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# MDDDM

Master's Degree Program in  
**Data-Driven Marketing**

## **The Impact of Eco-Labels on Consumer Behaviour in Fashion Retailing Context**

Rita Gaspar Peixoto Rodrigues

Master Thesis

presented as partial requirement for obtaining a Master's Degree in Data-Driven Marketing

**NOVA Information Management School**  
**Instituto Superior de Estatística e Gestão de Informação**

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by

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Master Thesis presented as partial requirement for obtaining the Master's degree in Data-Driven Marketing, with a specialization in Digital Marketing and Analytics

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## STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism, any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

*Rita Gaspar Peixoto Rodrigues*

*Lisbon, July, 2025*

## DEDICATION

First of all, I would like to thank my family, my mother and father, for the support they have given me throughout my life and for providing me with the tools and strength to keep going.

To my close friends, thank you not only for your support but also for all the laughter, conversations, and unforgettable moments we've shared along the way.

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I'm truly grateful, thank you all!

## ABSTRACT

Eco-labels are increasingly used in various industries as external cues to communicate a product's environmental benefits and promote more sustainable consumption and practices. However, concerning the fashion industry, there is limited evidence on how consumers respond to these labels, especially in e-commerce contexts.

This experimental research investigates the impact of eco-labels on consumers' purchase intentions. Using a between-subjects design, participants were randomly assigned to view an apparel product either with or without an eco-label. This research examined the

Results show that while the direct effect of eco-labels on purchase intention was not significant, both trust and perceived value significantly mediated the relationship between the presence of an eco-label and the intention to buy. Surprisingly, the exposure to an eco-label was linked to lower trust levels and perceived (product) value. Additionally, participants with higher environmental literacy showed lower perceived value, implying that individuals with higher environmental knowledge may respond to these cues with greater skepticism.

These findings provide relevant insights for sustainable fashion marketing, highlighting the need for clear communication, third-party certification, and tailored marketing strategies for different levels of environmental literacy.

## KEYWORDS

Eco-labels; Purchase Intentions; Sustainable Fashion; Perceived Value; Consumer Trust; Environmental Knowledge

### Sustainable Development Goals (SDG):



## TABLE OF CONTENTS

1. Introduction.....	1
2. Literature review .....	3
2.1. Eco-labels.....	3
2.1.1. Use of Eco-labels .....	4
2.2. Purchase intentions.....	5
2.3. The Influence of Eco-labels on the Mediating Variables.....	6
2.3.1. Use of Eco-labels on Trust .....	6
2.3.2. Use of eco-labels on Perceived Value .....	7
2.4. The moderating role of environmental knowledge .....	8
2.4.1. Environmental knowledge .....	8
3. Methodology.....	10
3.1. Research Methodology.....	10
3.2. Pilot Study.....	10
3.2.1. Study Design and Methodology.....	10
3.2.2. Procedures and measures .....	11
3.2.3. Results.....	11
3.3. Study 1.....	14
3.3.1. Study Design and Methodology.....	14
3.3.2. Measures .....	14
3.3.3. Data Collection and participants .....	17
4. Results and Discussion .....	20
4.1. Descriptive Analysis.....	20
4.2. Manipulation Checks .....	22
4.3. Main Effect .....	22
4.4. Mediation Effect .....	23
4.5. Moderation Effect .....	25
4.6. Discussion .....	27
5. Conclusions.....	30
5.1. Theoretical Implications .....	30
5.2. Managerial Implications .....	31
5.3. Limitations and Future Research Recommendations .....	32

Bibliographical References .....	34
Appendix A .....	37
Appendix B .....	38
Appendix C .....	40
Appendix D .....	41

## LIST OF FIGURES

Figure 1 - Conceptual Model .....	9
Figure 2 - Image used as manipulation for the experimental study (control group) .....	18
Figure 3 - Image used as manipulation for the experimental study .....	19
Figure 4 - Mediation of Trust on Purchase Intention.....	24
Figure 5 - Mediation of Perceived Value on Purchased Intention .....	24

## LIST OF TABLES

Table 1 - Products examined by Brand .....	12
Table 2 - Frequency of Eco-labels found across the sample .....	13
Table 3 - Eco-label representation on product pages .....	13
Table 4 - Measurement scales used in Study 1 .....	17
Table 5 - Descriptive Analytics of Demographic Variables.....	21
Table 6 - Cronbach's Alpha Values .....	21
Table 7 - Conditional Indirect Effect by Level of Environmental Knowledge.....	26
Table 8 - Hypothesis Verification .....	27

## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>LCA</b>	Life Cycle Assessments
<b>ISO</b>	International Organization for Standardization
<b>EPD</b>	Environmental Product Declarations
<b>SPSS</b>	Statistical Package for the Social Sciences
<b>GOTS</b>	Global Organic Textile Standard

# 1. INTRODUCTION

Fashion and sustainability often appear to be conflicting ideas, as fashion is inherently driven by constant change, whereas sustainability emphasizes long-term consumption. With the fashion industry being the second-largest global polluter, and consumers becoming increasingly conscious of this impact, many fashion brands can no longer afford to overlook environmental issues (Grgurić Čop et al., 2024).

As environmental awareness increases, consumers and media are placing pressure on brands/companies to adopt more sustainable practices (Testa et al., 2015). However, this shift implies challenges. Consumers often struggle with a conflict between their desire to follow fashion trends and their intention to act responsibly towards a better environment (Koa and Phua, 2024).

One strategic response to this challenge of promoting sustainable consumption has been the introduction of eco-labels. These environmental certifications aim to drive positive changes in production and consumption within the textile industry and were designed to inform/guide consumer decisions. These labels act as important external cues, indicating environmental benefits such as recyclability, low emissions, environmental safety and labor conditions (Feuß et al., 2022; Atkinson and Rosenthal, 2014).

These labels may play a crucial role in influencing consumer behavior by enhancing purchase intentions and gaining a competitive edge. These external cues can be effective tools for gaining consumer trust, as studies indicate a strong relationship between consumption values and green trust (Feuß et al., 2022; Peirson-Smith and Evans, 2017; Adamkiewicz et al., 2022).

However, their effectiveness is not guaranteed. When consumers are not familiar with this concept or perceive these labels as untrustworthy/greenwashing communication, they may evoke consumer skepticism and fail to increase their likelihood of purchase (Koa and Phua, 2024; Iraldo et. al, 2020; Ziyeh and Cinelli, 2023). This paradox highlights the need to investigate how eco-labels may influence consumer decision-making.

Understanding consumers' genuine reactions/behaviors to eco-labels is crucial for designing effective communication and marketing strategies for sustainable fashion. While previous studies have examined the impact of these marks and found them to be useful, other research suggests that eco-labeling can sometimes reduce the perceived value of other product attributes or cause confusion. It is essential to proceed with experimental tests on the effectiveness of these labels in real purchasing situations and observe actual consumer behavior (Feuß et al. 2022). Conducting empirical testing can offer valuable insights into the frequent gap between consumer intentions and actual purchasing behavior.

The objective of this dissertation is to contribute to the existing literature on eco-labels and sustainable consumption by testing how these labels influence consumers' purchase intentions. Additionally, this research aims to provide insights into companies seeking to develop more credible and effective sustainability strategies when communicating and promoting their products and collections.

## 2. LITERATURE REVIEW

### 2.1. ECO-LABELS

Eco-labels were launched in the late 1970s with pioneering schemes like Blauer Engel and have evolved significantly from simple marketing tools into important instruments of environmental policy (Iraldo et al., 2020).

Over the decades, various national and supranational programs (e.g. EU Ecolabel and Nordic Swan) have established eco-labels as trusted indicators of environmental performance. These programs are based on life cycle assessments (LCA) and independent third-party certification. The credibility of these eco-labels highly depends on transparency, standardized criteria and external verification, which contributes to reducing skepticism and increasing consumer trust (Kabaja et al., 2022; Houf et al., 2024).

With the growing demand for sustainability, consumers have become more aware of the fashion industry's negative environmental impact and often struggle to make informed purchase decisions (Feuß et al. 2022). Eco-labels have become a key tool for guiding consumers' sensitivity to purchase eco-friendly products in a clear/accessible way (Ranasinghe & Jayasooriya, 2021; Feuß et al. 2022; Houf et al., 2024).

Over 450 eco-labels were used across 199 countries and 25 industry sectors in 2021, with the textile industry being one of the most targeted due to its environmental footprint. Despite this growth, the adoption of these labels in fashion products remains limited in this industry (Kumar et al., 2021).

According to ISO (International Standardization for Organization) classification, eco-labels are categorized into three types (Iraldo et. al, 2020; Henninger, 2015):

- Type I (ISO 12024) are multi criteria, third-party certified labels based on product's lyfe cycle. EU Eco-label and the Blue Angel are two examples of this type.
- Type II (ISO 14021) consist of self-declared environmental claims, such as "eco-friendly" or "recyclable", without independent verification.
- Type III (ISO 14025) are declarations based on life cycle assessments (LCA) and are often found in Environmental Product Declarations (EPD).

Eco-labels are “legally protected labels” that indicate the environmental preference of a product/service, considering its lifecycle. These labels can be seen as certification marks to internalize the external environmental effects linked to product production, consumption, and disposal. Eco-friendliness, environmental safety, low energy consumption, and recyclability are some of the concepts associated with eco-labels (Ranasinghe & Jayasooriya, 2021; Atkinson and Rosenthal, 2014; Feuß et al., 2022; Kabaja et al., 2022).

