
# Beyond the Label

## The Impact of Product Traceability Information on Consumer Valuations of Fast Fashion Brands

Sara Viana
152122226

Dissertation written under the supervision of Prof. Vera Herédia Colaço

Dissertation submitted in partial fulfilment of requirements for the MSc in International Management with Specialisation in Strategy and Consulting, at the Universidade Católica Portuguesa

June 2024

**Title:** Beyond the Label

The Impact of Product Traceability Information on Consumer Valuations of Fast Fashion Brands

**Author:** Sara Viana

**Abstract**

Throughout the years, the low-cost, fast-paced model of fast fashion has significantly contributed to the current environmental degradation due to extensive supply chains, energy-intensive production processes, and disclosure of selective information. As consumer concerns about environmental and social sustainability grow, the ability to trace a product back to its origin becomes crucial for ensuring transparency and sustainable practices. This dissertation explores how different levels of product traceability information (low, moderate, high) influence consumers' brand valuations, namely on purchasing intention, willingness to pay (WTP), brand trust, and brand authenticity. Additionally, it examines the moderated-moderation role of brand transparency perceptions and consumers' sustainable awareness and knowledge of the relationship between the level of product traceability information and consumers' brand valuations. The findings suggest that higher levels of product traceability positively impact consumers' brand valuations. However, this effect is especially impacted by both brand transparency perceptions and consumers' sustainable awareness and knowledge levels. Moderated-moderation results reveal that as consumers' sustainability awareness and knowledge increase, higher product traceability information enhances brand authenticity and purchasing intentions for brands perceived as transparent. However, under these conditions, higher product traceability information leads to lower willingness to pay results. This research contributes to the literature on supply chain transparency and product traceability information with theoretical and managerial insights that could influence the future path of fast fashion brands.

**Keywords:** Fast Fashion; Sustainability; Sustainbale Fashion; Transparency; Traeacbility; Consumers' Sustainable Knoweledge and Awareness; Purchasing Intention; Willingness to Pay; Brand Trust; Brand Authenticity

**Resumo**

Ao longo dos anos, o sistema de baixo custo e ritmo acelerado de *fast fashion* tem contribuído significativamente para a degradação ambiental, devido às suas extensas cadeias de abastecimento, processos de produção e divulgação seletiva de informações. À medida que a consciencialização dos consumidores sobre a sustentabilidade aumenta, rastrear um produto até à sua origem torna-se crucial para garantir a transparência e as práticas sustentáveis. Esta dissertação explora como diferentes níveis de informação sobre a rastreabilidade do produto (baixo, moderado, alto) influenciam a avaliação dos consumidores sobre uma marca, em termos de intenção de compra, disposição a pagar, e percepções de confiança e autenticidade da marca. Este estudo examina o papel moderação-moderada das percepções de transparência da marca e do conhecimento sustentável dos consumidores nessa relação. Os resultados sugerem que níveis mais elevados de rastreabilidade dos produtos têm um impacto positivo nas perceções da marca. Concretamente, à medida que o conhecimento sustentável dos consumidores aumenta, maior rastreabilidade dos produtos reforça a autenticidade da marca e as intenções de compra de marcas consideradas transparentes. No entanto, nestas mesmas condições, uma maior rastreabilidade dos produtos conduz a uma disponibilidade a pagar menor. Esta investigação contribui para a literatura sobre a transparência da cadeia de abastecimento e a informação sobre a rastreabilidade dos produtos, oferencedo conhecimentos teóricos e práticos para o futuro de *fast fashion*.

**Plavras-Chave:** Fast Fashion; Sustentabilidade; Moda Sustentável; Transparência; Rastreabilidade; Conhecimento e Consciência Sustentável dos Consumidores; Intenção de Compra; Disposição a Pagar; Confiança na Marca; Autenticidade da Marca

**Acknowledgements**

I want to start by expressing my profound appreciation to my supervisor, Prof. Vera Herédia Colaço, for all her insightful feedback and knowledge. Her continuous guidance and availability have significantly shaped the journey and the outcome of this dissertation, and I am deeply thankful for that.

A heartfelt thank you goes to all my friends, particularly Mariana Diegues for all the support, understanding, and kindness. Despite the physical distance between us, we embarked on our thesis journeys simultaneously and were always there to support and encourage each other.

Profound thanks also go to my boyfriend for his constant patience, love, and support during this process, which tremendously helped me to stay motivated and believe in myself.

Finally, I am enormously thankful to my family, especially my sister, who has always given me unconditional support and pushed me to do my best. I am eternally grateful for her willingness to listen and offer help whenever possible. My academic journey would not have been possible without their endless support and belief in me.

Thank you all for believing in me!

**TABLE OF CONTENTS**

**List of Figures**



**List of Tables**

# 1. INTRODUCTION

## 1.1 Problem Definition and Relevance

On average, most clothing items are typically worn only approximately seven to eight times before being discarded (Mandaric et al., 2021). In the fashion industry, 85% of textiles are incinerated or end up in landfills, where most of these materials can be reused or recycled (UNFCCC, 2023). The global apparel and textile industry ranks among one of the most polluting sectors because of its unsustainable clothing production practices. This industry accounts for about 10% of worldwide greenhouse gas emissions, owing to its extensive supply chains and energy-intensive production processes, being responsible for nearly half of the fashion industry's emissions (Bläse et al., 2024). A striking example of resource usage in this industry is the production of denim jeans; it takes 10,000 litres of water to grow the cotton required for a single pair of jeans, an amount that a person would typically consume over a decade (UNFCCC, 2023).

Fast fashion refers to the quick transition of design from catwalks to stores, addressing the ongoing demand for diverse fashion trends at low prices. With globalisation, supply chains have expanded internationally, focusing on areas with more affordable labour for fibre growth, textile manufacturing, and garment assembly. This approach helps maintain low prices, fuelling the demand for cheap clothing and typically involves outsourcing to low- and middle-income countries. Brands that follow this 'take-make-waste' business model typically lack ownership over their supply chain, increasing its complexity and making it more difficult to trace (Badhwar et al., 2023).

The complexity of these supply chains contributes to reduced transparency, making it challenging to trace the origins and verify the authenticity of products. Additionally, corrupt and unethical practices within these supply chains, such as forced child labour, modern slavery, and environmental neglect, often remain concealed from retailers and consumers (Badhwar et al., 2023). Although such practices may boost a retailer's profit margin, they risk jeopardising consumer trust and negatively impact consumer's health in severe situations (Bikoff et al., 2015; Badhwar et al., 2023).

Opposing the concept of fast fashion, sustainable fashion, also known as slow fashion, has evolved in the past decades. Slow fashion typically involves production on a smaller scale, with frequently reduced collections emphasizing ethical practices and quality over quantity. Using a

classical type of designs, local resources, and traditional manufacturing techniques (Bläse et al., 2024). However, despite widespread awareness of unsustainable practices in the fashion industry and the increase of sustainable fashion brands such as ‘Patagonia’ or ‘Reformation’, fast fashion remains popular due to 21st-century consumer behaviour (Bläse et al., 2024), and only a few people opt for green products, especially if they have to make any sacrifices to purchase more sustainable products such as higher prices or reduced performance (Olson, 2013).

Previous studies indicate that consumers often buy items from price-sensitive fast fashion brands, such as Zara, Primark, and H&M. Although consumers are more concerned about climate change and pollution, their purchase decisions when buying clothes do not demonstrate a positive attitude towards sustainability, highlighting an attitude-behaviour gap (Mandaric et al., 2021).

Various obstacles contribute to this gap, such as the challenge of achieving transparency in a globalised supply chain (Mandaric et al., 2021). Enhancing supply chain transparency can help minimise this gap by providing consumers with clear, verifiable information about the sustainability of their clothing choices. When consumers are educated about the true environmental and social impacts of their purchases, they may be more likely to align their buying behaviour with their sustainability concerns (Jeong & Ko, 2021). However, despite the growing number of sustainable fashion choices, the environmental footprint of the fashion industry continues to be concerning, and there often remains a disconnect between consumers' attitudes toward sustainability and their actual purchasing behaviour (Bläse et al., 2024).

This dissertation explores the absence of transparency and traceability within fast fashion supply chains and analyses its effects on consumers’ purchasing decisions and perceptions of authenticity and trust towards fast fashion brands. It is important to analyse supply chain and traceability since they can help bridge the attitude-behaviour gap by providing consumers with the information necessary to make more informed and ethical purchasing decisions.

Therefore, building on these previous connections, this research aims to foster a more sustainable fashion industry and encourage more conscious consumer behaviour, which leads to the following research questions that will be further explored in greater depth.

## 1.2 Objectives and Research Questions

In today's world, promoting sustainable practices is more crucial than ever for preserving the environment, with consumer behaviour serving as a significant factor. Raising awareness of the green aspect of fashion is essential to mitigate its detrimental effects on the environment, restrain excessive consumption, and extend the lifespan of clothing items (Mandaric et al., 2021).

Given the disparity between the growing interest and awareness in sustainably produced fashion items and the ongoing consumers' purchasing patterns for fast fashion, the main purpose of this dissertation is to answer the following research questions:

***RQ1: How does transparency in supply chain practices influence consumer valuations in fast fashion?***

One of the main objectives of this study is to explore the impact of transparent supply chain practices on consumers' decision-making processes in the fast fashion industry. Transparency in supply chain practices provides consumers with information about how and where products are manufactured, including labour conditions, environmental practices, and ethical standards, which can influence their buying choices. Specifically, it analyses how consumers evaluate brands when provided with product traceability information, and how this impacts their decisions in a market traditionally driven by cost and convenience.

***RQ2: How does brand transparency affect consumers' valuations of products with traceability information disclosure?***

Additionally, this research focuses on the impact of perceived brand transparency on consumers' valuations. In other words, it explores whether greater product traceability information in fast fashion intensifies perceptions of brand transparency, and therefore, enhances brand image and influences perceptions of ethical and sustainable practices. Previous studies have shown that consistent brand transparency aligns a brand's claims with its actions, reinforcing consumer perceptions of brand authenticity and behavioural intentions (Yang and Battocchio, 2021). Studying the potential shift in brand-consumer relationships is crucial due to the growing consumer demands for corporate accountability and ethical transparency in the fashion industry (Neumann et al., 2020).

***RQ3: To what extent do prior sustainability awareness and knowledge influence brand transparency perceptions on the relationship between information disclosure and consumers' brand valuation?***

The third research question addresses how consumers' sustainability awareness and knowledge can impact perceptions of information disclosure and brand valuations. Past studies argue that consumers with limited sustainability knowledge often rely on cognitive shortcuts to form their perceptions of brands (Alba and Hutchinson, 1987). In contrast, well-informed consumers demand higher sustainable standards and complete transparency across the fashion supply chain, wanting to know the details of where and how products are made (McKinsey & Company & The Business of Fashion, 2019). This suggests that the information a brand shares about its products can be interpreted differently based on consumers' prior knowledge and awareness of the fashion industry and existing sustainability issues.

Furthermore, consumers' perception of environmental impact influences how they collect product information, which can drive them to more sustainable purchases (Asif et al., 2018; Nam et al., 2017). As such, this research will examine the extent to which product information disclosure impacts consumers' brand valuations based on their level of sustainability awareness and knowledge and brand transparency perceptions.

### 1.3 Dissertation Structure

The initial chapter of the dissertation introduces the core issue and relevance of the research topic, alongside the research questions that shape the thesis development. An overview of existing academic literature is then provided concerning the topics of the fashion industry and sustainability, fashion supply chain, consumers' sustainable awareness and knowledge, and lastly, consumers' brand valuations. Further on, a set of hypotheses is developed, leading to the empirical study of this dissertation. Following the sections on methodology and data analysis section, the research findings are discussed. Lastly, the final chapter provides a conclusion that discusses the study's theoretical and practical implications and proposes suggestions for future research.

# 2. ACADEMIC LITERATURE REVIEW

## 2.1 Fashion Industry and Sustainability

### *2.1.1 Fast Fashion*

According to Chang and Jai (2015), fast fashion can be characterised as *McDonaldization*, as it has attributes similar to those of McDonald's fast-food restaurants. McDonaldization refers to the growing influence of fast-food industry principles worldwide. This type of fast-food chain model is characterised by its efficiency and fast-paced nature, as it can prepare and serve food within a couple of minutes, which is similar to the fast fashion industry.

Fast fashion retailers employ quick and efficient supply chains that enable them to produce and deliver products in a matter of weeks, which, in comparison with designers of luxury brands, typically takes up to six months for new trends shown on catwalks to become available to consumers (Joy et al., 2012). With its rapid pace and continuous promotion to customers of the latest fashion trends, fast fashion strategy leads consumers to purchase more clothes than necessary. Furthermore, similar to McDonald's products, fast fashion items are also accessible and affordable (Chang and Jai, 2015).

Moreover, fast fashion is a business strategy of responding as rapidly as possible to current and emerging fashion trends by providing continuously updated fashion items to customers. To achieve this blend of convenience and speed, fast fashion requires an efficient supply chain, so retailers utilize both global and local sourcing locations, which are primarily selected based on two key criteria: cost and time (Arrigo, 2020).

With low prices and trend-driven products, consumers tend to make more impulsive purchases (Peters et al., 2021). This impulsiveness is reinforced by the scarcity that comes from limited stocks and time availability. The combination of limited clothing items available for a short period and low prices enhances their appeal to consumers, and therefore, rising fast fashion consumption (Hageman et al., 2024).

This low-cost and fast-paced model carries significant environmental and labour consequences. Mass production and excessive consumption have resulted in substantial clothing waste, with discarded items ending up in landfills or incinerators, which contributes to pollution and resource depletion (Hageman et al., 2024). Around 60% of all garments produced and

purchased are thrown away within a year of their manufacture (Khare, 2019). Therefore, sustainability is a much-needed resource within the fashion industry, as reviewed next.

