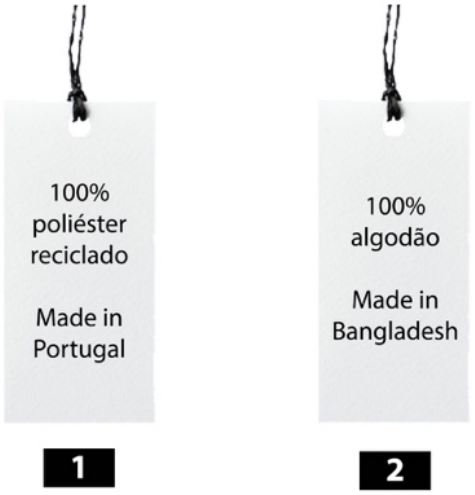
Section 4: Ecolabels comparison

Imagine that you are standing before two white t-shirts and you need to buy one of them. Simply with the information presented, choose which one you would be more likely to buy.

1. With this information, which one you would be more likely to buy?

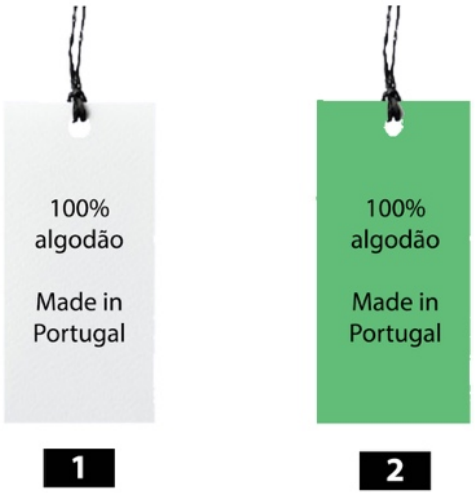


    a. Garment 1: 100% polyester, Made in Portugal
    b. Garment 2: 100% organic cotton, Made in Bangladesh
    c. Indifferent
2. With this information, which one you would be more likely to buy?



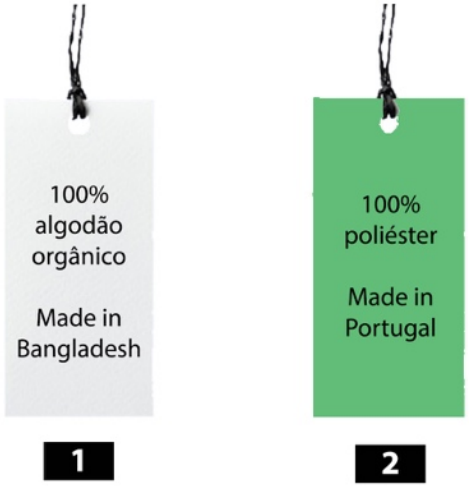
a. Garment 1: 100% recycled polyester, Made in Portugal
b. Garment 2: 100% cotton, Made in Bangladesh
c. Indifferent

3. With this information, which one you would be more likely to buy?



a. Garment 1: 100% cotton, Made in Portugal, written in a white clothing label
b. Garment 2: 100% cotton, Made in Portugal, written in a green clothing label
c. Indifferent

4. With this information, which one you would be more likely to buy?



   a. Garment 1: 100% organic cotton, Made in Bangladesh, written in a white clothing label
   b. Garment 2: 100% polyester, Made in Portugal, written in a green clothing label
   c. Indifferent

5. With this information, which one you would be more likely to buy?

   a. Garment 1: 100% organic cotton GOTS certified
   b. Garment 2: 100% organic cotton in a Zara's Join Life label
   c. Indifferent

6. With this information, which one you would be more likely to buy?

   a. Garment 1: 100% organic cotton GOTS certified
   b. Garment 2: 100% organic cotton EU Ecolabel certified
   c. Indifferent

7. With this information, which one you would be more likely to buy?

   a. Garment 1: 100% organic cotton, Made in Portugal, €40
   b. Garment 2: 100% polyester, Made in Bangladesh, €10
   c. Indifferent

8. With this information, which one you would be more likely to buy?

   a. Garment 1: 100% organic cotton, Made in Portugal, €30
   b. Garment 2: 100% polyester, Made in Bangladesh, €10
   c. Indifferent

Section 5: Efficiency of the energy certification label/traffic light food system in fashion

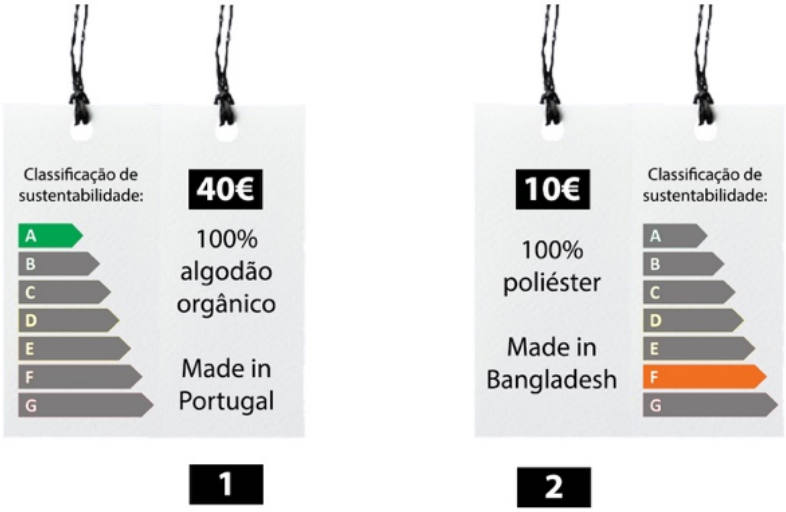
1. Do you recognize this label?