Ranasinghe & Jayasooriya (2021) state that eco-labels have three main objectives:

1. To prevent misleading environmental advertising (also known as greenwashing).
2. To raise consumer awareness for making environmentally informed decisions.
3. To provide market incentives that encourage companies to produce/create products with a lower environmental impact.

However, eco-labels can only be effective if consumers understand their meaning. Some authors defend these labels may fail to support informed decision-making and promote sustainable consumption when they're presented vaguely/poorly to consumers (Kumar et al. 2021, D'Souza, 2004, Hayat et al., 2019) . Additionally, the efficiency of eco-labels can be tied to consumers' self-confidence in decision making. Research shows that many individuals have difficulty in interpreting accurately eco-labels, which can reduce their influence on actual behavior (Thøgersen et al., 2010).

### **2.1.1. USE OF ECO-LABELS**

Eco-labels are a product's extrinsic cue that can influence how consumers will evaluate products and affect their response (Feuß et al., 2022).

These labels may influence consumer behavior by increasing purchase probability, willingness to pay higher prices, and decreasing uncertainty. Eco-labels can be effective tools for gaining consumer trust, as studies indicate a strong relationship between consumption values and green trust. Consumers often perceive eco-labels as indicators of superior quality and higher value, reflecting their lifestyle choices (Feuß et al., 2022; Peirson Smith and Evans, 2017; Adamkiewicz et al., 2022). However, Pancer et. al (2015) argue that when environmental cues are displayed in isolation (e.g. a single label without supporting explanation), it can lead to

category ambiguity and diminished perceptions of product efficacy. This issue is particularly relevant in online shopping contexts, where information is often limited.

However, the effectiveness of eco-labels is not universally recognized. Green skepticism has been studied and shown that it can diminish the credibility of eco-labels/environmental claims, especially in industries known for misleading marketing practices (Leonidou and Skarmeas, 2017).

Additionally, despite increased awareness, many consumers lack the knowledge necessary to identify and comprehend the claims represented by eco-labels, undermining their potential to influence consumers' purchase decisions (Koa and Phua, 2014).

Despite their growing availability, eco-labeled fashion products represent a significant small portion of overall consumption. According to Feuß et al. (2022), eco-labeled textiles represented only 0.87% of total apparel expenditures in 2018 – which may indicate these products remain mostly within niche markets.

In this conceptual model, **eco-labels used by fashion retailers** act as the independent variable, significantly shaping consumer perceptions of sustainability and influencing their purchase intentions.

### **H1: The use of eco-labels by fashion retailers positively influences purchase intentions**

## **2.2. PURCHASE INTENTIONS**

Purchase intention is defined as a consumer's deliberate plan or intent to make an effort to buy a product (Lu et. al, 2014).

When consumers perceive eco-labels as credible and relevant, they are more likely to make pro-environmental purchasing decisions (Testa et al., 2013). However, some studies highlight a consistent gap between purchase intention and consumer behaviour, revealing that consumers may express a desire to buy sustainable products but often do not follow through in real-world situations (Feuß et al., 2022). This gap can be particularly evident in the fashion industry, where sustainable intentions don't usually lead to purchasing behaviour – due to price sensitivity, social desirability/trends and the perception of product compromise (Kabaja et al., 2022).

The dependent variable, purchase intention, indicates consumers' likelihood of buying products from these brands based on their perceptions of eco-labels.

Understanding this relationship is crucial for evaluating whether eco-labels effectively enhance consumer engagement and promote higher purchase intentions, ultimately encouraging sustainable purchasing behavior in the fashion industry.

### **2.3. THE INFLUENCE OF ECO-LABELS ON THE MEDIATING VARIABLES**

#### **2.3.1. USE OF ECO-LABELS ON TRUST**

Wang et al. (2020) define trust as a “psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of another”.

According to Atkinson and Rosenthal (2014), consumer trust is a crucial factor in green consumption and the credibility of green product claims. Unlike traditional product attributes, which can be verified or tested through personal experience, environmental and green product claims cannot be directly assessed in the same way (Atkinson and Rosenthal, 2014; Taufique et. al, 2016).

Consumers struggle to verify the environmental claims made by fashion brands, often relying on trust or belief in these green product claims (Atkinson and Rosenthal, 2014; Testa et. al, 2015).

Despite growing environmental awareness, consumer trust remains an essential factor - consumers will consider a label in their purchasing decisions only if they trust in it. Daugbjerg et al. (2014) discuss the effects of “early green marketing activity” during the 1990s, which led to confusion and a lack of credibility among consumers. Research shows that perceptions of greenwashing tend to result in undermining trust, especially in consumers with higher environmental literacy (Daugbjerg et al., 2014; Houf et al., 2024).

Trust was chosen to mediate the relationship between the usage of eco-labels by fashion retailers and purchase intention.

**H2: Trust positively influences the relationship between the use of eco-labels and purchase intentions of fashion products.**

### 2.3.2. USE OF ECO-LABELS ON PERCEIVED VALUE

Wang et. al (2020) define perceived quality as the “perceived value” of a certain object or product. Consumer perceived quality can refer to consumers’ subjective perception and evaluation, which can influence a consumer’s attitude and behavior (Wang et. al, 2020; Pandey et. al, 2023).

According to Pandey et al. (2023), perceived value plays a key role in shaping consumer attitudes and decision-making, particularly in the context of sustainable consumption. Prior research has demonstrated that factors such as product attributes, benefits, and environmental concerns contribute to consumers' perceived value, ultimately impacting their willingness to purchase green products (Testa, 2022; Lee et al., 2015). Furthermore, attitudes serve as a fundamental component in evaluating the costs and benefits of a behavior (Pandey et al. 2023). Given that a positive attitude toward sustainable consumption is closely linked to purchase intention (Han & Yoon, 2015), and perceived value directly influences consumer evaluation of a product, it is expected that perceived value will have a positive effect on purchase intention in the context of eco-labeled fashion products. Furthermore, consumers’ perceived value may be influenced by how well their environmental values align with the brand’s sustainability narrative (Plakantonaki et al., 2023).

Leonidou (2024) argue that previous research indicates that consumers often lack complete knowledge of these labels. Consequently, their dependence on these external heuristic cues can create bias in their perceptions and (eventually) mislead them.

Given that the use of eco-labels may influence how consumers perceive the quality of sustainable fashion products, the current study aims to investigate how these labels might influence purchase decision-making.

**H3: Perceived value positively mediates the relationship between the use of eco-labels and purchase intentions of fashion products.**

## **2.4. THE MODERATING ROLE OF ENVIRONMENTAL KNOWLEDGE**

### **2.4.1. ENVIRONMENTAL KNOWLEDGE**

Taufique et al. (2016) define environmental knowledge as a consumer's understanding and awareness of environmental issues. Environmental knowledge includes general knowledge about facts and concepts related to the natural environment.

Panopoulos et. al (2023) and Taufique et al. (2016) argue that the more consumers are educated about the environment, the more likely they are to adopt an eco-friendly lifestyle and buy green products. This author argues that for consumers to effectively recognize eco-labeled products, they need to have prior knowledge and concern for the environment.

The study conducted by Atkinson and Rosenthal (2014) indicates that consumers' familiarity with eco-label information can enhance their green purchase decisions. On the other hand, when consumers are unfamiliar with eco-labels, they may feel confused or skeptical of them, leading to a decreased intent to buy sustainable products (Taufique et al., 2016; Leonidou, 2024; Daugbjerg et al., 2014; Houf et al., 2024).

Diekel et al. (2021) refers that recent findings suggest that highly informed consumers may become more critical or even reject sustainability claims/labels they perceive as inauthentic. However, recent findings indicate that consumers frequently lack a comprehensive understanding/knowledge of eco-labels, which can lead to misinterpretation or superficial belief on visual cues. This gap may result in biased evaluations or inadequate assumptions about a product's sustainability (Koa and Phua, 2024), reinforcing the need to examine the variable **environmental knowledge** as a moderating factor in the relationship between eco-label use and purchase intention. As consumers' environmental knowledge increases, they're more likely to recognize and value the significance of eco-labels as an indicator of a brand's sustainability efforts.

**H4a: Environmental knowledge moderates the impact of eco-labels on consumer responses, with consumers with more knowledge inferring more trust when interacting with eco-labels in fashion products**

**H4b: Environmental knowledge moderates the impact of eco-labels on consumer responses, with consumers with more knowledge perceiving more value when interacting with eco-labels in fashion products**

Figure 1 illustrates the conceptual model of this research, summarizing the hypothesis to be addressed in this research.

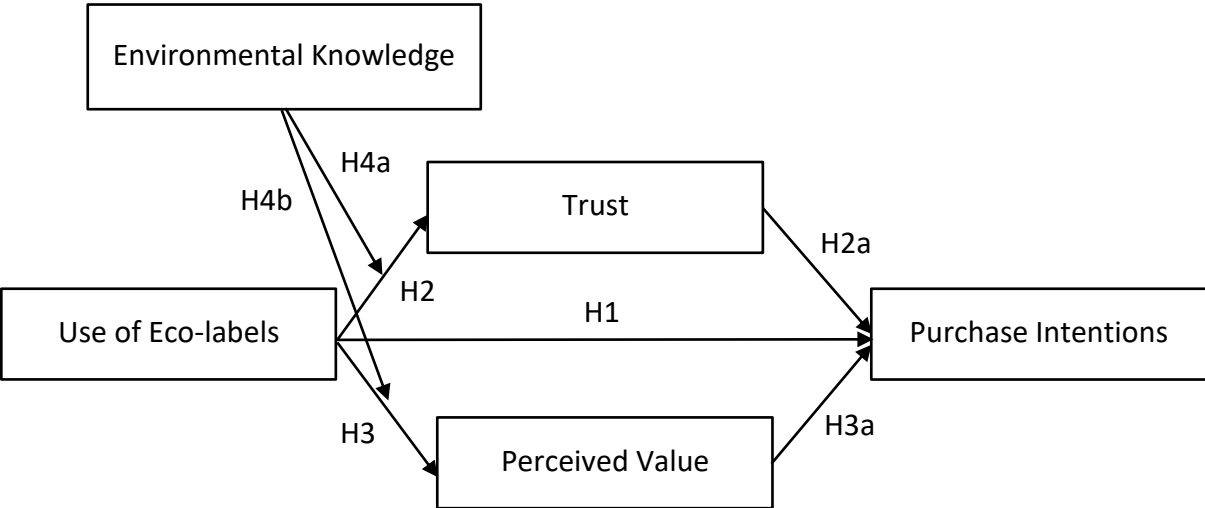


Figure 1 - Conceptual Model

Source: Own elaboration

## **3. METHODOLOGY**

### **3.1. RESEARCH METHODOLOGY**

After completing the literature review in the previous chapter, this chapter aims to present in detail the methodological approach taken in the research, data collection, and analysis of results.