### *2.1.2 Sustainability in Fast Fashion*

The fashion industry is among the most resource-intensive sectors, raising significant sustainability concerns due to its extensive use of pesticides and substantial greenhouse gas emissions (The Economist, 2017). For instance, cotton production to meet the global clothing demand has already impacted the Aral Sea in Uzbekistan (BBC, 2015), causing deforestation, soil degradation, and water pollution (Hageman et al., 2024).

Furthermore, to minimize costs, fast fashion often relocates production to Asian countries to take advantage of lower labour costs, raising questions about the working conditions and workers' well-being (Hageman et al., 2024).

Clothing utilization has decreased by approximately 36%, between the period of 2000 and 2015, and clothing consumption has increased from 7kg to 13kg per person. Fast fashion has created a throw-away culture where clothing is regularly discarded and is not easily recycled. The textile waste of this industry falls into two main categories: pre textile, the waste generated before reaching consumers and post textile, the waste after consumer purchase (San Miguel et al., 2021). Fast fashion clothing garments are generally made from hard-to-recycle fibres, synthetic materials that are used to break down slowly. Additionally, woollen garments, while decomposing, release methane, further contributing to global warming (Hageman et al., 2024).

Due to the high availability of fast fashion products, consumers crave to buy more clothes, often impulsively, which enhances the disparity between concerns and actual sustainable behaviours (Mandaric et al., 2021).

### *2.1.3 Sustainable Fashion*

The fashion industry, known for its environmental pollution and waste, has also raised many societal concerns, which is the main reason why sustainable fashion is becoming more important (Mandarić et al., 2021).

Sustainable fashion, also designated as "green", "ethical", or "eco" fashion (Neumann et al., 2020), represents a fashion industry that prioritises both social and environmental responsibility. This type of fashion is characterised by its commitment to minimizing and avoiding environmental impact through the use of biodegradable and organic materials, along with eco-friendly and/or recycled fabrics. Furthermore, sustainable fashion clothes are designed

to last longer, moving away from the throwaway culture prevalent in fast fashion (Mandarić et al., 2021).

This concept of sustainable fashion covers two dimensions of the fashion sector: the green dimension and the ethical dimension. Green fashion focuses on environmental protection and sustainability, fostering the use of biodegradable fibres and recycled materials. Ethical fashion focuses more on fair trade principles, with sweatshop-free labour and equal working conditions for all employees. These dimensions emphasise the importance of sustainable practices in fashion (Shen et al., 2013).

The guiding principles of "reduce", "reuse", and "recycle" are fundamental for this approach to foster a circular lifecycle for fashion items. Thus, sustainable fashion goes beyond just textile garments, showcasing diverse applications of sustainable practices within the industry (Neumann et al., 2020; Jung et al., 2016).

The sustainability of fashion products can also be evaluated through the management of the company's supply chain. The complexity of the global supply chain and the need for transparency and traceability in manufacturing processes are crucial elements of sustainable fashion (Valor, 2007; Joy et al., 2012). The type of material used, the method of production, and the manufacturing location, being locally produced items the most sustainable option, are all key elements to define a product's sustainability. This holistic approach marks a shift in the fashion industry towards a more environmentally conscious and responsible paradigm (Neumann et al., 2020).

## 2.2 Fashion Supply Chain

The fashion industry's supply chain incorporates all the activities that go from raw material sourcing to customer delivery, along with the information systems essential to monitor these processes (Lam and Postle, 2006). Information management and sharing are crucial to achieve an effective, sustainable supply chain. Nevertheless, in the textile sector, the lack of information sharing remains a major obstacle within the supply chain. (Kumar et al., 2017).

The textile supply chain involves numerous global actors, and given the rapid changes in fashion trends, timely production and quality tracking are essential for a brand's success (Thomassey, 2010). This complex and long network involves various suppliers located worldwide, from fibre industries to retailers. Many of these brands do not own production

facilities and/or involve a mix of horizontal and vertically integrated processes, acquiring from suppliers and selling to consumers (Thomassey, 2010). Yet, despite not owning production facilities, fast fashion brands play a key role in the fashion supply chain, since traceability across the different supply chain tiers is essential to attain a transparent business (Lam and Postle, 2006). However, supply chain transparency remains an issue that poses many ethical threats, as reviewed next.

### *2.2.1 An Ethical Outlook*

The fashion and textile industries are known for their poor working conditions, as evidenced by numerous tragic incidents in recent years. One of them was in 2012, when a fire at the Tazreen Fashion Factory in Dhaka, Bangladesh, led to the deaths of 117 workers and left many others injured (Saxena, 2020). This tragedy was a wake-up call for consumers and provoked the creation of significant consumer awareness campaigns such as "Who made my clothes?" created by the Fashion Revolution movement (Omotoso, 2018). Between 2012 and 2017, there were over 1,600 reported worker deaths in the clothing industry (Common Objective, 2018). In 2020, a denim factory in India burst into flames, killing 7 workers due to inadequate fire safety measures, highlighting the inaccessible and broken supply chain systems in the industry (Bellware, 2020).

The industry also faces challenges with child labour, according to the United Nations International Children's Emergency Fund (UNICEF). The textile and footwear sectors impact over 100 million children, particularly in countries such as India and Uzbekistan, where it is commonly linked to cotton cultivation (UNICEF, 2020). The pandemic also brought more challenges to the industry, including logistics bottlenecks, material shortages, rising shipping costs, and delays in manufacturing (BoF-McKinsey&Company, 2022). These pressures on the manufacturing processes amplify the industry's already significant environmental impact from chemical use and waste generation (Nimkar, 2018; McFall-Johnsen, 2020).

Selective disclosure of information and a lack of transparency in the supply chain hides the full magnitude of these issues (Cho et al., 2015). This opaqueness complicates the tracing and verification of sustainable practices and compromises accountability. Traceability and transparency are, therefore, essential for sustainable supply chain management (SSCM).

SSCM involves the strategic and transparent integration of social, environmental, and economic objectives coordinated by inter-organizational processes (Carter and Rogers, 2008). Its performance is often judged by stakeholders' perceptions and the disclosure of crucial

sustainability information (Lambert et al., 2006). However, in the fast fashion industry, SSCM implementation remains challenging due to supply chain complexity and selective information disclosure which hinders consumers from making informed purchasing decisions (Badhwar et al., 2023).

### *2.2.2 Traceability*

In the fashion industry, traceability represents the capability to trace a product's history and journey throughout the supply chain (Kumar et al., 2017). Moe (1998) extends this definition to include tracking a product batch through all stages of production, from harvest to sales.

Traceability is crucial for sharing essential information such as design details, component descriptions, procedures, and bills of materials within the supply chain, thereby enhancing transparency (Kumar et al., 2017). Yet, the textile sector falls behind in this area; a study by Nimbalker and colleagues (2015) showed that merely 61% of retailers could completely identify their direct suppliers, and just 8% knew about their fibre suppliers. The clothing industry has only recently started to adopt enforced measures and legislation requirements, especially within the EU. The Ecodesign for Sustainable Products Regulation (ESPR), part of the Green Deal, aims to make sustainable products the norm in the EU. ESPR aims to enhance product sustainability by improving design to be more durable, reusable, repairable, recyclable, and energy-efficient. The ESPR is set to be gradually implemented starting in 2024, with full enforcement expected in the coming years to drive the transition to a circular economy (European Commission, 2022).

Traceability is a vital tool for achieving sustainability goals within the supply chain by ensuring ethical practices throughout the processes (Norton et al., 2014). Traceability can also serve as a means for quality control, marketing, customer safety, and inter-organizational monitoring. Since the apparel supply chain involves numerous actors, it is essential to use consistent and universally understood terms and definitions for information exchange, to reduce misunderstandings and improve coordination (Gobbi & Massa, 2015).

Furthermore, for consumers to effectively contribute to sustainable consumption, they must be able to access consistent and trustworthy information (Rinaldi et al, 2022). Traceability aims to help enhance consumer awareness of the environmental and human rights impacts of a product, also aligning with Sustainable Development Goal (SDG) 12 (Responsible Consumption and Production) and target 12.8: *"By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature"*

(United Nations, 2016). Despite new traceability measures, such as garment labels, this information is still relatively new to consumers. The ongoing lack of comprehensive traceability and selective disclosure by fashion brands continues to obscure issues related to ethical labour practices and environmental impacts. This makes it difficult for consumers to make informed decisions and for the industry to be held accountable for ethical and sustainable practices (Kumar et al., 2017). Therefore, it is important to assess how consumers are integrating the limited and new traceability information into their decision-making process.

### *2.2.3 Transparency*

Transparency is often connected with traceability at both corporate and supply chain levels. Some describe it as a traceability driver, while others view it as an overarching concept to the act of disclosing traceability information. Furthermore, transparency has also been referred to as the actions that make a company's activities clear and understandable both to internal and external stakeholders (Garcia-Torres et al., 2022).

Transparency is crucial for improving supply chain practices and ensuring compliance with codes of conduct (Clean Clothes Campaign, 2017). When it comes to the environment, transparency can make the supply chain more eco-friendly by assessing and monitoring suppliers (Moretto et al., 2018). It is also essential for addressing climate change, allowing companies to report greenhouse gas emissions, track their carbon footprint over time, and monitor progress toward emission reduction targets (Carbon Disclosure Project, n.d).

Socially, revealing lists of factory suppliers can strengthen employees' unions (Fashion Revolution. Transparency Is Trending, 2019) and diminish unauthorized subcontracting, which is frequently linked to labour abuses (Human Rights Watch. Work Faster or Get Out., 2015). Therefore, transparency is viewed as an essential feature of transnational business governance (Jestratijevic et al., 2024).

Besides, previous research shows that brands' increased information disclosure is associated with higher perceived brand authenticity, which positively influences consumer attitudes, trust, and purchase intentions. Consequently, this aligns with the idea that transparent communication enhances consumer responses and minimises scepticism toward a brand's content. In the marketing literature, brand transparency and authenticity are often interconnected, both characterized by qualities like genuineness and honesty (Yang and Battocchio, 2021; Napoli et al., 2014).

Even so, the clothing industry is still characterised by its lack of transparency and selective information disclosure, relying excessively on its brand image (Badhwar et al., 2023). For instance, following all the significant social incidents and environmental damages of the fashion industry, many companies have been disclosing information and started to implement sustainable practices when criticised for ethical or environmental scandals (Guckian et al., 2018). In the EU, however, traceability and (transparent) information disclosure are no longer an option but a requirement to comply with the latest EU legislation. Consumers will need to have access to clear and non-selective information to be able to make more thoughtful and informative decisions when purchasing products and to help them understand more about fashion brands' practices (Mandaric et al., 2021).

Moreover, product traceability information can be disclosed in various ways, which will be reviewed in more detail, next.

### *2.2.4 Types of Supply Chain Information Disclosure*

The increasing demand for sustainable business practices, particularly within the fashion industry, has led to consumers asking for more information concerning companies' sustainability efforts (Bhaduri and Ha-Brookshire, 2011; Fraser et al., 2020). To effectively build perceived brand transparency, it is important to develop communication strategies to transmit their values to customers (Kang and Hustvedt, 2014; Parris et al., 2016).

Sustainable supply chain transparency practices englobe a variety of activities, including third-party audits, supplier details, and compliance records in annual reports, along with full production procedures on company websites (Vinayavekhin et al., 2024). Greater transparency encompasses various types of information disclosure, which reduces information asymmetry and market inequalities (VanSandt and Sud, 2012). Additionally, transparency is about revealing essential information desired by consumers to aid them in making more informed decisions (McKay, 2008; Tapscott and Ticoll, 2003).

There are some examples of different types of information disclosure (Sodhi and Tang, 2019):

- *Full Supply Chain Disclosure (all tiers):* Refers to complete supply chain information transparency, from the source of raw materials to the distribution centres.
- *Tier-1 Supplier Information:* Tier-1 supplier information is related to the supplier's name, location and activity.
- *Supply Chain Cost Transparency:* Cost transparency includes material cost, labour cost, transportation cost and customs duties.

- *Environmental Footprint Disclosure:* Covers energy usage, water consumption, waste management and air pollution compliance.
- *Workplace Safety Compliance:* Includes safety audits and compliance with fire and building safety standards for worker protection.

Existing research has mainly focused on production transparency, which emphasizes the use of ethical materials and labour, such as disclosing raw material sources (VanSandt and Sud, 2012). Additionally, Bhaduri and Ha-Brookshire (2011) found that manufacturing process disclosure is the most significant concern for consumers in the apparel industry.

Nevertheless, as mentioned above other types of information transparency exist that can reduce information asymmetry, as is the case for cost transparency. (VanSandt and Sud, 2012; Yang and Battocchio, 2021). Cost transparency, different from price transparency which aims to present a clear understating of the final price, including markups and discounts, reveals specific and relevant production costs to consumers, such as costs for raw materials, labour and transportation (Mohan et al., 2020). Furthermore, cost transparency is seen as a more untraditional disclosure of information, thus this information is perceived as more transparent due to its sensitivity to the consumers (Yang and Battocchio, 2021).

The current research builds on these previous findings by examining the importance and impact of consumers' perceptions of information disclosure, particularly concerning cost and production disclosure. Existing literature presents these disclosures as critical factors in determining a brand's transparency and as central to consumers' decision-making when selecting a product.

### 2.3 Consumers' Sustainability Awareness and Knowledge

Consumers play a significant role in promoting sustainable development (Valor, 2007). Their demand directly influences market trends and can drive companies towards adopting more sustainable practices.

Environmental knowledge encompasses understanding ecological issues and their impacts on ecosystems. It also involves recognizing our collective responsibility for achieving sustainable development. Product knowledge, as defined by Wang et al. (2019), refers to understanding a product's characteristics. Environmental awareness, on the other hand, is about knowing environmental issues and how to address them. (Zameer and Yasmeen, 2022). This awareness

also includes educating people on the importance of preserving the environment (Asif et al., 2018).