   a. Yes
   b. No

2. From 1 to 5, where 1 represents the lowest classification and 5 the highest, please evaluate this certification scheme according to the following characteristics:
    a. How easy it is to read
    b. How easy it is to understand
    c. How fast it is to read
    d. How fast it is to understand
    e. How much it impacts your choice of a product
    f. How much it impacts the monetary evaluation that you make of a product
3. Do you recognize this label?

    a. Yes
    b. No
4. From 1 to 5, where 1 represents the lowest classification and 5 the highest, please evaluate this certification scheme according to the following characteristics:
    a. How easy it is to read
    b. How easy it is to understand
    c. How fast it is to read
    d. How fast it is to understand
    e. How much it impacts your choice of a product
    f. How much it impacts the monetary evaluation that you make of a product

5. With this information, which one you would be more likely to buy?



   a. Garment 1: 100% organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €40
   b. Garment 2: 100% polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €10
   c. Indifferent

6. With this information, which one you would be more likely to buy?

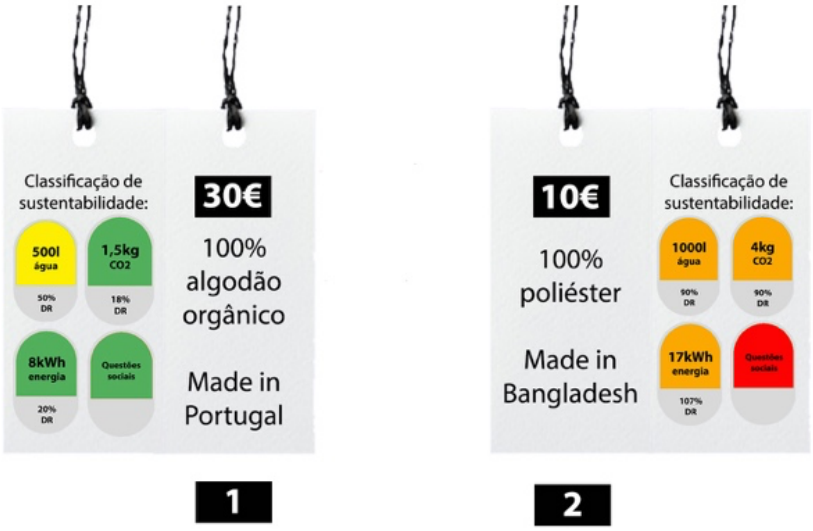
   a. Garment 1: 100% organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €30

b. Garment 2: 100% polyester, Made in Bangladesh, with an evaluation of F in an A to G scheme, €10
c. Indifferent

7. With this information, which one you would be more likely to buy?

a. Garment 1: 100% organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €40
b. Garment 2: 100% polyester, Made in Bangladesh. Water: orange; CO2: orange; Energy: orange; Social issues: red. €10
c. Indifferent

8. With this information, which one you would be more likely to buy?



a. Garment 1: 100% organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €30
b. Garment 2: 100% polyester, Made in Bangladesh. Water: orange; CO2: orange; Energy: orange; Social issues: red. €10
c. Indifferent

9. With this information, which one you would be more likely to buy?

a. Garment 1: 100% organic cotton, Made in Portugal, with an evaluation of A in an A to G scheme, €40
b. Garment 2: 100% organic cotton, Made in Portugal. Water: yellow; CO2: green; Energy: green; Social issues: green. €40
c. Indifferent

UNIVERSIDADE BEIRA INTERIOR

Faculdade de Design, Tecnologia e Comunicação
Universidade Europeia

ANEXO

Declaração de Integridade

Eu, Mariana Pereira Silva, que abaixo assino, estudante com número de inscrição M10502 do Mestrado em Branding e Design de Moda da Faculdade de Artes e Letras / Universidade da Beira Interior, gerido em associação com o IADE – Faculdade de Design, Tecnologia e Comunicação / Universidade Europeia, declaro ter desenvolvido o presente trabalho e elaborado o presente texto em total consonância com o **Código de Integridade da Universidade da Beira Interior**.

Mais concretamente, afirmo não ter incorrido em qualquer das variedades de Fraude Académica, que aqui declaro conhecer, e que em particular atendi à exigida referenciação de frases, extratos, imagens e outras formas de trabalho intelectual, assumindo assim na íntegra as responsabilidades da autoria.

Universidade da Beira Interior / Universidade Europeia, Lisboa 29 / 08 / 2022

Assinado por: **MARIANA PEREIRA SILVA**
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