An experimental design was chosen to examine the impact of eco-labels (independent variable) on consumers' purchase intentions (dependent variable). According to Viglia et. al (2021), experimental designs are well-suited to determine causal relationships between independent and dependent variables, since they allow for manipulating the independent variable while holding the remaining factors constant and randomly assigning participants to experimental conditions.

In this study, the experiment was conducted to understand how the use of eco-labels (versus a control group with no eco-label) influences the perception of product quality and trust, and how these variables mediate the effect of eco-label use on purchase intentions. This study also considers the impact of environmental knowledge on moderating variables.

This methodological approach is coherent with previous studies that investigated green marketing effects through scenario-based experiments to assess casual influence on perceptions and purchase intentions (Houf et. al, 2024).

### **3.2. PILOT STUDY**

#### **3.2.1. STUDY DESIGN AND METHODOLOGY**

The main goal of the pilot study was to identify the most prevalent eco-labels and analyze how sustainable clothing brands showcase them on their product pages. This aligns with Houf et al. (2024), who argue that consumer interpretation of green claims depends heavily on their framing and presentation. This initial study was conducted to help prepare a scenario-based manipulation for the subsequent experimental study. According to Viglia et al. (2021), a good experimental design depends on the realism of the manipulation, as this enhances both external validity and generalizability of the results. Therefore, the experimental scenario was

carefully developed to reflect a realistic product page, simulating how eco-labels are usually displayed in e-commerce environments.

### **3.2.2. PROCEDURES AND MEASURES**

Given the limited supply of sustainable Portuguese brands with this type of certification, it was necessary to broaden the analysis and look for European and American sustainable clothing brands. An online content analysis was conducted on five European and American sustainable clothing brands with eco-label certifications: Patagonia, ISTO, Nudie Jeans, Pact, Sézane, and Tentree. These brands were chosen based on the following criteria:

1. They emphasize eco-friendly practices and ethical production standards.
2. They hold eco-label certifications.
3. They are well-established and are recognized in the sustainable European/American sustainable clothing market.
4. They ship to Europe.

This analysis focused on understanding which eco-labels were the most common (and therefore most familiar to consumers) and the type of references made to them. On each website, a review of different clothing products was carried out, recording only those that had presented an eco-label icon and/or were mentioned in the product description.

This approach allowed for a structured examination of how eco-labels are usually presented in product pages, providing insights to prepare a realistic online shopping scenario for participants in the experiment design.

### **3.2.3. RESULTS**

A total of 302 products were individually analyzed on the e-commerce websites of five sustainable fashion brands (Table 1). The sample included jackets, pants, T-shirts, skirts, underwear, hoodies, vests, dresses, socks, tops, and tote bags.

<b>Brand name</b>	<b>Number of Products</b>	<b>% of total sample</b>
Patagonia	85	28%
ISTO	82	27%
Pact	74	25%
SÉZANE	35	12%
Tentree	18	6%
Nudie Jeans	8	3%

Table 1 - Products examined by Brand

Regarding the presentation of eco-labels on the product page, three different formats were identified: icon, claim, and icon plus claim (Appendix B). In most cases, only a single eco-label was displayed or mentioned. However, some of these brands had products with two or more eco-label certifications simultaneously.

The certifications identified in this analysis refer to different stages of the textile product life cycle. Some eco-labels focus on the raw material stage (such as Fair Trade Certified Cotton), which ensures ethical and sustainable agricultural practices. Fair Trade Certified Factory and Bluesign Certified focus on the manufacturing process regarding chemical safety, social responsibility, and environmental management. Appendix C summarizes the eco-labels found during the pilot study and each main certification focus.

Table 2 shows the frequency of eco-labels across the sample. The Fair Trade Certified Factory is the most frequently used eco-label, appearing in 142 out of 302 products (47%). GOTS (Global Organic Textile Standard) Certified follows with 98 products (32%). Some products carry more than one eco-label. In this analysis, the most frequent combination was between the two most prevalent eco-labels – Fair Trade Certified Factory and GOTS, observed in 17 products (7%).

The remaining eco-labels account for less than 10% of the sample.

<b>Type of Eco-label</b>	<b>Frequency</b>	<b>Relative Frequency</b>	<b>Cumulative Relative Frequency</b>
Fair Trade Certified Factory	142	47%	47%
GOTS Certified	98	32%	79%

OEKO-TEX Certified	22	7%	87%
GOTS and Fair Trade Certified Factory	17	6%	92%
Bluesign Certified and TENCEL™	11	4%	96%
Fair Trade Certified Cotton	8	3%	99%
Bluesign Certified	2	1%	99%
Fair Trade Organic Cotton	1	0%	100%
TENCEL™	1	0%	100%

Table 2 - Frequency of Eco-labels found across the sample

The analysis of how eco-labels were presented on product pages reveals that most of this sample displays both textual claims and eco-label icons (55%). The second most frequent form was the textual claim (34%).

<b>How the Ecolabel is presented</b>	<b>Frequency</b>	<b>Relative Frequency</b>	<b>Cumulative Relative Frequency</b>
Label and claim	165	55%	55%
Claim	102	34%	88%
Label	35	12%	100%

Table 3 - Eco-label representation on product pages

### **3.3. STUDY 1**

#### **3.3.1. STUDY DESIGN AND METHODOLOGY**

Study 1 consisted of a single-factor between-subjects experimental design to understand how eco-labels (used by fashion retailers) can influence consumers' perceptions of fashion products and their purchasing behavior and intentions.

Experimental methodology was chosen to evaluate the effect of different conditions and to randomize the study participants. The goal was to present a study with similar conditions and only vary the independent variable of the study.

Qualtrics was selected as the tool to develop the online questionnaire, and IBM Statistical Package for Social Sciences (SPSS) was used to process and analyze the results.

#### **3.3.2. MEASURES**

In this single-factor between-subjects experimental design, participants were randomly assigned to one of two different conditions – one with an eco-label symbol and claim and a control condition, without an eco-label symbol/claim.

This study had different items to measure the constructs, adapted from previous research papers to fulfill the goal of the research.

Once participants agreed to participate in the study, they were randomly assigned by the software to one of the conditions, including a contextual text for them to imagine as if they were online shopping for a T-shirt.

After this section, to verify participants' awareness of the presence (or absence) of the eco-label (icon and claim), they were subjected to two manipulation checks – one was a nominal scale and the other was a Likert scale.

Subsequently, participants were asked about their environmental knowledge. This construct was measured by a 4-item scale from Leonidou and Skarmeas (2017), using a seven-point Likert scale from 1 “Strongly Disagree” to 7 “Strongly Agree”.

Afterward, consumers were asked questions about the T-shirt they were shown. Regarding trust, this construct was measured by a 3-item scale adapted from Taufique et. al (2016), using a six-point Likert scale from 1 “Strongly Disagree” to 6 “Strongly Agree”.

To measure perceived value, a 4-item scale was used, adapted from Pandey et. al (2023), using a seven-point Likert scale from 1 “Strongly Disagree” to 7 “Strongly Agree”.

The participants’ intentions to purchase the item presented were measured through a 3-item scale from Barber et al. (2012), using a seven-point Likert scale from 1 “Strongly Disagree” to 7 “Strongly Agree”.

To measure greenwashing perceptions (control variable), a 5-item scale was used, adapted from Leonidou and Skarmeas (2017), using a seven-point Likert scale from 1 “Strongly Disagree” to 7 “Strongly Agree”.

Finally, two exploratory questions were included to provide further context for their responses. One of them was to explore participants’ perceptions of eco-labels: “What does an eco-label on a clothing product (e.g., a t-shirt) mean to you?”. The other question was designed to better understand the relative importance of eco-label certifications in consumers’ decision-making (and to compare between groups). In this second exploratory question, participants were asked to rank five shopping criteria (from most to least important) when purchasing apparel: Design and aesthetic, quality of fabrics, price, eco-label certification, and brand reputation.

The following table presents the constructs applied in Study 1.

Constructs	Items	Measurement Items	References
<b>Trust</b>	T1	I believe that eco-labels demonstrate a genuine commitment to environmental protection and ethical production.	<b>Adapted from</b> Taufique et al. (2016)
	T2	Most of the claims made by eco-labels are accurate.	