By understanding product characteristics and their environmental implications, consumers can make more informed choices that contribute to sustainable development. Furthermore, concerns such as protecting biodiversity, waste management, water scarcity, and sustainable production reinforce environmental awareness among consumers. These concerns not only heighten awareness but also enhance consumers' ecological knowledge and purchasing behaviours (Zameer and Yasmeen, 2022; Asif et al., 2018). Therefore, increasing knowledge about sustainable products can improve environmental awareness and influence sustainable purchasing behaviours (Han, 2020). The increase in consumers' sustainable awareness incites marketers to develop communication strategies that promote sustainable products using labels and logos and thus implement more transparent communication strategies. Therefore, for an increase in a brand's product information to effectively communicate sustainability to consumers, awareness and understanding of this information are essential (Siraj et al., 2022; Taufique et al., 2017).

Previous studies show that consumer knowledge and understanding of sustainable label information influence sustainable purchase decisions (Siraj et al., 2022). Polonsky et al. (2012) also noted that consumers' attitudes towards green products are likely to shift positively when they receive more information about these products. However, sometimes consumers also struggle to verify the credibility and authenticity of claims about sustainable practices, making them sceptical about the sustainability and green labels of fashion brands (Mandarić et al., 2021). Thus, understanding how consumers evaluate brands that promote sustainable product information via track-and-trace strategies is essential since it will also impact their purchasing behaviours (Siraj et al., 2022; Stanton and Cook, 2019).

## 2.4 Consumers' Brand Valuations

### *2.4.1 Brand Trust*

Trust is a fundamental component of the relationship between a brand and its consumers. Brand trust is defined by a customer's willingness to depend on a brand under conditions of uncertainty or risk (Yang & Battocchio, 2021). It is influenced by two key elements: brand reliability and brand intentions. Brand reliability is the consumer's belief that the brand will meet their needs,

while brand intentions refer to the belief that the brand's actions are motivated by positive intentions towards the consumer's welfare (Kang & Hustvedt, 2014).

Trust also shapes perceptions of a company's altruistic motives behind Corporate Social Responsibility efforts. Trust helps consumers assess the truthfulness of sustainability claims, reducing perceptions of potential greenwashing (Neumann et al., 2020).

Companies must provide information to the public to gain consumer trust, raise awareness, solicit feedback, and communicate improvement processes and results. Younger consumers, particularly Millennials, tend to have less trust in large corporations compared to previous generations (Sodhi & Tang, 2019), making transparent information from brands crucial in today's society. Transparency reassures consumers about potentially misleading information and addresses concerns raised by uncertainty (Yang & Battocchio, 2021). Additionally, the disclosure of sustainable practices significantly fosters environmental initiatives and enhances customer satisfaction and trust (Uikey & Baber, 2023).

Furthermore, trust is positively linked to brand authenticity and predicts positive marketing outcomes like loyalty, retention, and purchase intention (Neumann et al., 2020).

### *2.4.2 Brand Authenticity*

Authenticity is considered a crucial component in modern marketing that significantly influences a brand's success (Brown et al., 2003; Bruhn et al., 2012). Gilmore and Pine (2007) noted that authenticity has become a key factor in the purchasing criterion. Brands that are perceived as authentic tend to achieve greater commercial success, have a higher level of brand trust (Oh et al., 2019), and cultivate stronger emotional connections between customers and the brand, leading to increased consumer behavioural intentions, such as store visits, purchases, and recommendations (Napoli et al., 2014; Morhart et al., 2015). According to Spence (1974), consumers' perceptions of brand authenticity are greatly impacted by its marketing communication. Transparent marketing communication that reveals its performances and internal processes (Yang and Battocchio, 2021), can enhance consumers' credibility of a brand's integrity and authenticity (Cambier and Poncin, 2020).

Yang and Battocchio's (2021) findings demonstrated that by disclosing more information, brands are perceived as having higher brand authenticity, which leads to positive consumer attitudes, trust, and higher purchase intentions.

Brand transparency and brand authenticity are closely related constructs in branding literature, sharing characteristics like "*genuineness"*, "*truthfulness"*, and *"realness"* (Spence, 1974). Brand transparency provides cues to develop new perceptions or support existing perceptions of brand authenticity in consumers' minds (Yang and Battocchio, 2021), being a powerful branding tool if used correctly.

To further evaluate consumers' brand perceptions regarding the brand's transparency practises, and to better address the existing attitude-behaviour gap of consumers, the next section will review consumers' purchasing intentions and willingness to pay.

### *2.4.3 Purchasing Intention*

Purchasing intention portrays the consumer's actual decision to buy an item, influenced by their previous experiences and awareness of the brand (Hageman et al., 2024). Furthermore, purchasing intentions are driven by comparing the product's value against its cost. In the fast fashion sector, product scarcity prompts impulsive purchases (Sener et al., 2019). Emotional drivers, such as pleasure, also significantly influence buying decisions (McNeill and Venter, 2019).

Buying sustainable fashion items is often driven by ethical considerations and rational decision-making. When purchasing sustainable products, consumers consider factors such as price, quality, manufacturing processes, retail practices, and the transaction's carbon footprint. Brands that provide credible and transparent reports about their products tend to positively stimulate more buying impulses among consumers (Wang and Yang, 2010).

Furthermore, consumers typically prefer to purchase products from companies that are transparent when disclosing information, perceiving them as more reliable and trustworthy, which leads to greater consumer satisfaction and intent to purchase its items (Matzler et al., 2006).

### *2.4.4 Willingness to Pay*

Previous studies found that consumers' willingness to purchase increases with production process disclosure, by reducing information asymmetries, stakeholders feel more empowered and enable them to hold the companies accountable (Egels-Zandén and Hansson, 2016). Transparency is important for consumers and they are willing to pay more for product

transparency, even if that means paying less attention to product quality (Bhaduri and Ha-Brookshire, 2011; Kim et al., 2020).

Furthermore, buyers will also value suppliers that engage in full disclosure, as it is generally viewed as providing more transparency compared to those that only share partial information. With full disclosure, consumers are more prompt to pay a premium price for brands that offer an extensive level of transparency. This is consistent with the broader trend where greater transparency is preferred by consumers to make more informed and effective decisions (Vinayavekhin et al., 2024).

## 3. Conceptual Framework and Hypotheses

As previously mentioned, there are different ways for a brand to disclose information to its customers. However, given the complex nature of transparency, consumers perceive transparency information differently from each other (Schnackenberg and Tomlinson, 2016).

Bhaduri and Ha-Brookshire (2011) suggest that consumers are particularly more concerned with the transparency of a product's manufacturing process, such as the source of raw materials and its suppliers. Additionally, cost transparency is considered an unconventional type of disclosure, and consumers are highly sensitive to it due to its significant impact on their decision-making (Yang & Battocchio, 2021). According to Mohan et al. (2020), when a brand shares typically hidden information, such as a product's cost breakdown, consumers are often more attracted to that brand. This finding aligns with the concept of self-disclosure reciprocity (Sprecher et al., 2013), where revealing more information fosters consumer trust and positive responses, enhancing the consumer-brand relationship.

Mohan et al. (2020) found that cost information is perceived as the most sensitive type of disclosure compared to operational process information or just price information. Their study showed that cost transparency increases purchasing intentions, willingness to pay, and brand attraction more than other types of information disclosure.

Therefore, given the varying information sensitivity and positive consumer attitudes resulting from increased information availability, the current study will consider cost information as the highest level of information disclosure, which leads to the following hypothesis:

**H1:** The level of product traceability information will impact consumers' brand valuations, so that:

**H1a:** The higher the level of product traceability information, the higher the level of consumers' brand valuations (brand trust, brand authenticity, purchasing intentions, and WTP).

Prior research has shown that, with the increased awareness of sustainability practices, many consumers are getting more interested in obtaining transparent information from companies (Singh et al., 2008). According to Yang and Battocchio (2021) consumers' trust, attitudes, and purchasing intentions toward a brand increase more positively when perceived as being transparent. Lin et al. (2017) argued that brands that share transparent communication with consumers enhance their awareness of the brand's ethical and sustainable efforts, leading to greater brand valuations, such as growing trust and behavioural intentions.

Bhaduri and Ha-Brookshire (2011) also observe that brand transparency positively impacts consumer perception, especially in terms of manufacturing transparency. This has been demonstrated to increase consumers' willingness to pay more, even if it means accepting lower product quality (Egels-Zandén and Hansson, 2016; Kim et al., 2020). Therefore, the second set of hypotheses is suggested as follows:

**H2:** The impact of the level of product traceability information on consumers' brand valuations will be moderated by the level of brand transparency, so that:

**H2a:** When brand transparency is high, the impact on consumers' brand valuations is higher than when brand transparency is low.

Sustainable fashion is also closely linked with knowledge, attitudes, and behaviours (Ceylan 2019). The transparency literature (Reynolds & Yuthas, 2008) suggests that the relationship between consumers and companies is influenced not only by the company's transparent actions but also by the consumer's prior awareness and knowledge about sustainability (Park and Kim, 2016). Some authors consider brand transparency to be the availability or presence of information (Kim, 2020; Yang and Battocchio, 2021). However, according to Sansome and colleagues (2024), these studies do not take into account how consumers might misinterpret

information based on their prior concerns about sustainability. As consumers gain a deeper understanding of social and environmental issues, they also expect more from a brand's transparent practices (Park and Kim, 2016). The literature in this domain suggests that increasing awareness about sustainability among consumers fosters a positive attitude toward sustainable products (Kong et al., 2016). For instance, brands that foster transparency by disclosing specific information about their products, like sustainable methods of production by using recycled materials, result in a higher purchasing preference for greener fashion products (Lundblad and Davies 2016; Liu et al., 2020). Consequently, the effect of brand transparency on consumers' valuations of products with traceability information should be expected to be heightened with increased awareness and knowledge about sustainability. More formally, the third hypothesis is suggested as follows.

**H3:** The perceived brand transparency effect on consumers' valuations of products with traceability information is expected to be heightened with increased awareness and knowledge about sustainability. In such cases, the higher the consumer sustainability awareness and knowledge level, the higher the product traceability information impact.

Overall, this research examines the impact of product traceability on consumers' brand valuations, namely on brand trust, brand authenticity, purchasing intention, and willingness to pay - WTP. The moderated-moderation role of brand transparency and consumers' sustainability awareness and knowledge is also examined in the aforementioned relationship leading to the conceptual model presented below (see Figure 1):

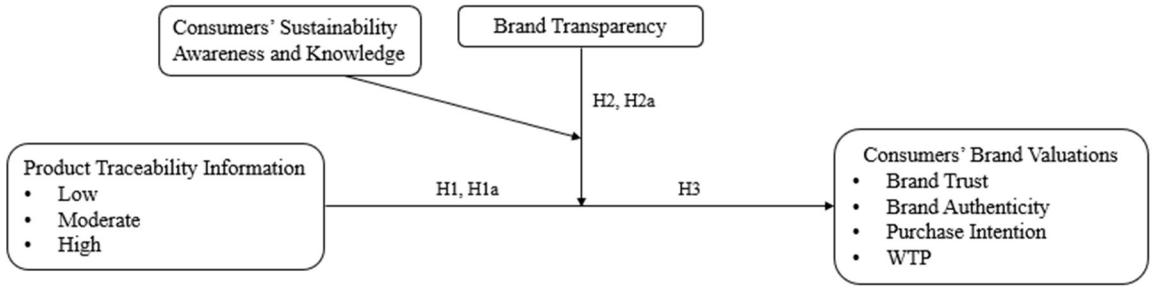



*Figure 1 - Conceptual Framework*

# 4. METHODOLOGY AND DATA COLLECTION

The fourth chapter gives an overview of the research methodology used in this dissertation to empirically test the hypotheses outlined earlier, explaining the data collection procedures and the variables involved in conducting the study.

## 4.1 Research Method

Following the secondary data overview of the Academic Literature Review chapter, primary data was gathered to address the research questions of this study. As a result, it was used an online survey through the web platform Qualtrics.

Qualtrics allows reaching a wider audience, in a short period, at minimal costs associated. It is not only time-efficient but also ensures widespread distribution. Additionally, this approach enables participants greater flexibility and convenience, with no restrictions on where and when they can access the survey, ensuring equal participation opportunities. This accessibility, together with the privacy and anonymity that the platform gives participants, enhances their willingness to respond to the online survey. Moreover, this platform provides an extensive and great variety set of tools and features, making it easy to analyse data, which was essential to customise and align the survey with the specific objectives of this research (Evans and Mathur, 2005).

## 4.2 Sampling

Given the characteristics of this research, the non-probability convenience sampling method was the method chosen. The main factor in choosing this convenience sampling technique is the ease of accessing or reaching participants for the study. Factors such as time availability, geographical proximity or participants' willingness to be part of the current study are crucial in selecting participants. Moreover, this method also has the advantage of cost and time efficiency for the data collection process (Dornyei, 2007). Additionally, the survey was shared through social media platforms such as Instagram, LinkedIn and WhatsApp, to reach a significantly large number of participants.

## 4.3 Research Instruments

To test the hypotheses using a quantitative methodology approach, two experimental studies were conducted on the platform Qualtrics. A preliminary pilot study was carried out, followed by a main study. Both studies are described next, including the study design, and a description of the variables outlined previously in the conceptual model.

### *4.3.1 Pilot Study*

Before conducting the main study, a pilot test was carried out to confirm the manipulations and to assess whether questions were clearly understood by the participants. The pilot study involved a total of 30 participants. The pilot test included a manipulation check across three different levels of information traceability, using a seven-point Likert scale (1 = Very Low to 7 = Very high) concerning a basic black t-shirt. Participants were asked to determine the level of traceability information disclosed about the t-shirt. Additionally, their familiarity with the brand *Nudie Jeans* was also assessed.

The results show that the manipulation scenarios were generally well perceived, except for the high traceability scenario, which did not significantly differ from the moderate scenario and showed only marginal significance ($M_{\text{Moderate Traceability}}$ = 4.82; SD = 1.40 vs $M_{\text{High Traceability}}$ = 5.13; SD = 1.73; $t(17)$= -2.73; $p$ =.67). This suggests that the incremental increase in traceability information from moderate to high may not be as impactful to consumers, as it is for low vs moderate and low vs high scenarios (Table 1).

Nevertheless, these two scenarios were still included in the main study as they allow for more in-depth analysis across different levels of traceability information, enabling a better evaluation of potential changes in consumer behaviour.

*Table 1 – Pilot Study Manipulation Check (Moderate vs High)*

| | **Mean** | **SD** | ***t-Test*** |
|---|---|---|---|
| *Moderate Traceability* | 4.82 | 1.40 | $-2.73^{+}$ |
| *High Traceability* | 5.13 | 1.73 | |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, +$p \leq 1$

### *4.3.2 Main Study*

The main study was conducted from April 18th to April 26th, 2024, with data collected through an online survey; 249 responses were received, of which 201 were fully completed.

The sample size meets the required participant count to ensure the validity of a randomized experimental study design (Maxwell & Delaney, 2004).

## 4.4 Design and Procedure

The study began with a brief introduction regarding the advertisement to which they would be assigned. The study relied on a 2 (Product traceability information: low, moderate, high), with brand transparency and consumers' sustainability awareness and knowledge as measured (continuous) variables. Subsequently, participants were randomly assigned to one of three scenarios, each differing in the level of traceability information provided—low, moderate, high—about a specific t-shirt. This design aimed to analyze how each level of traceability information influences consumer perceptions and behaviours.

Following this, the study incorporated a series of questions to assess the dependent variables, namely the consumers' brand valuations. Afterwards, moderation variables were measured, specifically brand transparency perception and consumers' sustainability awareness and knowledge.

The survey concluded with demographic questions, and participants were thanked for their contribution.

## 4.5 Stimuli Development

For this study, three webpage scenarios were created to replicate the online purchasing experience for a black t-shirt from the Nudie Jeans brand.

Nudie Jeans was chosen for these fictional shopping scenarios because its inclusive product offer caters to all ages and genders, making it a versatile brand covering a wide demographic. Also, Nudie Jeans is a sustainably-born brand renowned for its environmental commitments and ethical practices, being particularly known for its supply chain transparency and detailed, accessible information about each clothing piece, such as the materials used, production methods, and environmental impact. Additionally, the reason for choosing a black t-shirt was

for its simplicity and versatility, ensuring that the focus remained on the information provided in terms of the brand's transparency disclosure. Furthermore, the stimuli were first performed in a pilot study before the launch of the main study to guarantee that all participants accurately understood the manipulation scenarios.

Three distinct scenarios were created to examine three different levels of product traceability information - low, moderate, and high - regarding the same black t-shirt to avoid product biases. The manipulations differed in the type and the amount of product information provided. The low traceability information scenario only shared material details of the t-shirt, such as "100% cotton". The moderate traceability information condition included these material details and additional information about the suppliers, such as a list of suppliers and their locations. Finally, the high traceability information scenario provided all the previously mentioned details along with a complete cost breakdown for producing the t-shirt. According to the literature, cost transparency, though unconventional, is particularly relevant to consumers (Yang and Battocchio, 2021) (see Appendix 1 A–C).

Apart from Nudie Jeans, other brands were also examined as a source of information and inspiration for the manipulations' development and to make the scenarios as realistic as possible. H&M, for instance, lists its suppliers and their location on its website, while ISTO - a Portuguese brand shares a price breakdown of their garments as a transparent approach. These additional two brands were chosen for their accessible and clear information display, which helped in the creation of more realistic fictional scenarios (see Appendix 1 D–E).

## 4.6 Variable Descriptions

### *4.6.1 Manipulation Check*

A manipulation check question for brand familiarity was employed to verify if the brand featured in the scenarios was recognized. Participants rated their familiarity with the brand Nudie Jeans on a seven-point Likert scale, from 1 (not familiar at all) to 7 (extremely familiar), by answering the question, "How familiar are you with the brand Nudie Jeans?"

### *4.6.2 Independent Variable*

*Product traceability information:* low, moderate, high; manipulated and randomly presented to participants: The three conditions differed according to the type and amount of traceability information disclosed.

### *4.6.3 Dependent Variables*

*Consumers' Brand Valuations*

- *Brand Trust:* was measured by asking participants their level of agreement (1 – strongly disagree to 7 – strongly agree), with three items related to their trust in the brand that they were exposed to, ("I have no doubt Nudie Jeans can be trusted."; "Nudie Jeans is trustworthy."; "I trust Nudie Jeans."), adapted from Li et al, 2008.
- *Brand Authenticity:* was measured using a custom four-dimension scale derived from various literature sources, with each dimension comprising two items. The scale included integrity and symbolism, both adapted from Morhart et al. (2015) ("Nudie Jeans supports its consumers."; …) and ("Nudie Jeans has important values to its consumers."; …) respectively; sincerity, adapted from Napoli et al. (2014) ("Nudie Jeans is sincere and truthful."; …); and originality, from Bruhn et al. (2012) ("Nudie Jeans is unique and original."; …). Participants rated their agreement on a seven-point Likert scale (1 – strongly disagree to 7 – strongly agree).
- *Purchasing Intention:* was measured by asking participants to express their level of agreement on their purchase intention ("I would purchase the previously shown product of Nudie Jeans.") on a seven-point Likert scale (1 – strongly disagree to 7 – strongly agree), adapted from Lee and Shin (2010).
- *Willingness to Pay (WTP):* was measured by asking participants how much they would be willing to pay for the product shown on a scale from 0 to 100 euros.

### *4.6.4 Moderators*

*Brand Transparency:* To analyse how the type and amount of information disclosure is perceived, the participants were asked three items concerning the level of transparency of the product previously presented ("Nudie Jeans clearly and openly discloses information about its products." ; " Nudie Jeans is transparent in its communication about product details." ; " Nudie Jeans provides clear information about its products.") on a seven-point Likert scale (1 – strongly disagree to 7 – strongly agree), adapted from previous literature (Alcaide González et al., 2020; Hustvedt and Kang, 2013; Lin et al., 2017).

*Consumers' Sustainability Awareness and Knowledge (CSAK):* To test the level of awareness and knowledge regarding sustainability practices, the participants were asked to rate their level of agreement using five items ("I am aware of child labour and sweatshop issues in the global supply chain of the fast fashion industry."; "I know more about socially responsible business

than the average person."; …), on a seven-point Likert scale (1 – strongly disagree to 7 – strongly agree), adapted from previous literature (Park and Kim, 2016; Zhang et al., 2021; Kim and Choi, 2005; Xu et al., 2020; Kanchanapibul et al., 2014).

Detailed descriptions of all variables are provided in Appendix 2.

## 5. Analysis and Results

### 5.1 Sample Characterization

The sample is composed of 201 participants, from which 53% are women, 46% are male, and 1% are non-binary/third gender. The age distribution shows that the majority, 59%, were aged between 19 and 24 years old, followed by 19% of participants aged 25 to 34 years, 8% between 35 and 44 years, 7% under 19 years, 3% between 45 and 54 years, and 4% aged 55 to 65 years. Participants represented 19 different countries, predominantly from Portugal (78%), France (5%), Mexico (3%), and the Netherlands and Germany (2% each). Regarding educational background, most of the participants have a bachelor's degree (60%) or a master's degree (18%), while 15% have completed high school. In terms of employment status, 48% are currently employed and 44% are university students. Lastly, concerning annual income 25% of participants earn less than €10,000, another 25% earn between €20,000 and €29,999, 19% earn between €10,000 and €19,999, and 14% preferred not to disclose this information.

### 5.2 Scale Reliability and Factor Analysis

All the measurement scales used in this dissertation were adapted from existing literature. Nonetheless, verifying the reliability of these scales within the context of this research is crucial to ensure the accuracy of the results. Since this research used only scales consisting of three or more items, a factor analysis was first conducted followed by a reliability analysis using Cronbach's α (alpha).

A factor analysis including a principal component assessment and varimax rotation was performed to evaluate the scales. The scales for brand transparency, brand trust, brand

authenticity, and consumers' sustainability awareness and knowledge each had only one component extracted.

For the reliability analysis, Cronbach's alpha, ranging from 0.1 to 1, measures the internal consistency of a scale, where higher Cronbach's alpha values indicate greater internal reliability and consistency. This ensures they effectively represent the same concept or construct, confirming the scale's validity for research or evaluation (Tavakol and Dennick, 2011).

Table 1 demonstrates the reliability analysis results, showing high internal consistency across all variables with alpha values ranging from 0.8 to above 0.9. These values surpass the acceptable minimum of 0.6, which according to DeVellis (1991) scores below 0.6 are deemed unacceptable. This indicates that no improvements through item deletion were required, confirming strong levels of reliability across all measured variables, and retaining all initial items.

*Table 2 – Reliability Test for Multi-Item Scales*

| Scale | Initial number of items | Cronbach's alpha | Cronbach's alpha if deleted | Items deleted | Final number of items |
|---|---|---|---|---|---|
| *Brand Transparency* | 3 | 0.966 | - | - | 3 |
| *Brand Trust* | 3 | 0.966 | - | - | 3 |
| *Brand Authenticity* | 8 | 0.960 | - | - | 8 |
| *Consumers' Sustainability Awareness & Knowledge* | 5 | 0.805 | - | - | 5 |

### 5.3 Results Manipulation Check

To assess the effectiveness of the manipulations and verify whether the participants correctly identified the type of scenario according to the three product traceability information levels, three independent sample t-tests were performed (Tables 3 - 5).

*Table 3 – Manipulation Check for Product Traceability Information (Low vs Moderate)*

| | **Mean** | **SD** | ***t-Test*** |
|---|---|---|---|
| *Low Traceability* | 2.60 | 1.62 | -11.50*** |
| *Moderate Traceability* | 5.27 | .95 | |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

The results indicate a statistically significant difference between the Low and Moderate traceability scenarios, suggesting that participants perceived a noticeable difference in the amount of traceability information in these two scenarios ($M_{Low\ Traceability}$ = 2.60; SD = 1.62 vs $M_{Moderate\ Traceability}$ = 5.27; SD = .95; $t(132) = -11.50$; $p < .001$).

*Table 4 – Manipulation Check for Product Traceability Information (Low vs High)*

| | **Mean** | **SD** | ***t-Test*** |
|---|---|---|---|
| *Low Traceability* | 2.60 | 1.62 | -15.44*** |
| *High Traceability* | 6.22 | 1.06 | |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

Likewise the previous results, there is also a statistically significant difference between Low and High traceability scenarios, indicating that participants perceived the High traceability information scenario to have more detailed traceability information compared to the Low traceability scenario ($M_{Low\ Traceability}$ = 2.60; SD = 1.62 vs $M_{High\ Traceability}$ = 6.22; SD = 1.06; $t(135) = -15.44$; $p < .001$).

*Table 5 – Manipulation Check for Product Traceability Information (Moderate vs High)*

| | **Mean** | **SD** | ***t-Test*** |
|---|---|---|---|
| *Moderate Traceability* | 5.27 | .95 | -5.46*** |
| *High Traceability* | 6.22 | 1.06 | |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

Lastly, Moderate and High traceability scenarios are also shown to be statistically significant, meaning that the incremental level of traceability information from Moderate to High is also

statistically significant to consumers ($M_{Moderate\ Traceability}$ = 5.27; SD = .95 vs $M_{High\ Traceability}$ = 6.22; SD = 1.06; $t(129) = -5.46$; $p < .001$).

Therefore, the scenarios' results show that the manipulation was perceived as expected, and further analysis can be performed confidently.

## 5.4 Main Results

To test the three hypotheses, a series of statistical procedures were employed.

### *5.4.1 The effect of the level of product traceability information*

***H1:*** *The level of product traceability information will impact consumers' brand valuations, so that:*

***H1a:*** *The higher the level of product traceability information, the higher the level of consumers' brand valuations (brand trust, brand authenticity, purchasing intentions, and WTP).*

To test the first hypothesis, a multivariate analysis of variance (MANOVA) was conducted to assess the level of product traceability information on consumers' brand valuations, namely on brand trust, brand authenticity, purchasing intentions, and willingness to pay.

Results show a statistically significant main effect of product traceability information (low, moderate, high) on all the dependent variables, namely on: brand trust ($M_{Low\ Traceability}$ = 3.23, SD = .15; $M_{Moderate\ Traceability}$ = 4.55, SD = .15; $M_{High\ Traceability}$ = 5.28, SD = .15, $F(2,198) = 50.40$, $p<.001$), brand authenticity ($M_{Low\ Traceability}$ = 3.00, SD = .13; $M_{Moderate\ Traceability}$ = 4.57, SD = .14; $M_{High\ Traceability}$ = 5.07, SD = .14, $F(2,198) = 63.84$, $p<.001$), purchasing intentions ($M_{Low\ Traceability}$ = 2.97, SD = .19; $M_{Moderate\ Traceability}$ = 3.98, SD = .20; $M_{High\ Traceability}$ = 3.91, SD = .18, $F(2,198) = 8.42$, $p<.001$), and WTP ($M_{Low\ Traceability}$ = 16.97, SD = 1.10; $M_{Moderate\ Traceability}$ = 19.56, SD = 1.15; $M_{High\ Traceability}$ = 24.08, SD = 1.13, $F(2,198) = 10.38$, $p<.001$).