	T3	If an eco-label makes a claim or promise about a product, I trust that the claim is reliable.	
<b>Purchase Intentions</b>	P1	I would consider purchasing this product	Barber et. al (2012)
	P2	I intend to try this product.	
	P3	I am likely to buy this product.	
<b>Environmental Knowledge</b>	EK1	I believe that I am informed about child labour/sweatshop issues in the fashion apparel manufacturing business.	Park (2018)
	EK2	I am knowledgeable about social equity issues (e.g., working conditions of factory workers, fair wages for factory workers) in the fashion apparel business.	
	EK3	I know more about socially responsible apparel business than the average person.	
	EK4	I believe that I am informed about environmental issues (e.g., eco-fashion, environmental impact of clothing manufacturing) in the fashion apparel manufacturing business.	
	EK5	I understand the environmental impact of apparel products across the supply chain.	
	EK6	I am knowledgeable about apparel brands that sell environmentally friendly products.	
<b>Perceived Value</b>	PV1	Purchasing this product would be worth it.	Adapted from Pandey et al. (2023)
	PV2	This product has a positive social image.	
	PV3	Overall, this product would deliver good value.	
	PV4	This product will provide comfort and great quality.	

<b>Greenwashing</b>	G1	Most companies mislead with words about the environmental features of their products.	Leonidou and Skarmeas (2017)
	G2	Most companies mislead with visuals or graphics about the environmental features of their products.	
	G3	Most companies provide vague or seemingly unprovable environmental claims for their products.	
	G4	Most companies overstate or exaggerate the environmental features of their products.	
	G5	Most companies leave out or hide important information about the real environmental features of their products.	

Table 4 - Measurement scales used in Study 1

### 3.3.3. DATA COLLECTION AND PARTICIPANTS

The data collection for this experiment was conducted through an online survey developed on Qualtrics. Participants for both the pre-test and the main study were recruited via the Prolific platform.

To guarantee that the sample met specific characteristics, there were some custom screening criteria applied on Prolific:

- Only participants located in European Countries were eligible. The study included participants from the following 22 countries: Ireland, Germany, France, Spain, Portugal, Albania, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Czech Republic, Italy, Hungary, Lithuania, Latvia, Norway, Netherlands, Slovakia, Slovenia and Sweden.
- New custom screeners on Prolific.
- Quota sampling method, to ensure an equal distribution by sex.

Once the survey was prepared, a pre-test was conducted with 28 individuals to ensure the clarity of the questions and to verify the effectiveness of the simulated online shopping scenario. The survey was divided into 5 sections:

- In the first section, after the participants agreed to take part in this experiment, they were presented with questions to understand and measure their environmental knowledge.
- In the second section, participants were given a text that led them to imagine a potential shopping context in the shopping center. This section presented the text below, followed by an image of a T-shirt that is presented according to their experimental group.

**“Imagine you're shopping for a T-shirt online. Before deciding which one to purchase, you browse through all the available options. This T-shirt catches your attention:”**

**“Please answer the following questions with this product in mind.”**

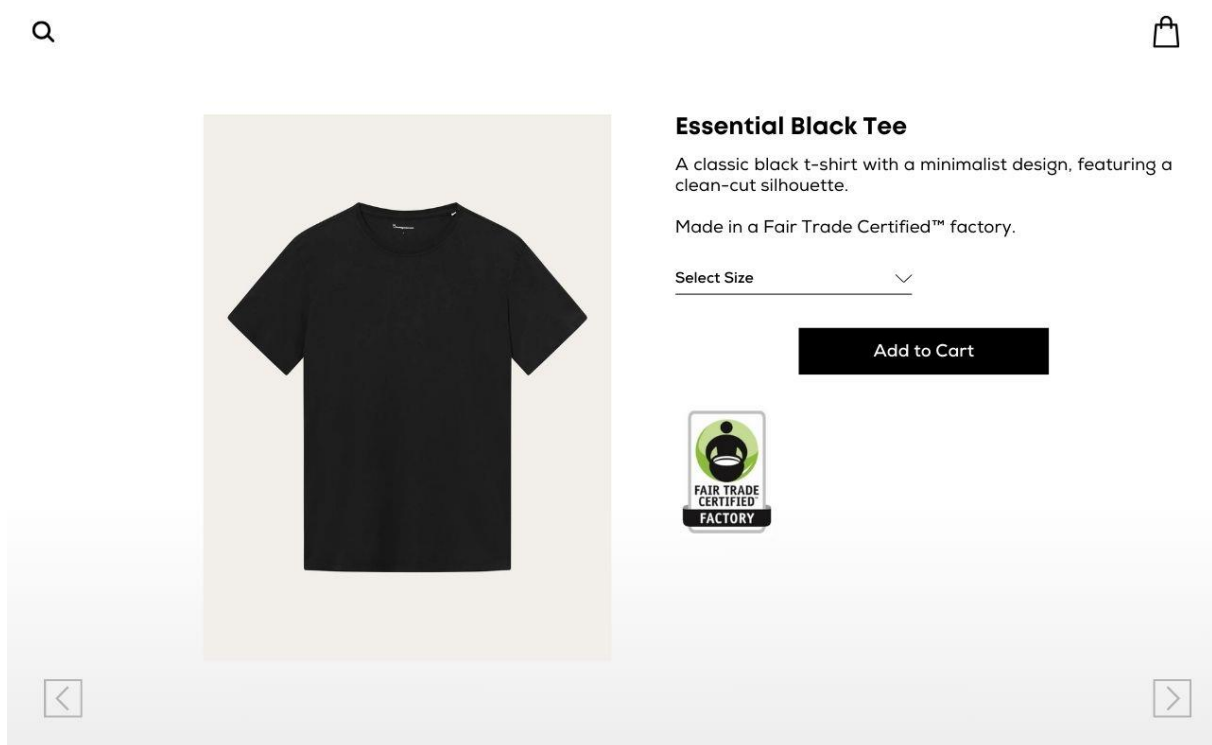


Figure 2 - Image used as manipulation for the experimental study (control group)

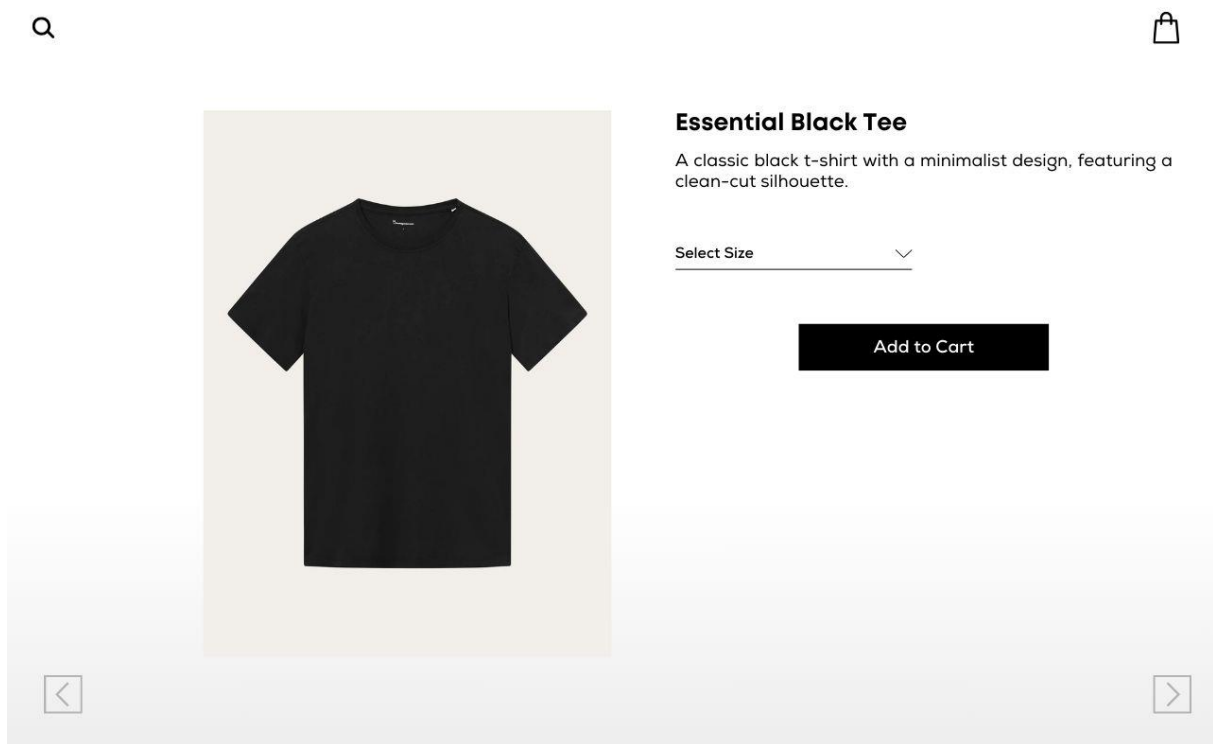


Figure 3 - Image used as manipulation for the experimental study

- In the third section, participants had to answer questions related to the perception of the product presented (perceived value, trust) and were subjected to a manipulation check.
- In the fourth section, participants were asked about their purchasing intentions and greenwashing perceptions.
- Finally, in the last section, after answering the questions from the previous sections, participants answered a set of demographic and socio-economic questions.

## 4. RESULTS AND DISCUSSION

### 4.1. DESCRIPTIVE ANALYSIS

A total of 132 responses were collected for the survey. When processing data collection, some responses were excluded because they completed the questionnaire in less than two minutes and/or did not finish the study. The final sample comprised 113 responses, 46.0% identified as male, 51.3% as female, and the remaining (2.7%) as non-binary.

In terms of age range, we can highlight the 26-35, as the most represented age group (36.3%). The second most significant age group is 18-25, representing 31% of the sample.

In terms of educational degree, a bachelor's degree was the most represented educational level (33.6%), followed by secondary education (31%).