*Table 6 – F-test level of Product Traceability Output*

| | **Level of Product Traceability** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Low Traceability | | Moderate Traceability | | High Traceability | | ***F-test*** |
| | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | |
| *Brand Trust* | 3.23 | .15 | 4.55 | .15 | 5.28 | .15 | 50.40*** |
| *Brand Authenticity* | 3.00 | .13 | 4.57 | .14 | 5.07 | .14 | 63.84*** |
| *Purchasing Intention* | 2.97 | .19 | 3.98 | .20 | 3.91 | .18 | 8.42*** |
| *Willingness to Pay* | 16.97 | 1.10 | 19.56 | 1.15 | 24.08 | 1.13 | 10.38*** |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

To further examine the difference in mean values, a pairwise comparison analysis was performed.

Despite the mean increase across all the dependent variables, the mean difference between low and moderate product traceability for willingness to pay ($M_{Low\ Traceability}$ = 16.97, SD = 8.24; $M_{Moderate\ Traceability}$ = 19.56, SD = 9.81, $t(132) = -1.66$, $p = .1$) and the mean difference between medium and high product traceability information for purchasing intentions ($M_{Moderate\ Traceability}$ = 3.98, SD = 1.58; $M_{High\ Traceability}$ = 3.91, SD = 1.70, $t(129) = .80$, $p = .8$) were both not statistically significant, partially validating hypothesis 1 (see Table 7 for mean differences).

*Table 7 – Pairwise Comparisons Output*

| | Mean Difference | SD | *p-value* | LLCI | ULCI |
|---|---|---|---|---|---|
| ***Brand Trust*** | | | | | |
| *Low vs Moderate* | -1.32 | .21 | <.00*** | -1.74 | -.91 |
| *Moderate vs High* | -.73 | .21 | <.00*** | -1.15 | -.31 |
| *Low vs High* | -2.05 | .21 | <.00*** | -2.46 | -1.64 |
| ***Brand Authenticity*** | | | | | |
| *Low vs Moderate* | -1.57 | .19 | <.00*** | -1.95 | -1.19 |
| *Moderate vs High* | -.50 | .20 | .01* | -.88 | -.11 |
| *Low vs High* | -2.06 | .19 | <.00*** | -2.44 | -1.69 |
| ***Purchasing Intention*** | | | | | |
| *Low vs Moderate* | -1.01 | .29 | <.00*** | -1.56 | -.46 |
| *Moderate vs High* | .07 | .28 | .79 | -.48 | .63 |
| *Low vs High* | -.94 | .28 | <.00*** | -1.48 | -.40 |
| ***Willingness to Pay*** | | | | | |
| *Low vs Moderate* | -2.59 | 1.59 | .11 | -5.73 | .55 |
| *Moderate vs High* | -4.51 | 1.61 | .01* | -7.69 | -1.34 |
| *Low vs High* | -7.10 | 1.57 | <.00*** | -10.21 | -3.40 |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

*Table 8 – t-Test Purchasing Intention and WTP*

| | Mean | SD | *t-Test* |
|---|---|---|---|
| *Moderate Traceability* | 3.98 | 1.58 | .80 |
| *High Traceability* | 3.91 | 1.70 | |
| *Low Traceability* | 16.97 | 8.24 | .10 |
| *Moderate Traceability* | 19.56 | 9.81 | |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

### *5.4.2 The moderating effect of brand transparency*

***H2:*** *The impact of the level of product traceability information on consumers' brand valuations will be moderated by the level of brand transparency, so that:*

***H2a:*** *When brand transparency is high, the impact on consumers' brand valuations is higher than when brand transparency is low.*

A multiple regression analysis was conducted using Haye's (2013) Process Macro software for SPSS, Model 1, to evaluate the moderation effect of brand transparency in the relationship between product traceability information and consumer valuations, expressed in the second hypothesis. The level of product traceability information was coded as a multicategorical variable, and brand transparency was tested as a continuous variable. The output of this model provides both the main effects of product traceability information and brand transparency on the dependent variables, namely brand trust, brand authenticity, purchasing intentions, and willingness to pay. The analysis then extends to two-way product traceability information x brand transparency interactions on the dependent variables.

Since the main effect of product traceability information has been tested and reported in H1, only the brand transparency main effect and the product traceability information x brand transparency interaction effect will be reported here. Results show a significant brand transparency main effect on brand trust ($b$ = .71, SE = .07, $t(195) = 9.94$, $p < .001$, 95% CI = [.57 to .85]), on brand authenticity ($b$ = .64, SE = .06, $t(195) = 10.02$, $p < .001$, 95% CI = [.51 to .77]), on purchasing intention ($b$ = .48, SE = .12, $t(195) = 3.88$, $p < .001$, 95% CI = [.24 to .72]), and on willingness to pay (WTP) ($b$ = 2.30, SE = .73, $t(195) = 3.16$, $p < .001$, 95% CI = [.87 to 3.73]).

Conversely, the results indicate that the two-way product traceability information x brand transparency interaction effect is statistically not significant on all the dependent variables (brand trust, brand authenticity, purchasing intention and WTP) as zero straddles between the confidence intervals (Table 9).

Despite higher brand transparency positively affecting consumers' brand valuations (brand trust, brand authenticity, purchasing intentions and WTP), its interaction effect with product traceability information is not statistically significant, rejecting hypothesis two.

Despite the data not supporting the hypothesized moderating role of brand transparency in the relationship between the level of product traceability and consumers' brand valuations, hypothesis three is tested next to evaluate how consumers' sustainable awareness and knowledge moderate the product traceability x brand transparency interaction.

*Table 9 – Haye's Process Model 1 Outputs*

| | *B* | *SE* | *t* | *p* | *LLCI* | *ULCI* |
|---|---|---|---|---|---|---|
| **Brand Trust** | | | | | | |
| *X1 (Low vs Moderate traceability)* | -.34 | .21 | -1.59 | .11 | -.76 | .08 |
| *X2 (Low vs High traceability)* | -.21 | .25 | -.85 | .40 | -.69 | .28 |
| *Brand Transparency* | .71 | .07 | 9.94*** | .00 | .57 | .85 |
| *X1 x Brand transparency* | .01 | .15 | .09 | .93 | -.29 | .31 |
| *X2 x Brand transparency* | .03 | .13 | .24 | .81 | -.23 | .29 |
| **Brand Authenticity** | | | | | | |
| *X1 (Low vs Moderate traceability)* | .05 | .19 | .29 | .77 | -.32 | .43 |
| *X2 (Low vs High traceability)* | -.12 | .22 | -.55 | .58 | -.56 | .31 |
| *Brand Transparency* | .64 | .06 | 10.02*** | .00 | .51 | .77 |
| *X1 x Brand transparency* | .03 | .14 | .25 | .80 | -.23 | .30 |
| *X2 x Brand transparency* | .14 | .12 | 1.18 | .24 | -.09 | .37 |
| ***Purchasing Intention*** | | | | | | |
| *X1 (Low vs Moderate traceability)* | -.10 | .37 | -.26 | .79 | -.82 | .63 |
| *X2 (Low vs High traceability)* | -.31 | .43 | -.73 | .47 | -1.15 | .53 |
| *Brand Transparency* | .48 | .12 | 3.88*** | .00 | .24 | .72 |
| *X1 x Brand transparency* | -.02 | .26 | -.06 | .95 | -.54 | .50 |
| *X2 x Brand transparency* | -.18 | .23 | -.82 | .42 | -.63 | .26 |
| **WTP** | | | | | | |
| *X1 (Low vs Moderate traceability)* | -1.15 | 2.16 | -.53 | .60 | -5.41 | 3.12 |
| *X2 (Low vs High traceability)* | 1.97 | 2.51 | .79 | .43 | -2.97 | 6.91 |
| *Brand Transparency* | 2.30 | .73 | 3.16** | .00 | .87 | 3.73 |
| *X1 x Brand transparency* | -2.95 | 1.55 | -1.90 | .06 | -6.01 | .12 |

| | | | | | | |
|---|---|---|---|---|---|---|
| *X2 x Brand transparency* | -1.52 | 1.33 | -1.15 | .25 | -4.14 | 1.10 |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

### *5.4.3 The moderating effect of consumers' sustainability awareness and knowledge*

***H3:*** *The perceived brand transparency effect on consumers' valuations of products with traceability information is expected to be heightened with increased awareness and knowledge about sustainability. In such cases, the higher the consumer sustainability awareness and knowledge level, the higher the product traceability information impact.*

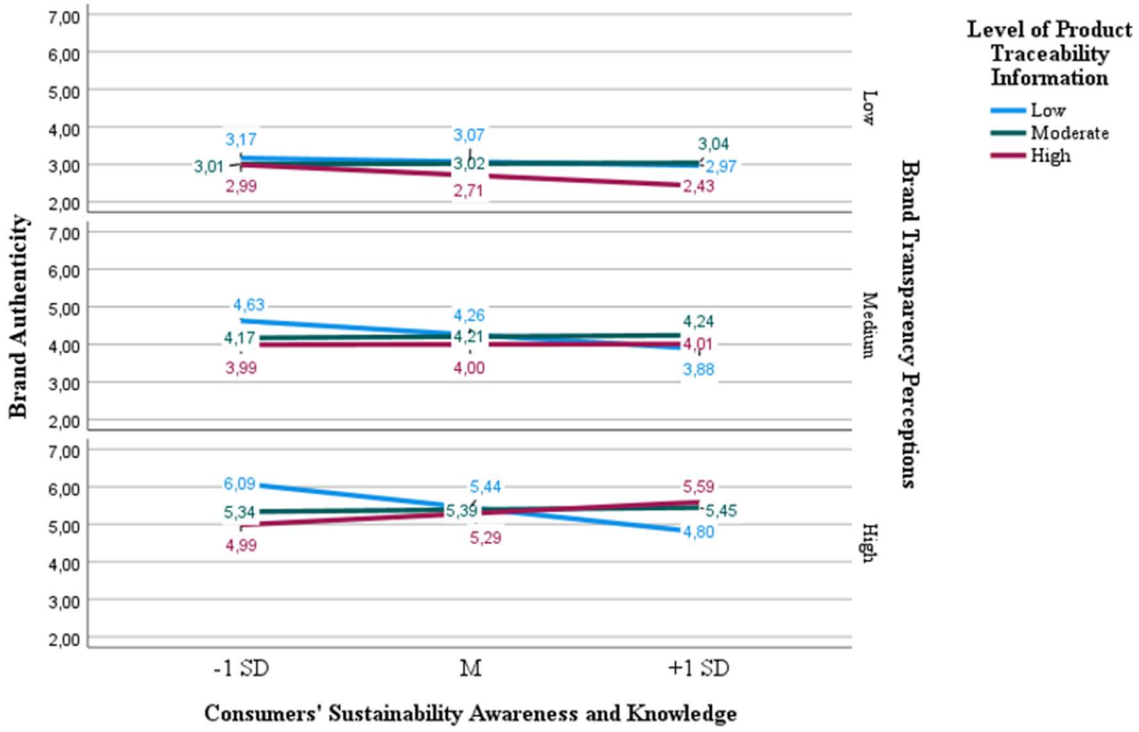
A multiple regression analysis was again conducted using Haye's (2013) Process Macro software for SPSS. This time, Model 3 was used to test the third hypothesis. This specific model tests for the moderated-.moderation effect of consumers' brand valuations and brand transparency on the dependent variables. In addition to the main effects, it allows to test of the two-way product traceability information x brand transparency interaction effect, the product traceability information x consumers' sustainability awareness and knowledge *(*CSAK*)* interaction and and three-way product traceability information x brand transparency interaction x consumers' sustainability awareness and knowledge *(*CSAK*)* interaction effect on the consumers' brand valuations dependent variables (brand trust, brand authenticity, purchasing intention and willingness to pay). Again, product traceability information was coded using dummy coding of multicategorical predictors (x1, x2) on the dependent variables.

***Brand Authenticity:*** Results show a statistically significant negative main effect of CSAK on consumers' brand authenticity perceptions ($b$ = -.46, SE = .20, $t$(189) = -2.33, $p$ < .05, 95% CI = [-.86 to -.07]), indicating that brand authenticity decrease with increases in sustainability awareness and knowledge. Furthermore, results show a significant two-way product traceability information x CSAK interaction effect ($b$ = .51, SE = .25, $t$(189) = 2.05, $p$ < .05, 95% CI = [.02 to 1.00]), in the moderate vs. the low traceability information condition (x1). Additionally, a significant negative two-way brand transparency x CSAK interaction effect ($b$ = -.19, SE = .08, $t$(189) = -2.38, $p$ < .05, 95% CI = [-.35 to -.03]); was also obtained. More importantly, a significant but positive three-way high traceability x brand transparency x CSAK interaction effect was obtained ($b$ = .40, SE = .17, $t$(189) = 2.30, $p$ < .05, 95% CI = [.06 to .74]), indicating

differences between across the high versus the low product traceability information (x2) condition.

A slope analysis (Aiken & West, 1991; Fitzsimons, 2008) was then carried out to examine the differences between the conditions at one standard deviation below and above (±1SD) the mean to further analyse the three-way interaction effect. Results show that in the high vs. low product traceability information condition (x2), statistically significant differences emerge; when both the level of brand transparency perception and CSAK are high (+1 SD) ($b$ = .80, SE = .35, $t$(189) = 2.30, $p$ < .05, 95% CI = [.11 to 1.48]); or when the level of brand transparency perception is high but the level of CSAK is low (-1 SD) ($b$ = -1.10, SE = .48, $t$(189) = -2.28, $p$ < .05, 95% CI = [-2.05 to -.15]). The research findings indicate that consumers place significant importance on brand transparency perceptions, particularly when provided with product traceability information, as this enhances their evaluations of brand authenticity. Despite instances where a brand is perceived as highly transparent, the lack of consumer awareness and knowledge about sustainability issues can negatively impact their perception of the brand's authenticity, even when detailed product traceability information is available. As consumers become more aware and knowledgeable about sustainability, they tend to react positively to detailed product traceability information.