In terms of nationality, the data collected revealed a low frequency of responses from participants in Germany and France. Consequently, these two nationalities were grouped in the category "Others". On the other hand, there was a significant number of respondents from Italy (17.7%), as shown in the table below. The largest share of participants was from Portugal (44.2%), followed by Italy (17.7%) and 15.9% Spain.

The following table summarizes the sociodemographic characteristics of this study's sample.

<b>Classification Questions</b>	<b>Answers</b>	<b>Frequency</b>	<b>Relative Frequency</b>
<b>Gender</b>	Male	52	46.0%
	Female	58	51.3%
	Non-binary	3	2.7%
	Prefer not to say	0	0%
<b>Age</b>	18-25	35	31.0%
	26-35	41	36.3%
	36-45	13	11.5%
	46-55	15	13.3%
	>55	9	8.0%
<b>Educational Level</b>	Primary School	0	0%
	Middle School	4	3.5%
	Secondary School	35	31.0%

	Bachelor's Degree	38	33.6%
	Master's Degree	32	28.3%
	Doctoral Degree	4	3.5%
<b>Gross Annual Income</b>	<10.000€	20	17.7%
	10.000 to 19.999€	33	29.2%
	20.000 to 29.999€	28	24.8%
	30.000 to 39.999€	15	13.3%
	40.000 to 49.999€	10	8.8%
	>50.000€	7	6.2%
<b>Country</b>	Portugal	50	44.2%
	Spain	18	15.9%
	Italy	20	17.7%
	Other	25	22.1%

Table 5 - Descriptive Analytics of Demographic Variables

The reliability of this survey was analyzed using Cronbach's alpha. According to Malhotra and Birks (2023), when a Cronbach's alpha value is greater than 0.60, it is considered trustworthy and consistent. The following table presents the measurement instruments used in the study along with their Cronbach's Alpha values.

<b>Variables</b>	<b>Cronbach's Alpha</b>
Trust	0.924
Perceived Value	0.900
Environmental Knowledge	0.921
Purchase Intentions	0.931

Table 6 - Cronbach's Alpha Values

All constructs presented internal consistency, with alpha values above 0.90. These results indicate high reliability and consistency across all scales.

## **4.2. MANIPULATION CHECKS**

Participants were randomly assigned to one of two conditions in a between-subjects experiment, with each person only seeing one of the conditions.

In the first scenario, a black t-shirt with an eco-label was presented to 56 participants (49.6%). In the second scenario, the same t-shirt without an eco-label was shown to 57 participants (50.4%).

To check participants' awareness of the presence (or absence) of the eco-label (icon and claim), two manipulation check questions (MC1 and MC2) – nominal and Likert scale - were included in the survey.

The nominal manipulation check (MC1) has worked ( $t=-6.800$ ;  $p=0.001$ ), with respondents who saw the scenario with the eco-label ( $M=1.44$ ;  $SD=0.811$ ) and respondents without the eco-label ( $M=2.30$ ;  $SD=0.499$ ).

The second manipulation check (MC2) was divided into two questions with a Likert scale: “The product I just saw had an eco-label” (MC2\_1) and “The product I just saw had a sustainability label” (MC2\_2).

The manipulation check MC2\_1 worked as expected ( $t=10.514$ ;  $p=0.001$ ). Participants who had the eco-label scenario reported higher levels of agreement ( $M=5.38$ ;  $SD=1.810$ ) than participants in the control group ( $M=2.23$ ;  $SD=1.337$ ).

Similarly, MC2\_2 has worked successfully ( $t=10.690$ ;  $p=0.001$ ). Participants who had the eco-label scenario also reported higher levels of agreement ( $M=5.44$ ;  $SD=1.653$ ) compared to the control group ( $M=2.35$ ;  $SD=1.395$ ).

## **4.3. MAIN EFFECT**

Before testing H1, an independent samples t-test was performed to analyze the relationship between the control variable (greenwashing) and the independent variable (use of eco-label). The results indicate there was no statistically significant difference in greenwashing perception between participants exposed to a scenario with the t-shirt with eco-label ( $M = 4.84$ ;  $SD=1.00$ ) and those in the control group ( $M=5.19$ ;  $SD=1.23$ ). Since the p-value is not

statistically significant ( $p=0.096 > 0.05$ ), greenwashing was not included as a covariate variable in the main effect analysis.

To test **hypothesis 1 (H1)**, a univariate analysis of variance was carried out to see whether the presence of the eco-label in the simulation influenced purchase intention.

The results revealed that the presence of the eco-label did not significantly impact purchase intention. Participants who were exposed to the T-shirt with the eco-label ( $M=4.29$ ;  $SD=1.34$ ) showed a slight increase in purchase intention compared to the control group ( $M=4.04$ ;  $SD=1.42$ ). This difference was not statistically significant ( $F=0.980$ ;  $p=0.324$ ;  $\eta^2=0.009$ ), so **hypothesis H1 is not supported.**

#### **4.4. MEDIATION EFFECT**

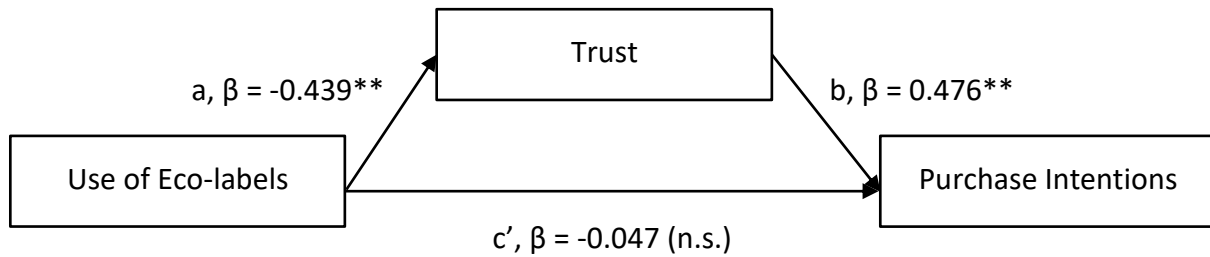
When testing mediation analysis, it was used Model 4 in PROCESS SPSS developed by Hayes. It was determined use of eco-label as the independent variable, purchase intention as the dependent variable, and trust and perceived value as the mediators. Each proposed mediator was analyzed separately.

Concerning **hypothesis H2a**, the results obtained showed that the use of eco-label influenced trust significantly ( $b=-0.4394$ ;  $t=-2.0656$ ;  $p=0.0412$ ). Trust was a significant positive predictor of purchase intention ( $b=0.4761$ ;  $t=4.4530$ ;  $p < 0.0001$ ).

The direct effect of the use of eco-label on purchase intention was revealed to be not statistically significant after including the mediator ( $b=-0.0474$ ;  $t=-0.1939$ ;  $p=0.8466$ ).

However, the indirect effect of the independent variable (use of eco-label) on the dependent variable (purchase intention) was found to be significant ( $b=-0.1519$ ;  $LLCI=-0.3261$ ;  $ULCI=0.0051$ ), as the confidence interval did not include zero.

Therefore, trust mediates the relationship between the use of eco-label and purchase intention, **supporting hypothesis H2a.**



Notes:  
 \*\* =  $p < 0.001$   
 ns = not significant

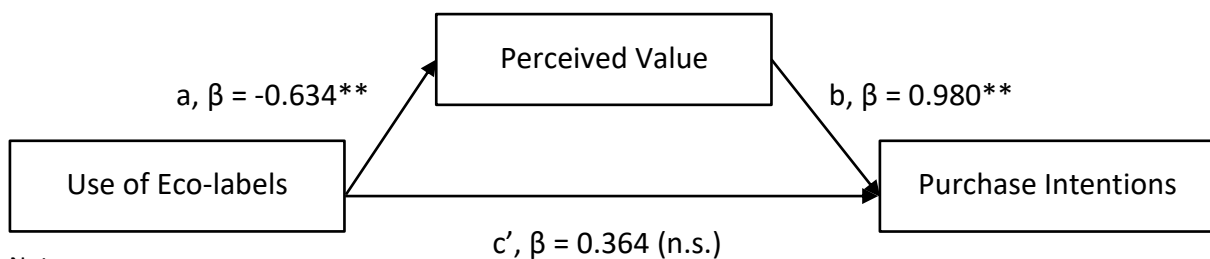
Figure 4 - Mediation of Trust on Purchase Intention

Regarding **hypothesis H3a**, the results showed that the use of eco-label had a significant negative effect on perceived value ( $b=-0.6339$ ;  $t=-3.4540$ ;  $p=0.0008$ ). Perceived value was found to have a significant positive influence on purchase intention ( $b= 0.9797$ ;  $t=10.1043$ ;  $p=0.0001$ ).

The direct effect of the use of eco-label on purchase intention was not significant when controlling perceived value ( $b=0.3645$ ;  $t=1.8473$ ;  $p=0.0674$ ).

The indirect effect of the independent variable on the dependent variable was found to be significant ( $b=-0.4509$ ;  $LLCI=-0.7426$ ;  $ULCI=-0.1872$ ), as the confidence interval did not include zero. These results show a full mediation effect. The lack of direct effect of the independent variable on purchase intention (when controlling for perceived value), along with a significant indirect effect through perceived value, indicates that the impact of eco-labels on purchase intention is completely mediated by higher perceived value generated by this label.

**Hypothesis H3a is supported.**



Notes:  
 \*\* =  $p < 0.001$   
 ns = not significant

Figure 5 - Mediation of Perceived Value on Purchased Intention

#### 4.5. MODERATION EFFECT

Firstly, it was analysed participants' Environmental Knowledge scale. The median value of Environmental Knowledge was 4.6667. Based on this median, a new categorical variable was created: participants who scored 4.67 or higher were classified as having high environmental knowledge. Participants who scored below 4.67 were classified as having low environmental knowledge.