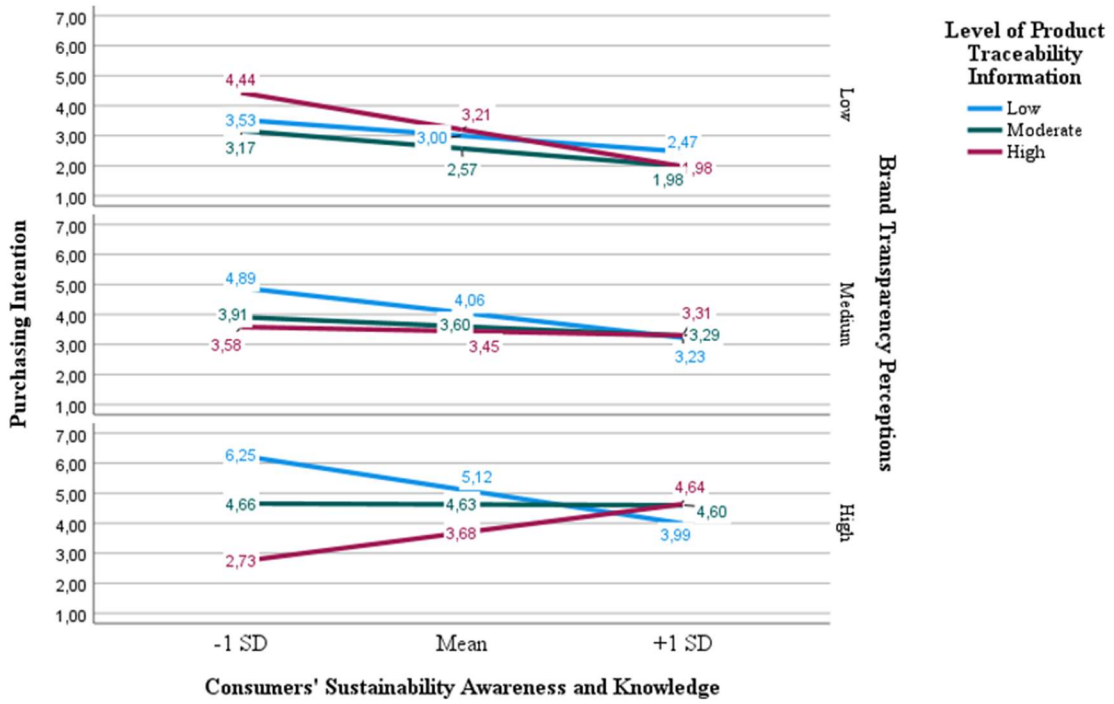
*Figure 2 – Brand Authenticity Three-way Interaction*



***Purchasing Intention**:* Results show a significant negative main effect of CSAK on purchasing intentions ($b$ = -1.04, SE = .37, $t$(189) = -2.78, $p$ < .01, 95% CI = [-1.77 to -.30]). A significant negative two-way high traceability x brand transparency interaction effect ($b$ = -.46, SE = .23, $t$(189) = -2.06, $p$ < .05, 95% CI = [-.91 to -.02]) is also present when examining the high versus low product traceability information (x2) condition on purchasing intention. More importantly, a significant and positive three-way product traceability information x brand transparency x CSAK interaction effect was also obtained ($b$ = .98, SE = .32, $t$(189) = 3.03, $p$ < .01, 95% CI = [.34 to 1.62]), on the high versus low product traceability information (x2) condition.

A slope analysis (Aiken & West, 1991; Fitzsimons, 2008) was again conducted to assess differences across the three-way interaction conditions. Results show differences exist between participants exposed to the high vs. low product traceability information (x2) condition when brand transparency perceptions are medium (Mean) and high (+1 SD). Again, the results of the moderated-moderation analysis indicate that consumers' purchase intentions vary when they perceive the brand's transparency as medium (Mean) and have low sustainability awareness and knowledge (-1 SD) ($b$ = -1.31, SE = .65, $t$(189) = -2.00, $p$ < .05, 95% CI = [-2.60 to -.02]). This effect remains even when the perception of the brand's transparency increases and consumers' sustainability awareness and knowledge are still low (-1 SD) ($b$ = -3.52, SE = .90, $t$(189) = -3.91, $p$ < .001, 95% CI = [-5.30 to -1.74]) or average ($b$ = -1.44, SE = .53, $t$(189) = -2.72, $p$ < .01, 95% CI = [-2.48 to -.40]). However, as the level of awareness and knowledge about sustainability increases, purchase intention differences seem to dissipate among participants exposed to different product traceability information and at low, medium, and high levels of perceived brand transparency.

*Figure 3 – Purchasing Intention Three-way Interaction*



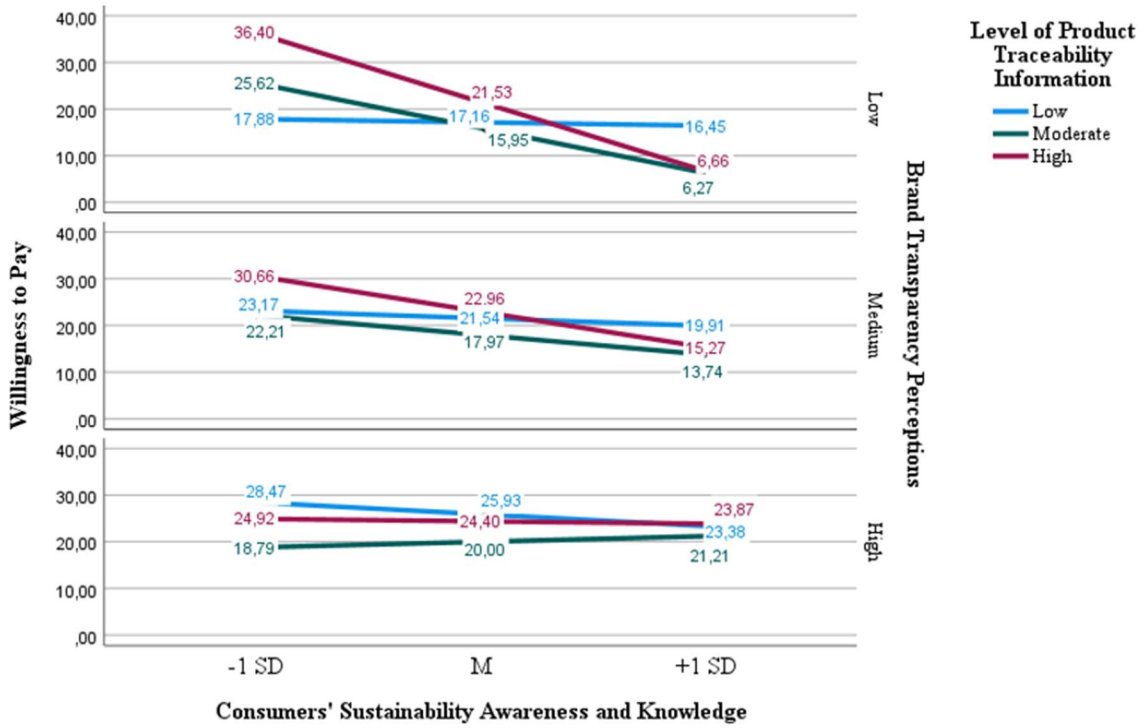

***Willingness to Pay:*** Results show a significant negative two-way product traceability information x CSAK interaction effect ($b$ = -7.57, SE = 3.22, $t$(189) = -2.35, $p$ < .05, 95% CI = [-13.93 to -1.22] and a significant and positive three-way product traceability information x brand transparency x CSAK interaction effect. ($b$ = 4.48, SE = 1.57, $t$(189) = 2.85, $p$ < *.01*, 95% CI = [1.38 to 7.58]); (b = 5.70, SE = 1.88, t(189) = 3.04, p < .01, 95% CI = [2.00 to 9.40]), respectively.

Once again, a slope analysis (Aiken & West, 1991; Fitzsimons, 2008) was performed to assess differences between conditions across the three-way interaction. Results highlight differences between both moderate vs. low traceability information (x1) and high vs. low traceability information (x2) conditions when brand transparency perceptions are low (-1 SD) and medium (M). Specifically, when examining the moderate vs. low traceability information (x1) condition, findings indicate that participants with low perceived brand transparency and with low sustainability awareness and knowledge, (-1SD) ($b$ = 7.74, SE = 3.74, $t$(189) = 2.07, $p$ < .05, 95% CI = [.36 to 15.12]), show an increased willingness to pay for products.

On the other hand, the results indicate that there are also differences between participants who are exposed to the high and low product traceability information (x2) condition when brand

transparency perceptions are low (-1SD) and medium (Mean), and CSAK is low (-1SD). Specifically, the analysis shows that when consumers have low sustainability awareness and knowledge, differences in willingness to pay increases exist at low ($b$ = 18.52, SE = 5.47, $t$(189) = 3.39, $p$ < .001, 95% CI = [7.73 to 29.32]) and medium ($b$ = 7.49, SE = 3.78, $t$(189) = 1.98, $p$ < .05, 95% CI = [.04 to 14.94]) perceived brand transparency levels, being this effect more pronounced when high than low product traceability information is provided.

*Figure 4 – Willingness to Pay Three-way Interaction*




***Brand Trust:*** The results show (only) significant but negative two-way brand transparency x consumers' sustainability awareness and knowledge interaction effect ($b$ = -.20, SE = .09, $t$(189) = -2.13, $p$ < .05, 95% CI = [-.38 to -.01]) on brand trust. Specifically, findings indicate that the impact of product traceability information on brand trust is influenced by the CSAK level but not by brand transparency perceptions.

Overall, findings suggest that for brands that are perceived as transparent and as consumers' sustainability awareness and knowledge increases, higher product traceability information is perceived as more authentic and with higher purchasing intentions. However, under those

conditions, higher product traceability information results in lower WTP. Additionally, brand trust shows to be non-significant. Therefore, H3a is only partially validated.

*Table 10 - Haye's Process Model 3 Outputs*[1]

| | *B* | *SE* | *t* | *p* | *LLCI* | *ULCI* |
|---|---|---|---|---|---|---|
| **Brand Authenticity** | | | | | | |
| *X2 (Low vs Moderate traceability)* | -.05 | .20 | -.25 | .81 | -.45 | .35 |
| *X1 (Low vs High traceability)* | -.26 | .22 | -1.14 | .25 | -.70 | .19 |
| *Brand Transparency* | .67 | .07 | 10.12** * | .00 | .54 | .08 |
| *X1 x Brand transparency* | -.00 | .14 | -.01 | .99 | -.29 | .28 |
| *X2 x Brand transparency* | .06 | .12 | .49 | .63 | -.18 | .30 |
| *Consumers' Sustainability Awareness and Knowledge (CSAK)* | -.46 | .20 | -2.33* | .02 | -.86 | -.07 |
| *X1 x CSAK* | .51 | .25 | 2.05* | .04 | .02 | 1.00 |
| *X2 x CSAK* | .48 | .30 | 1.61 | .11 | -.11 | 1.07 |
| *Brand transparency x CSAK* | -.19 | .08 | -2.38* | .02 | -.35 | -.03 |
| *X1 x Brand transparency x CSAK* | .21 | .15 | 1.43 | .16 | -.08 | .49 |
| *X2 x Brand transparency x CSAK* | .40 | .17 | 2.30* | .02 | .06 | .74 |
| ***Purchasing Intention*** | | | | | | |
| *X1 (Low vs Moderate traceability)* | -.46 | .38 | -1.22 | .22 | -1.20 | .28 |
| *X2 (Low vs High traceability)* | -.62 | .42 | -1.47 | .14 | -1.44 | .21 |
| *Brand Transparency* | .60 | .12 | 4.84*** | .00 | .36 | .84 |
| *X1 x Brand transparency* | -.02 | .27 | -.07 | .94 | -.55 | .51 |
| *X2 x Brand transparency* | -.46 | .23 | -2.06* | .04 | -.91 | -.02 |
| *Consusmers' Sustainability Awareness and Knowledge (CSAK)* | -1.04 | .37 | -2.78** | .01 | -1.77 | -.30 |
| *X1 x CSAK* | .65 | .46 | 1.40 | .16 | -.26 | 1.56 |
| *X2 x CSAK* | .86 | .56 | 1.55 | .12 | -.23 | 1.96 |

[1] The condition moderate vs high traceability informed was also analysed, and results showed no significant differences. Therefore, to simplify the analysis, only the standard multicategorical method of the process macro was reported.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Brand transparency x CSAK* | -.21 | .15 | -1.40 | .16 | -.51 | .09 |
| *X1 x Brand transparency x CSAK* | .41 | .27 | 1.51 | .13 | -.13 | .95 |
| *X2 x Brand transparency x CSAK* | .98 | .32 | 3.03** | .00 | .34 | 1.62 |
| **WTP** | | | | | | |
| *X2 (Low vs Moderate traceability)* | -3.57 | 2.17 | -1.64 | .10 | -7.85 | .71 |
| *X1 (Low vs High traceability)* | 1.42 | 2.42 | .59 | .56 | -3.35 | 6.19 |
| *Brand Transparency* | 2.47 | .72 | 3.46*** | .00 | 1.06 | 3.89 |
| *X1 x Brand transparency* | -1.33 | 1.56 | -.85 | .39 | -4.40 | 1.74 |
| *X2 x Brand transparency* | -1.66 | 1.30 | -1.28 | .20 | -4.23 | .90 |
| *Consusmers' Sustainability Awareness and Knowledge (CSAK)* | -2.03 | 2.15 | -.94 | .35 | -6.28 | 2.22 |
| *X1 x CSAK* | -3.25 | 2.68 | -1.21 | .23 | -8.54 | 2.04 |
| *X2 x CSAK* | -7.57 | 3.22 | -2.35* | .02 | -13.93 | -1.22 |
| *Brand transparency x CSAK* | -.65 | .88 | -.73 | .46 | -2.38 | 1.09 |
| *X1 x Brand transparency x CSAK* | 4.48 | 1.57 | 2.85** | .00 | 1.38 | 7.58 |
| *X2 x Brand transparency x CSAK* | 5.70 | 1.88 | 3.04** | .00 | 2.00 | 9.40 |
| **Brand Trust** | | | | | | |
| *X1 (Low vs Moderate traceability)* | -.45 | .23 | -1.98* | .05 | -.90 | -.00 |
| *X2 (Low vs High traceability)* | -.31 | .25 | -1.24 | .22 | -.81 | .19 |
| *Brand Transparency* | .73 | .07 | 9.72*** | .00 | .58 | .87 |
| *X1 x Brand transparency* | .01 | .16 | .04 | .97 | -.32 | .33 |
| *X2 x Brand transparency* | .00 | .14 | .01 | .99 | -.27 | .27 |
| *Consumers' Sustainability Awareness and Knowledge (CSAK)* | -.39 | .23 | -1.75 | .08 | -.84 | .05 |
| *X1 x CSAK* | .32 | .28 | 1.15 | .25 | -.23 | .87 |
| *X2 x CSAK* | ,30 | .34 | .89 | .37 | -.36 | .96 |
| *Brand transparency x CSAK* | -.20 | .09 | -2.13* | .03 | -.38 | -.01 |
| *X1 x Brand transparency x CSAK* | .17 | .16 | 1.02 | .31 | -.16 | .49 |
| *X2 x Brand transparency x CSAK* | .30 | .20 | 1.53 | .13 | -.09 | .67 |