To test the moderation analysis, PROCESS SPSS Model 7 (developed by Hayes) was used.

In the analysis, the independent variable was the use of eco-label, purchase intention was the dependent variable, perceived value and trust were the mediators, and environmental knowledge was tested as the moderator.

Regarding **hypothesis H4a**, the results showed that the interaction between the independent variable and environmental knowledge did not significantly predict mediator trust ( $b=0.0212$ ;  $t=0.0471$ ;  $p=0.9625$ ).

Concerning the indirect effect, for participants with low environmental knowledge, the independent variable on the dependent variable (mediated by trust) was not significant ( $b=-0.2103$ ;  $LLCI=-0.5197$ ;  $ULCI=0.0434$ ). The indirect effect regarding the participants with high environmental knowledge was also shown to be statistically significant ( $b=-0.2004$ ;  $LLCI=-0.5873$ ;  $ULCI=0.1466$ ).

The index of moderated mediation was not significant, therefore, **hypothesis H4a was not supported.**

Concerning **hypothesis H4b**, the results showed that the interaction between the independent variable and environmental knowledge did not significantly predict perceived value ( $b=-0.3359$ ;  $t=-0.8796$ ;  $p=0.3811$ ).

For participants with low environmental knowledge, the indirect effect of the use of eco-labels on purchase intention (mediated by perceived value) was not significant ( $b=-0.4745$ ;  $LLCI=-1.0338$ ;  $ULCI=0.0424$ ), as the confidence interval included zero.

In contrast, the indirect effect was significant for participants with high environmental knowledge ( $b=-0.8014$ ;  $LLCI=-1.3929$ ;  $ULCI=-0.3003$ ), as the confidence interval did not include zero, indicating a negative moderation effect.

<b>Environmental Knowledge</b>	<b>Effect</b>	<b>BootSE</b>	<b>BootLLCI</b>	<b>BootULCI</b>
<b>Low EK</b>	-0.4745	0.2740	-1.0338	0.0424
<b>High EK</b>	-0.8014	0.2772	-1.3929	-0.3003

Table 7 - Conditional Indirect Effect by Level of Environmental Knowledge

However, the index of moderated mediation was not significant, as the confidence interval contained zero (index=-0.3268; LLCI=-1.0779; ULCI=0.3637).

Although the index of moderated mediation was not statistically significant, perceived value has been shown to mediate the relationship between the presence of eco-label and purchase intention among participants with high environmental knowledge. Therefore, **hypothesis H4b is partially supported.**

## 4.6. DISCUSSION

This chapter discusses the results obtained in this research and compares them with existing literature. The following table presents a summary of the hypotheses proposed and their corresponding outcomes in this study.

Hypothesis	Verification
H1: The use of eco-labels by fashion retailers positively mediates purchase intentions	Rejected
H2: Trust positively mediates the relationship between the use of eco-labels and purchase intentions of fashion products.	Supported
H3: Perceived value positively mediates the relationship between the use of eco-labels and purchase intentions of fashion products.	Supported
H4a: Environmental knowledge moderates the impact of eco-labels on consumer responses, with consumers with more knowledge inferring more trust when interacting with eco-labels in fashion products	Rejected
H4b: Environmental knowledge moderates the impact of eco-labels on consumer responses, with consumers with more knowledge perceiving more value when interacting with eco-labels in fashion products	Partially supported

Table 8 - Hypothesis Verification

The results of this study did not support hypothesis 1 (H1), which proposed that the presence of an eco-label would directly increase consumers' purchase intention. Although the mean purchase intention was slightly higher for participants exposed to the scenario with the eco-label, the difference wasn't statistically significant. One possible explanation could be the current "overload" and diversity of eco-labels in the market.

The eco-label index lists over 100 different eco-labels applicable to textiles, many of which differentiate in criteria/design and scope, leading to consumers' similarity, overload and confusion (Ziyeh and Cinelli, 2023).

Low familiarity with specific eco-labels may lead to skepticism, reducing the intended positive influence of eco-labels on consumer decision-making (Ranasinghe & Jayasooriya, 2021).

Despite the absence of a significant direct effect, the mediation analysis provided valuable insights. The presence of eco-label was found to influence purchase intention indirectly through moderation variables, trust and perceived value, confirming both hypotheses H2 and H3 were supported. These results are consistent with previous research suggesting that eco-labels function not only as informational cues, but also as credibility signals that can enhance consumer confidence and perceptions of value confidence and value (Taufique et. al, 2016; Tesla et. al, 2015). According to Taufique et. al (2016), consumers often demand a combination of eco-label knowledge and trust to be influenced by sustainability claims. Therefore, even in the lack of a direct effect, eco-labels play a crucial role by activating psychological mechanisms that influence consumer decision-making.

Although perceived value was a significant positive predictor of purchase intention, the presence of the eco-label resulted in a decrease in the perceived value of the product. This unexpected finding may suggest that some consumers associate eco-labels with higher prices or lower product performance, as it was reported before as concerns by Daugbjerg et al. (2014) and Testa et al. (2015). Daugbjerg et al. (2014) suggested that when consumers lack knowledge about what an eco-label represents, they may form unrealistic or incorrect expectations, which can influence the product's perceived value. The prevalence of green claims/greenwashing has been concluded by Testa et al. (2015) and Taufique et al. (2016) which weakens the overall credibility of eco-labels and affects consumer trust. The authors Koa and Phua (2024) describe this phenomenon as a "boomerang effect", since eco-labels may trigger skepticism/doubt among more informed consumers (instead of serving as quality cues). According to their research, ambiguous or poorly communicated eco-labels can trigger negative biases that diminish their intended effectiveness.

Thøgersen et al. (2010) highlights the importance of consumer self-confidence in interpreting environmental claims and/or labels. The author argues that labels can only be effective if consumers feel capable of understanding them. Consequently, consumers with higher environmental literacy/knowledge may not only be more demanding but also more critical, which could explain the negative association found between eco-labels and perceived value.

Regarding the moderator variable, environmental knowledge was shown to be significant regarding perceived value. For participants with high environmental knowledge, the presence of the eco-label had a significant yet negative indirect effect on purchase intention via perceived value.

This result might suggest this group is more critical and skeptical of eco-labels, which could be explained by a greater awareness of greenwashing practices and/or complexities behind sustainability claims. This interpretation is supported by Taufique et. al (2016), Diekel et al. (2021) and Houf et al (2024), who found that although eco-label knowledge can negatively affect pro-environmental behavior directly (due to skepticism) – it may still have a positive indirect influence a positive indirect influence through trust. According to Taufique et. al (2016), informed consumers are usually critical of eco-labels when they perceive the information source as not credible (or suspect brand and corporate motives behind sustainable claims). Similarly, Diekel et al. (2021) found that consumers with higher environmental knowledge are more likely to “inspect” and reject vague green claims.

In contrast, for participants with low environmental knowledge, the presence of the eco-label had no significant impact (neither positively or negatively) on their perceptions of the product/behavior. These findings may prove the importance of consumer segmentation towards the development of marketing strategies.

## 5. CONCLUSIONS

### 5.1. THEORETICAL IMPLICATIONS

This research contributes to the existing literature on sustainable consumption and eco-labelling by providing new insights on how eco-labels may affect consumer perceptions and purchase intention.

The results demonstrate that eco-labels influence purchase intention indirectly, through psychological mechanisms such as trust and perceived value. While trust positively mediated the relationship between eco-label and purchase intention, perceived value showed a negative mediating effect. These results suggest that although consumers may trust eco-label, they might simultaneously perceive eco-labelled products as less valuable. These results are aligned with Daugbjerg et. al (2014), who argue that a lack of accurate understanding of an eco-label can lead consumers to form unrealistic expectations (and consequently diminish product appeal).

The boomerang effect referred by Koa and Phua (2024) shows that when eco-labels are poorly communicated or vague, consumers with higher environmental literacy may negatively perceive/evaluate a product. This is also reinforced by Diekel et al. (2021), who give highlights that consumers with higher environmental literacy tend to apply rigorous standards when analyzing sustainability claims.

Additionally, the widespread green claims (often called greenwashing) have been shown to reduce trust and diminish eco-label effectiveness (Testa et al., 2015; Taufique et al., 2016). These insights reinforce the importance of third-party certification system and clearer communication to ensure credibility in the use of eco-labels. As the authors Thøgersen et al. (2010) highlight, the level of a consumer's confidence when interpreting environmental claims is critical for these labels to have a real influence. As it was emphasized by Feuß et al. (2022) and Panopoulos et al. (2023), credibility and clarity of eco-label communication are key factors influencing consumer engagement with sustainable products.

Secondly, this research contributes to literature by examining Environmental Knowledge as a moderator factor. The study showed that participants with different levels of environmental

knowledge behave differently. Participants with higher environmental knowledge displayed more skepticism and associated the eco-label with lower perceived value. Surprisingly, these participants perceived lower product value. These findings support the notion that consumers who are more concerned about the environment are not necessarily more prone to buying products with eco-labels. These results align with Taufique et. al (2016) findings, who claimed the interaction between label credibility and consumer knowledge is essential to foster trust and influence pro-environmental behavior.

In contrast, participants with low Environmental Knowledge showed less responsiveness to the presence of the eco-label, showing no significant changes in perceived value or purchase intention. This may reflect a lack of awareness/familiarity of what eco-labels represent, limiting their effectiveness as a credible cue for this segment.

Finally, although this research focused on consumer intention rather than actual behavior, previous research highlights that a gap often exists between what consumers intend and what they do (Feuß et al., 2022). Future research may benefit from including behavioral measures or simulated shopping environments to bridge this gap between intention and behaviour.

These results lead to acknowledging the necessity of consumer segmentation and strategy when tailoring communication strategies to account for different levels of environmental knowledge and literacy.

## **5.2. MANAGERIAL IMPLICATIONS**

This thesis provides important findings for brands and policymakers operating in the sustainable fashion sector.

Although the presence of an eco-label did not have a significant direct effect on purchase intention, the results offer important insights into the indirect ways eco-labels may influence consumer behavior. Both perceived value and trust were found to fully mediate the relationship between the presence of an eco-label and purchase intention. Surprisingly, the presence of eco-label in this study was associated with lower levels of trust and perceived value.

This paradoxical effect is consistent with previous research that proved that eco-labels may create confusion/skepticism, specifically when consumers do not understand the label

credibility (Taufique et al., 2016; Thøgersen et al., 2010). Hayat et al. (2019) correspondingly points out that when consumers lack clarity/familiarity, environmental claims can “backfire” by causing disbelief.

The results highlight that insufficient or unclear information about eco-labels (or just including as an icon in the product page) may lead to consumers’ ambiguity and confusion. To address this, brands should invest on environmental literacy and share beyond a logo on product pages. Effective eco-labelling strategies should be complemented with clear communication about a label’s meaning, scope, and include a third-party certification. Additionally, marketers should invest in segmentation communication based on consumers’ level of environmental knowledge, as the results in this research suggest that highly informed consumers are more likely to critically analyze eco-labels, while consumers with lower environmental knowledge may not pay closer attention/process them deeply (Houf et al., 2024).

In conclusion, brands cannot rely only on displaying an eco-label logo on their products to improve consumers’ purchase intentions. They must improve by communicating the eco-labels’ meaning and scope, to provide credibility, transparency, and improve environmental literacy to consumers.

### **5.3. LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS**

This research presents several limitations. One limitation concerns the available literature on eco-labels within the sustainable fashion sector. When compared to other sectors like food and cosmetics, there is a limited theoretical grounding.

Another limitation was the relatively small sample used in the experimental design. This relatively small sample may not represent the diversity of consumers in terms of age, nationality and other socio-economic variables. Future research should apply experimental design/questionnaires with larger and more diverse samples in terms of age and nationality. Additionally, although the study examined the mediating role of trust and perceived value, it did not incorporate other potentially influential variables such as eco-label knowledge, eco-literacy and environmental attitudes

Results suggest that the effectiveness of eco-labels may depend on consumers’ ability to recognize them, a factor that wasn’t directly measured in this study. Future research should

explore eco-label recognition/familiarity, as this may moderate the impact of eco-labels on perceived value and purchase intentions.

An additional limitation concerns the focus on purchase intention, which may not reflect actual consumer behavior. As noted by Feuß et al. (2022), there is often a gap between intention and action. Future research should consider incorporating behavioral tracking or eye-tracking , to capture real responses to eco-labels in shopping contexts (Houf et al., 2024).

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# APPENDIX A

## Nova IMS Ethics Committee Approval



This is to certify that

Project No.: **DDMKT2025-1-152695**

Project Title: **The Impact of Eco-Labels on Consumer Behaviour in Fashion Retailing Context**

Principal Researcher: **Rita Rodrigues**

according to the regulations of the Ethics Committee of NOVA IMS and MagIC Research Center this project was considered to meet the requirements of the NOVA IMS Internal Review Board, being considered **APPROVED** on 1/22/2025.

It is the Principal Researcher's responsibility to ensure that all researchers and stakeholders associated with this project are aware of the conditions of approval and which documents have been approved.

The Principal Researcher is required to notify the Ethics Committee, via amendment or progress report, of

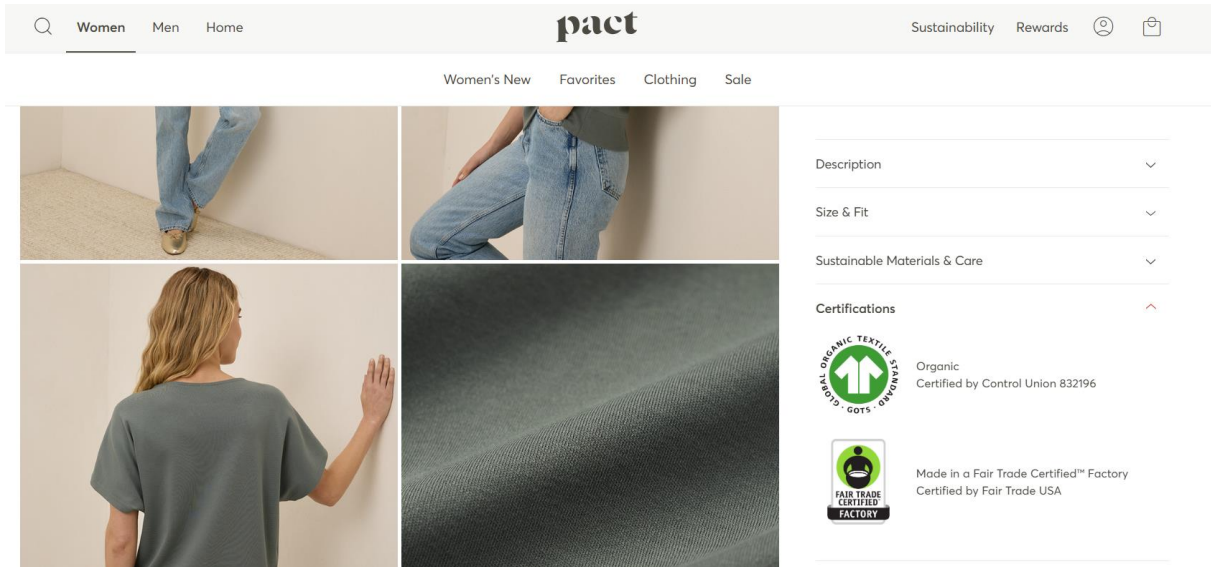
- Any significant change to the project and the reason for that change;
- Any unforeseen events or unexpected developments that merit notification;
- The inability of the Principal Researcher to continue in that role or any other change in research personnel involved in the project.

Lisbon, 1/22/2025

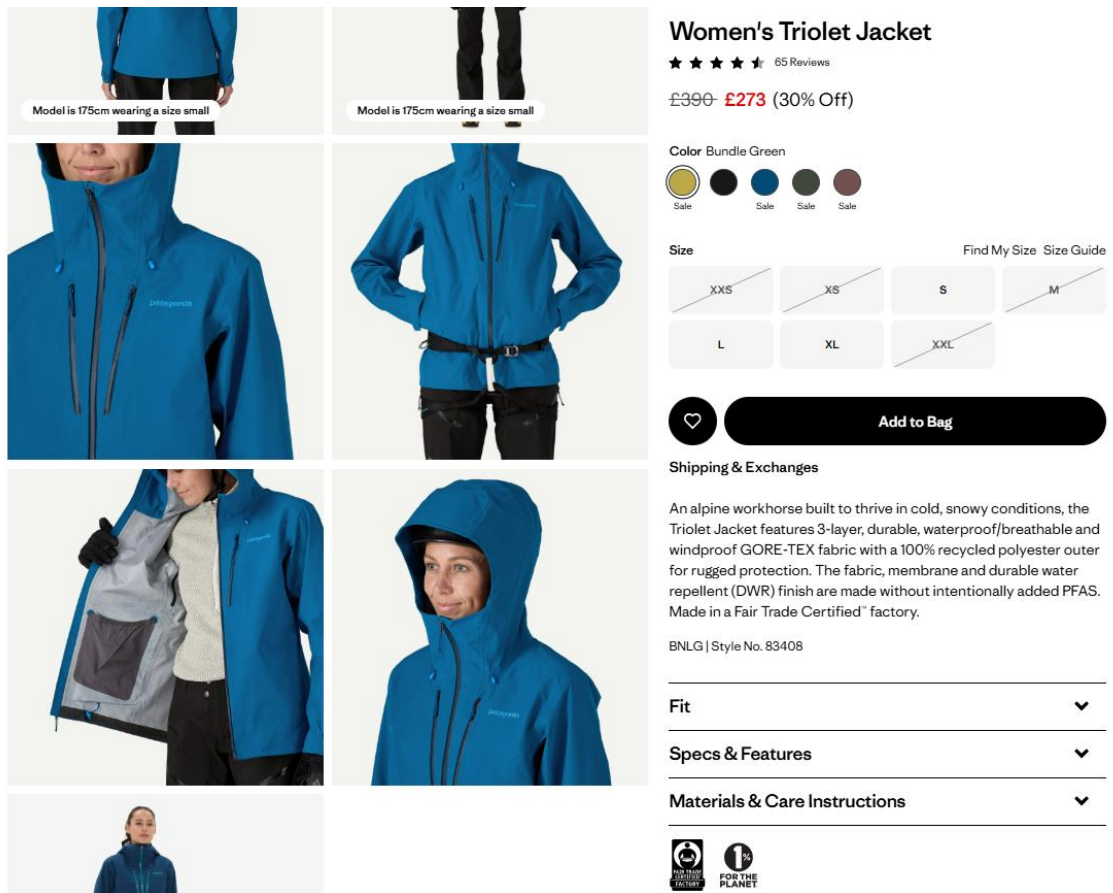
NOVA IMS Ethics Committee  
ethicscommittee@novaims.unl.pt