*Note: ***p < .001, **p < .01, *p < .05, +p ≤ 1*

*X1 = Low v.s Moderate Product Traceability Information*

*X2 = Low vs. High Product Traceability Information*

*Table 11 – Conditional Effects*

| | | Conditional Effect | SE | LLCI | ULCP |
|---|---|---|---|---|---|
| | **Brand Authenticity** | | | | |
| X2 | High Transparency -1SD CSAK | .02* | .48 | -2.05 | -.15 |
| | High Transparency +1SD CSAK | .02* | .35 | .11 | 1.48 |
| | **Purchasing Intention** | | | | |
| X2 | Medium Transparency -1SD CSAK | .04* | .65 | -2.60 | -.02 |
| | High Transparency -1SD CSAK | .00*** | .90 | -5.30 | -1.74 |
| | High Transparency Mean CSAK | .01** | .53 | -2.48 | -.40 |
| | **Willingness to Pay** | | | | |
| X1 | Low Transparency -1SD CSAK | .04* | 3.74 | .36 | 15.12 |
| | Medium Transparency +1SD CSAK | .04* | 2.98 | -12.04 | -.30 |
| X2 | Low Transparency -1SD CSAK | .00*** | 5.47 | 7.73 | 29.32 |
| | Medium Transparency -1SD CSAK | .05* | 3.78 | .04 | 14.94 |

## 6. Conclusions and Implications

This research aims to answer a set of questions regarding whether transparency in supply chain practices, specifically, the level of product traceability information (low, moderate, high), impacts consumer valuations (brand trust, brand authenticity, purchasing intention, and willingness to pay) in fast fashion. Additionally, it examines the impact of consumers' prior

sustainability awareness and knowledge, and their perceptions of brand transparency, on their brand perceptions in response to varying levels of product traceability. An experimental study was conducted to methodically address and test these research questions and their underlying hypotheses.

***RQ1: How does transparency in supply chain practices influence consumer valuations in fast fashion?***

Increasing levels of product traceability information were found to enhance brand authenticity and trust, aligning with existing literature that transparent communication positively affects consumer responses (Yang and Battocchio, 2021). Moreover, the inclusion of a cost breakdown in the high traceability condition, which consumers are particularly sensitive to, further boosts brand valuation, indicating that consumers value more detailed transparency (Yang and Battocchio, 2021). Counterintuitively, the increased traceability information does not always significantly impact purchasing intention or willingness to pay (WTP), suggesting that beyond a certain point, additional traceability may not further influence purchasing decisions, possibly due to consumers' limited understanding of the information.

***RQ2: How does brand transparency affect consumers' valuations of products with traceability information disclosure?***

Additionally, the findings demonstrate that higher perceptions of brand transparency significantly enhance consumers' brand trustworthiness and authenticity, willingness to pay, and purchasing intentions. However, while transparency heightens consumer valuations, adding product traceability information did not interact significantly to influence these perceptions. Findings suggest that brand transparency *per se* is a powerful attribute that elevates consumer valuations positively.

***RQ3: To what extent do prior sustainability awareness and knowledge influence brand transparency perceptions on the relationship between information disclosure and consumers' brand valuation?***

Lastly, the interaction between product traceability information x brand transparency x CSAK reveals significant differences in purchasing intentions and brand authenticity. As sustainability awareness and knowledge increase, higher levels of product traceability information enhance brand authenticity and purchasing intentions for perceived transparent brands. This effect highlights the importance of consumers' sustainability and awareness knowledge in moderating perceived brand transparency, aligning with research indicating that consumer knowledge

influences product valuations and consumer attitudes (Liu et al., 2020; Polonsky et al., 2012; Kong et al., 2016). However, this effect does not significantly affect the trust or willingness to pay for a brand, suggesting that while consumers' sustainability and awareness knowledge enhances the perceived authenticity and purchase intentions for transparent brands, it does not universally boost all aspects of brand valuation.

Overall, the study underscores the importance of brand transparency and consumer sustainability awareness and knowledge in shaping brand valuations. This highlights the complexities in consumer responses to varying levels of product traceability information, suggesting that while transparency and traceability are important, their effects can also change with consumers' prior sustainability concerns.

### 6.1 Theoretical Implications

This research addresses one of modern society's most pressing environmental issues, namely fast fashion's unsustainable manufacturing methods. It contributes to further understanding of existing literature on product traceability information, brand transparency (Badhwar et al., 2023; Kim et al., 2020; Yang and Battocchio, 2021), and consumers knowledge and awareness of sustainability issues (Zameer and Yasmeen, 2022; Zhang et al., 2021), within the fashion context. This study explores the influence of these factors on consumer perceptions of brand trust and authenticity, purchasing intentions and willingness to pay.

The study provides insights into the impact of various levels of product traceability information (low, moderate, high) on brand valuation. Findings indicate that more detailed traceability information enhances perceptions of brand authenticity and trust. However, this does not always translate into higher purchase intentions or willingness to pay, especially when moving from moderate to high or low to moderate traceability levels. Furthermore, the research also extends the understanding of brand transparency (Badhwar et al., 2023; Kim et al., 2020; Yang and Battocchio, 2021), demonstrating its influence on consumer brand perceptions when linked with product traceability information levels. This broadens the scope of research into how transparency and traceability can shape a brand's image.

Additionally, this dissertation pioneers the exploration of the moderated moderation effect of consumers' sustainability awareness and knowledge, brand transparency perceptions, and levels

of product traceability information within the fashion industry. It underscores the need for further research to address gaps in consumer knowledge and awareness of sustainability issues.

### 6.2 Managerial Implications

This research provides valuable insights for managers and companies in the fast fashion industry, highlighting the importance and influence of transparent supply chain practices. Findings suggest that brand transparency perceptions positively influence consumer perceptions of brand trust and authenticity, purchasing intentions and willingness to pay.

While increased product traceability information significantly influences brand authenticity and trust, their impact on purchasing behaviours is more nuanced. This highlights the challenge in fast fashion—bridging the gap between consumer awareness of ethical practices and actual purchasing decisions, which are often influenced by the affordability and accessibility of fast fashion items.

Additionally, this study highlights the importance of fashion brands engaging in clear communication about product origins and manufacturing processes to enhance brand authenticity and build consumer trust. It also examines the impact of cost breakdown disclosures, revealing this as a sensitive yet effective way to increase transparency. Fast fashion brands could benefit from regularly sharing detailed information to close the knowledge gap about sustainability. Brands should address this by launching educational campaigns to improve consumer understanding of sustainability issues and the importance of transparency, which could help reduce scepticism and better align brand values with consumer expectations. Consistent transparency efforts can strategically position brands, enhancing their image and building a loyal, ethically-minded customer base.

As one of the largest industries worldwide, fast fashion brands are essential for promoting ethical and sustainable consumerism through transparent practices that support long-term sustainability in the fashion industry.

## 7. LIMITATIONS AND FUTURE RESEARCH

While this dissertation contributes to a deeper understanding of product traceability information, brand transparency and the impact of consumers' knowledge and awareness on sustainability, it acknowledges several limitations for future research.

An online questionnaire was used for data collection, and distributed on social media platforms. However, this method presents challenges in controlling external factors that might affect responses, such as distractions, time spent on the survey, and honesty, potentially compromising internal validity. Future research could use different data collection methods to better control participants' environments and ensure commitment and concentration. Additionally, social desirability bias may have influenced responses, especially regarding ethical or sensitive questions, for example, the questions about their level of knowledge and awareness about sustainability.

Potential biases in the study's results may arise from the demographic profile of the participants, as over half of the sample consists of individuals aged 18 to 25, and more than half hold at least a bachelor's degree. Thus, future studies should aim to include a more diverse sample across different ages, educational levels, and cultural backgrounds to enhance representativeness.

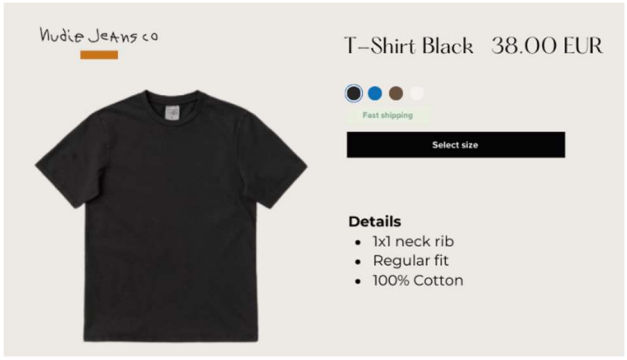
Furthermore, the manipulation scenarios involved three different versions of the same product, a black t-shirt from the brand Nudie Jeans. Future research could assess whether a different type of product or a different brand would impact the research findings. Additionally, the scenario designs were limited by the resources available to the author and were not comparable to professionally produced advertisements. Moreover, due to the time and money constraints of this study and, once it includes three different versions of the manipulation, a larger sample size could potentially enhance the research findings' significance and improve its reliability.

Lastly, since this study is pioneering in exploring the relationship between brand transparency, consumer sustainability knowledge, and product traceability, further research is needed to evaluate consumers' information-processing mechanisms when faced with new track-and-trace strategies that disclose product attribute information. This opens an avenue for research to understand in more detail the cognitive and affective processes behind transparency, product-related information, and sustainability credentials communicated by brands. Companies and associated brands will benefit from this and further research, especially those operating within the EU borders which have to comply with the recent Ecodesign for Sustainable Products Regulation (ESPR) legislation.

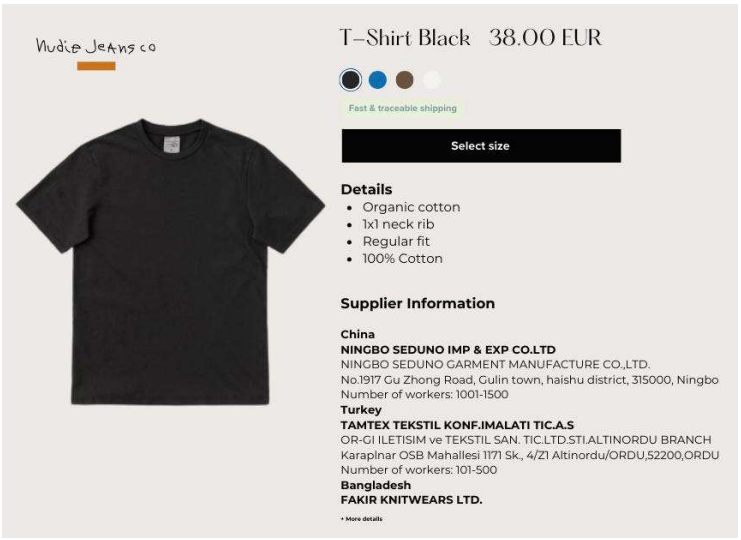
## 8. APPENDICES

### Appendix 1: Stimuli

A: Low Product Traceability Information




B: Moderate Product Traceability Information

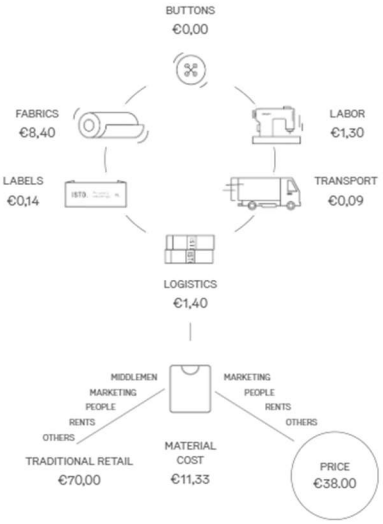



C: High Product Traceability Information

D: ISTO – Cost Information

## TRANSPARENCY

Cotton clear transparency. When you choose ISTO., what you see is exactly what you get. That means you have a clear understanding of everything that went into making our clothes. First, we only work with factories that can be held to the higher standards in social responsibility and work policies. Second, you get to see exactly how much we paid for each and every component from materials to production.




E: H&M – Supplier Information

## Informações sobre o fornecedor

Todos os nossos produtos são fabricados por fornecedores independentes em muitas partes do mundo. Os fornecedores e fábricas que trabalham connosco têm de assinar o nosso Compromisso com a Sustentabilidade. Além disso, temos funcionários nos nossos escritórios de produção globais que asseguram o cumprimento deste compromisso.

Se pretender mais informações sobre o nosso Compromisso com a Sustentabilidade e o trabalho que realizamos com os fornecedores e fábricas em geral, visite "Standards & policies" em hmgroup.com.

Por agora, só podemos partilhar estas informações para produtos H&M.