# APPENDIX B

## Pilot Study - Results of the research regarding eco-labels on fashion products



Example of product page with label(s) plus claim (Pact)



Example of product page with label(s) plus claim (Patagonia)

OUT OF COLLECTION

# HEAVYWEIGHT SWEATSHIRT

€67.00 €96.00

SIZE CHART  
Charcoal

~~XS~~  S ~~XL~~ ~~XXL~~

ADD TO CART

OVERVIEW **SPECS** SIZING & CARE SUSTAINABILITY SHIPPING & RETURNS

100% Organic Cotton (GOTS Certified)  
480 g/sqm  
Heavyweight French Terry construction  
Ribbed hem and cuffs  
Brushed inside to keep you warm  
Extra soft

Example of product page with claim (ISTO)

## CASACO DE MALHA NOELLE

Creme — 110 €

DESCRICAÇÃO - DETALHES E COMPOSIÇÃO - ATELIERS

- Casaco de manga CROP em algodão orgânico
- Tricô de fantasia em ponto aberto
- Acabamentos e botões crochê
- Decote redondo
- Comprimento a partir dos ombros 46,5 cm (para um S)

100% biológico | Certificado GOTS | 100% natural | Embalagem reciclada | Atelier auditado

Creme

XXS XS S M L XL XXL XXXL

CONSELHOS DE TAMANHOS - GUIA DE TAMANHOS

Se hesitar entre dois tamanhos, escolha o tamanho acima. Caso contrário, escolha o seu tamanho habitual.

ADICIONAR AO CARRINHO

Example of product page with label (Sezane)

## APPENDIX C

### Pilot Study – Eco-labels and Main Certification Focus

Type of Eco-label	Main Certification Focus
<b>Fair Trade Certified Factory</b>	Manufacturing process (ethical working conditions, fair wages, social standards)
<b>GOTS Certified</b>	Raw material and manufacturing process (organic fibres, social/environmental criteria)
<b>OEKO-TEX Certified</b>	Manufacturing process (human ecological safety, chemical safety)
<b>Fair Trade Certified Cotton</b>	Raw material (ethical cotton production and farming practices)
<b>Bluesign Certified</b>	Manufacturing process (chemical safety, environmental and resource optimization)
<b>Fair Trade Organic Cotton</b>	Raw material (organic cotton + fair trade agricultural practices)
<b>TENCEL™</b>	Raw material and processing technology (closed-loop production)

Adapted from Ranasinghe & Jayasooriya (2021), Hayat et al. (2019) and Houf et al. (2024)

## APPENDIX D

### Online Questionnaire (Study 1)

Dear participant, this is research about consumer behavior. You will be asked to answer a questionnaire that takes approximately 03 minutes. There is no financial loss or risk involved in participating in this research. Your participation is voluntary, and you can withdraw at any time. Your response is anonymous and will be used for academic purposes only. If you have any questions, suggestions or comments about the survey, don't hesitate to get in touch with me: 20231359@novaims.unl.pt.

I declare that I am 18 years of age or older and agree to participate in this research. I declare that I have been informed that my participation in this study is voluntary, that I can withdraw from this survey at any time without any penalty, and that all data are confidential. I understand that this study does not pose serious risks. I have read and understood the consent form above and willingly participate in this study.

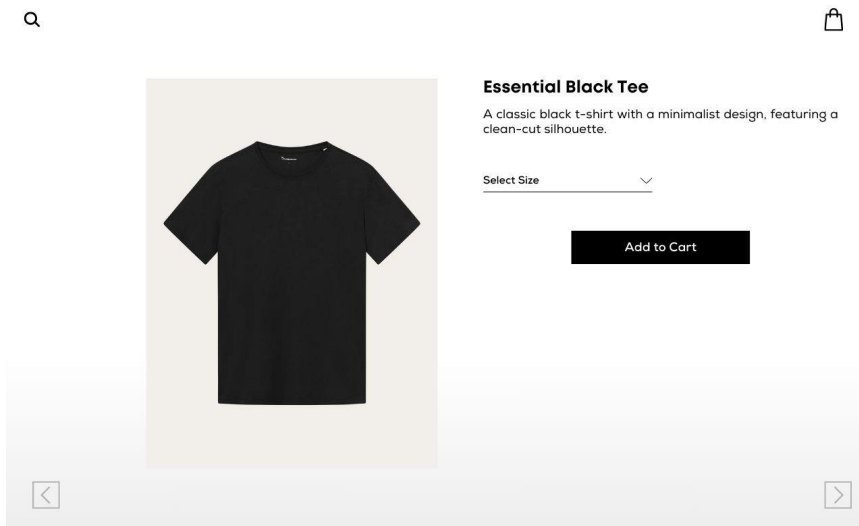
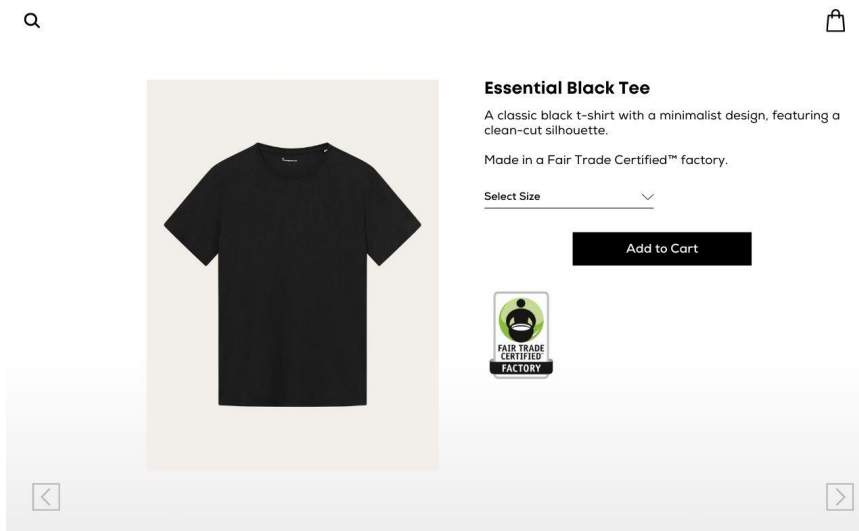
Yes

No

Imagine you're shopping for a T-shirt online.

Before deciding which one to purchase, you browse through all the available options. This T-shirt catches your attention.

Please answer the following questions with this product in mind.



Did the product you saw contain any eco-label and sustainability-related claim?

- Yes, there was an eco-label and claimed to be produced in a Fair Trade Certified Factory
- No, there was no eco-label or sustainability-related claim about its production
- I don't remember

Please answer the following question having in mind the situation you just saw.

	1	2	3	4	5	6	7
The product I just saw had an eco-label	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The product I just saw had a sustainability label	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the following questions having in mind your knowledge about the topic "sustainability". Rate the following statements on a scale of 1 "Strongly Disagree" to 7 "Strongly Agree".

	1	2	3	4	5	6	7
I believe that I am informed about child labour/sweatshop issues in the fashion apparel manufacturing business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am knowledgeable about social equity issues (e.g. working conditions of factory workers, fair wages for factory workers) in the fashion apparel business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I know more about socially responsible apparel business than the average person

I believe that I am informed about environmental issues (e.g. eco-fashion, environmental impact of clothing manufacturing) in the fashion apparel manufacturing business.

I understand the environmental impact of apparel products across the supply chain.

I am knowledgeable about apparel brands that sell environmentally friendly products

Rate the following statements on a scale of 1 "Strongly Disagree" to 6 "Strongly Agree".

	1	2	3	4	5	6
I believe that eco-labels demonstrate a genuine commitment to environmental protection and ethical production.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the claims made by eco-labels are accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If an eco-label makes a claim or promise about a product, I trust that the claim is reliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rate the following statements on a scale of 1 "Strongly Disagree" to 7 "Strongly Agree".

	1	2	3	4	5	6	7
Purchasing this product would be worth it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This product has a positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

social image.

Overall, this product would deliver good value.

This product will provide comfort and great quality.

Rate the following statements on a scale of 1 "Strongly Disagree" to 7 "Strongly Agree".

1            2            3            4            5            6            7

I would consider purchasing this product

I intend to try this product

I am likely to buy this product

Please assess how much you agree with the following statements on a scale of 1 "Strongly Disagree" to 7 "Strongly Agree".

	1	2	3	4	5	6	7
Most companies mislead with words about the environmental features of their products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most companies mislead with visuals or graphics about the environmental features of their products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most companies provide vague or seemingly un-provable environmental claims for their products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most companies overstate or exaggerate the environmental features of their products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most companies leave out or hide important information about the real environmental features of their products

What does an eco-label on a clothing product (e.g., a t-shirt) mean to you?

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Please rank the following factors from most to least important when purchasing clothing, with 1 being the most important and 5 the least important.

\_\_\_\_\_ Design and aesthetic

\_\_\_\_\_ Quality of fabrics

\_\_\_\_\_ Price

\_\_\_\_\_ Eco-label certification

\_\_\_\_\_ Brand reputation

Gender:

Male

Female

Non-binary

Prefer not to say

How old are you?

18 - 25

26 - 35

36 - 45

46 - 55

> 55

In which country do you currently live in?

Portugal

Spain

France

Germany

Netherlands

UK

Other \_\_\_\_\_

What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

- Primary School
- Middle School
- Secondary School
- Bachelor's Degree
- Master's Degree
- Doctoral Degree

What is the gross annual income of your household? (Indicate an estimate)

- Less than 10.000€
- 10.000 to 19.999€
- 20.000 to 29.999€
- 30.000 to 39.999€
- 40.000 to 49.999€
- 50.000€ or more