**Camboja**

**BEIJING JOYWIN FASHION TEXTILE CO., LTD.**

Runsing Knitting International Co., Ltd.
No. 110, Building No. 5-6-7-8, Prek Doung Village, Kampong Svay , Commune, Kien Svay District, Kandal Province, 08554, Kandal
Número de funcionários: 501-1000

SILVER AGE KNITTING CO., LTD
Village 1, Svay Rolom commune, Saang District, Kandal Province, 00051, Kandal
Número de funcionários: 501-1000

Fechar

## Appendix 2: Main Study Survey

Hello!!

Welcome to my master's thesis survey and thanks for taking the time to respond. :)
It will take about 5 to 6 minutes to complete this survey. Your participation will be extremely valuable for the successful completion of my thesis research.
All data obtained will be anonymous and confidential, so please answer to the entire survey honestly. There are no right or wrong answers!

Thank you very much for your participation and help!!
Sara Viana

For any questions contact me at: s-samaviana@ucp.ptOn the following page, you will be presented with a webpage featuring a t-shirt from Nudie Jeans, ready to be purchased.
Please take the time to carefully look at all the information provided.

Q1. After looking at the product information above, how detailed is the information provided about the t-shirt production traceability?

- ○ Vey low (1)
- ○ Low (2)
- ○ Somewhat low (3)
- ○ Neutral (4)
- ○ Somewhat high (5)
- ○ High (6)
- ○ Very high (7)

Q2. After looking at the product information above, how do you perceive the amount of details about the t-shirt production transparency? Please rate your level of agreement with the following statements:

| | 1 - Strongly disagree (1) | 2 - Disagree (2) | 3 - Somewhat disagree (3) | 4 - Neither agree or disagree (4) | 5 - Somewhat agree (5) | 6 - Agree (6) | 7 - Strongly agree (7) |
|---|---|---|---|---|---|---|---|
| Nudie Jeans clearly and openly discloses information about its products. (1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans is transparent in its communication about product details. (2) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Overall, Nudie Jeans provides relevant information to ensure the transparency of its product. (3) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Q3. How familiar are you with the brand Nudie Jeans, on a scale from 1 (not at all) to 7 (extremely)?

- ○ 1 = No familiar at all (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 = Extremely familiar (7)

Q4. After looking at the previous t-shirt details, how do you perceive the brand to be?
Please rate your level of agreement with the following statements:

| | 1 - Strongly disagree (1) | 2 - Disagree (2) | 3 - Somewhat disagree (3) | 4 - Neither agree or disagree (4) | 5 - Somewhat agree (5) | 6 - Agree (6) | 7 - Strongly agree (7) |
|---|---|---|---|---|---|---|---|
| I have no doubt Nudie Jeans can be trusted. (1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans is trustworthy. (2) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I trust Nudie Jeans. (3) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Q5. Please rate your level of agreement with the following statements:

| | 1 - Strongly disagree (1) | 2 - Disagree (2) | 3 - Somewhat disagree (3) | 4 - Neither agree or disagree (4) | 5 - Somewhat agree (5) | 6 - Agree (6) | 7 - Strongly agree (7) |
|---|---|---|---|---|---|---|---|
| I would purchase the previously shown product of Nudie Jeans. (1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Q6. How much would you be willing to pay for the advertised t-shirt on a scale from 0 to 100 euros?

| | 0 10 20 30 40 50 60 70 80 90 100 |
|---|---|
| € () |  |

Q7. After looking at the previous t-shirt details, how do you perceive the brand to be?
Please rate your level of agreement with the following statements:

| | 1 - Strongly disagree (1) | 2 - Disagree (2) | 3 - Somewhat disagree (3) | 4 - Neither agree or disagree (4) | 5 - Somewhat agree (5) | 6 - Agree (6) | 7 - Strongly agree (7) |
|---|---|---|---|---|---|---|---|
| Nudie Jeans supports its consumers. (1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans adheres to its moral principles. (2) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans is original and unique. (3) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans stands out from others. (4) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans has important values to its consumers. (5) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans connects people with their true selves. (6) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans has an honest communication. (7) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Nudie Jeans is sincere and truthful. (8) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Q8. Please rate your level of agreement with the following statements:

| | 1 - Strongly disagree (1) | 2 - Disagree (2) | 3 - Somewhat disagree (3) | 4 - Neither agree or disagree (4) | 5 - Somewhat agree (5) | 6 - Agree (6) | 7 - Strongly agree (7) |
|---|---|---|---|---|---|---|---|
| I am knowledgeable about social equity issues in the fast fashion industry, including working conditions of factory workers and fair wage practices. (1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I am aware of child labor and sweatshop issues in the global supply chain of the fast fashion industry. (2) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I am aware of environmental issues in the fast fashion industry such as waste and pollution caused by excessive production of garments. (3) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I understand the environmental impact of products across the supply chain. (4) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I know more about socially responsible business than the average person. (5) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Final step to complete! Just some demographic questions about yourself.

Q9. What is the gender you identify as?

- ○ Female (1)
- ○ Male (2)
- ○ Non-binary / third gender (3)

Q10. What is your age?

- ○ Under 19 (1)
- ○ 19 - 24 (2)
- ○ 25 - 34 (3)
- ○ 35 - 44 (4)
- ○ 45 - 54 (5)
- ○ 55 - 65 (6)
- ○ Over 65 (7)

Q11. What is your occupation?

- ○ High School Student (1)
- ○ University Student (2)
- ○ Employed (3)
- ○ Unemployed (4)
- ○ Retired (5)

Q12. What is the highest level of education you have completed?

- ○ Less than High School (1)
- ○ High School (2)
- ○ Bachelor's Degree (3)
- ○ Master's Degree (4)
- ○ Doctoral Degree (5)

Q14. Where are you from?

▼ Please select below... (1) ... Other (196)

Q15. What is your current annual income in Euros?

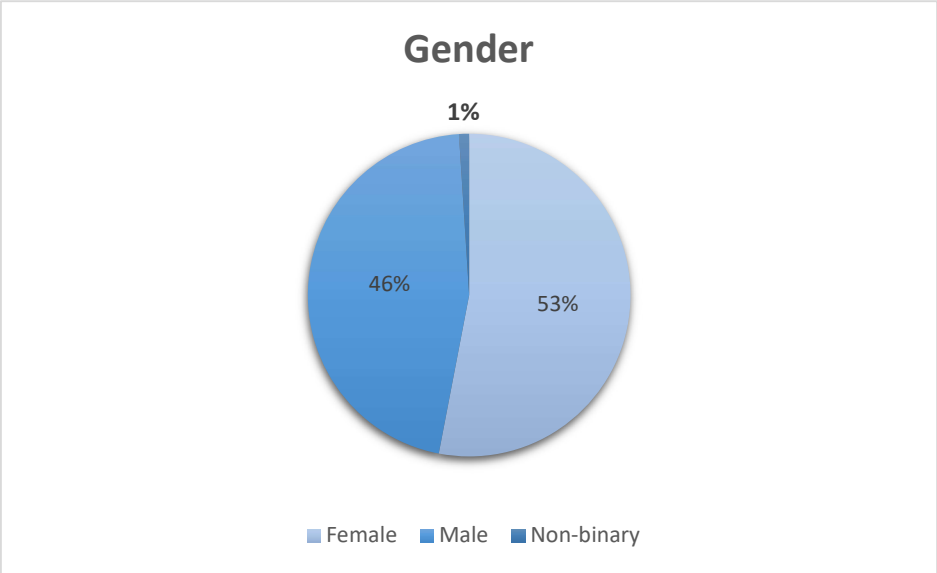
- ○ Under €10,000 (1)
- ○ €10,000 - €19,999 (2)
- ○ €20,000 - €29,999 (3)
- ○ €30,000 - €39,999 (4)
- ○ €40,000 - €49,999 (5)
- ○ €50,000 - €74,999 (6)
- ○ €75,000 - €99,999 (7)
- ○ €100,000 - €150,000 (8)
- ○ Over €150,000 (9)
- ○ I prefer not to disclose (10)

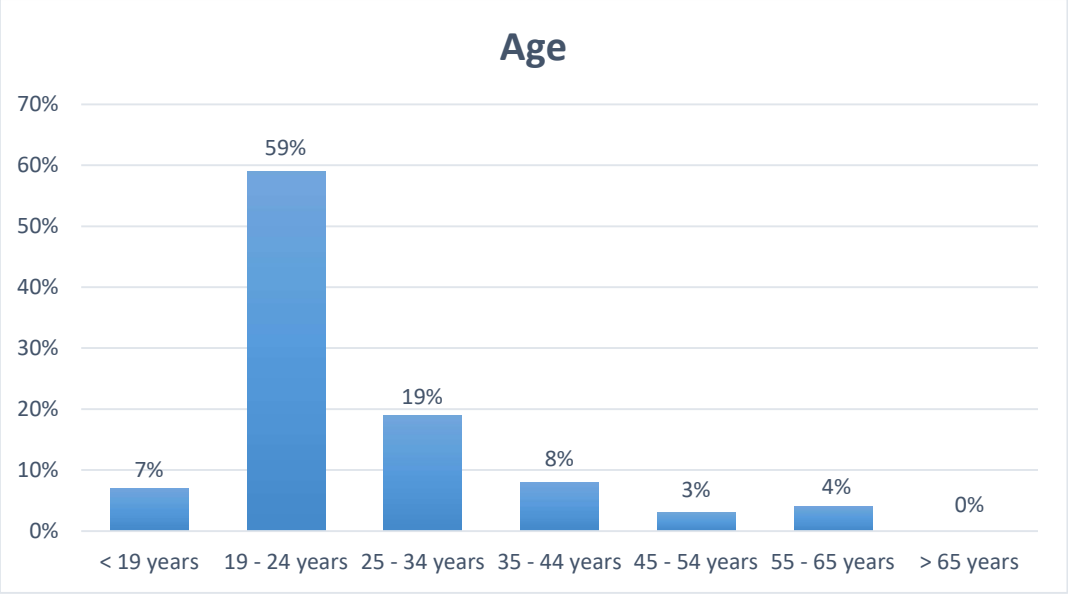
DONE!

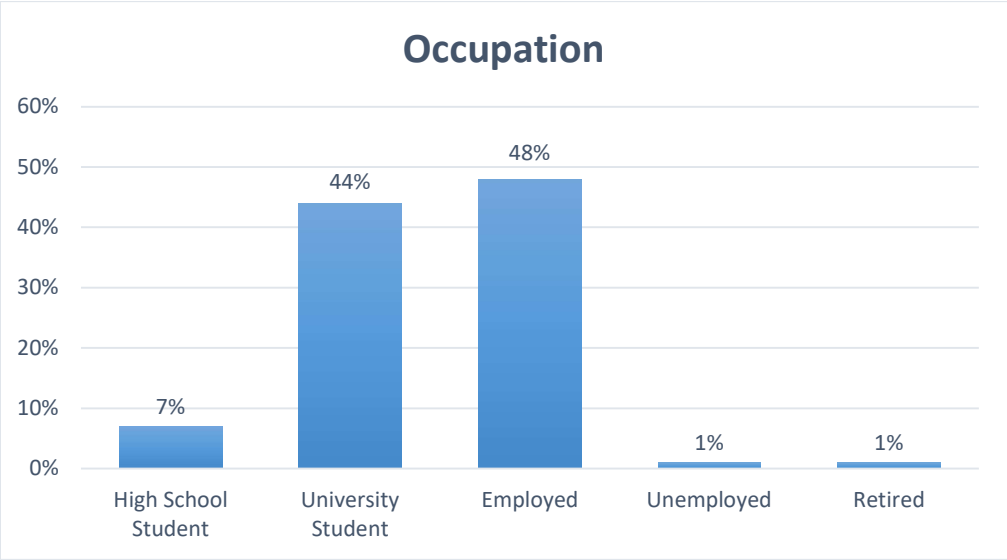
Thank you for participating! :))

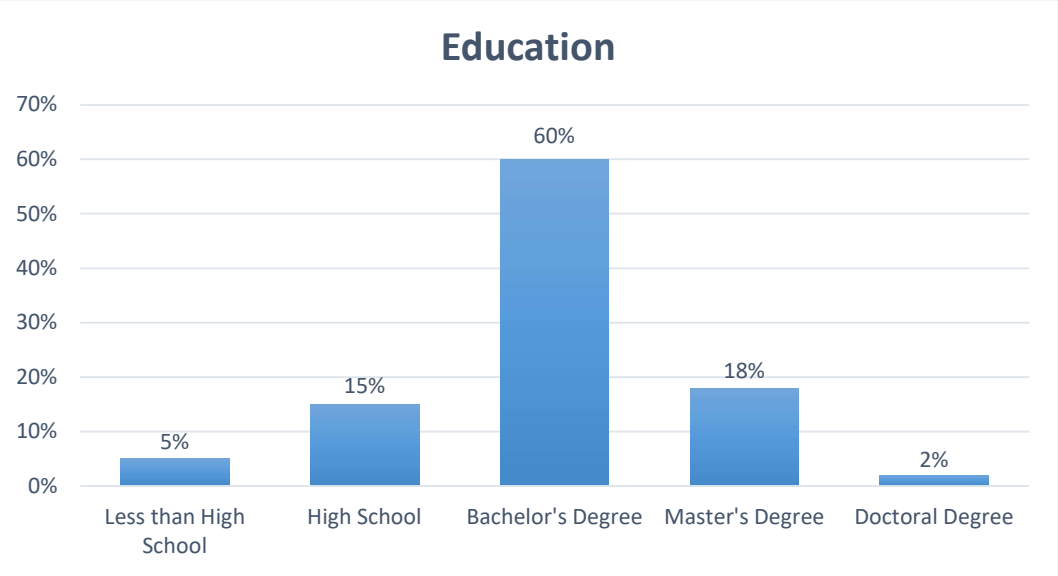
Please do not discuss the nature of the study with any other participants, as it may bias future results.

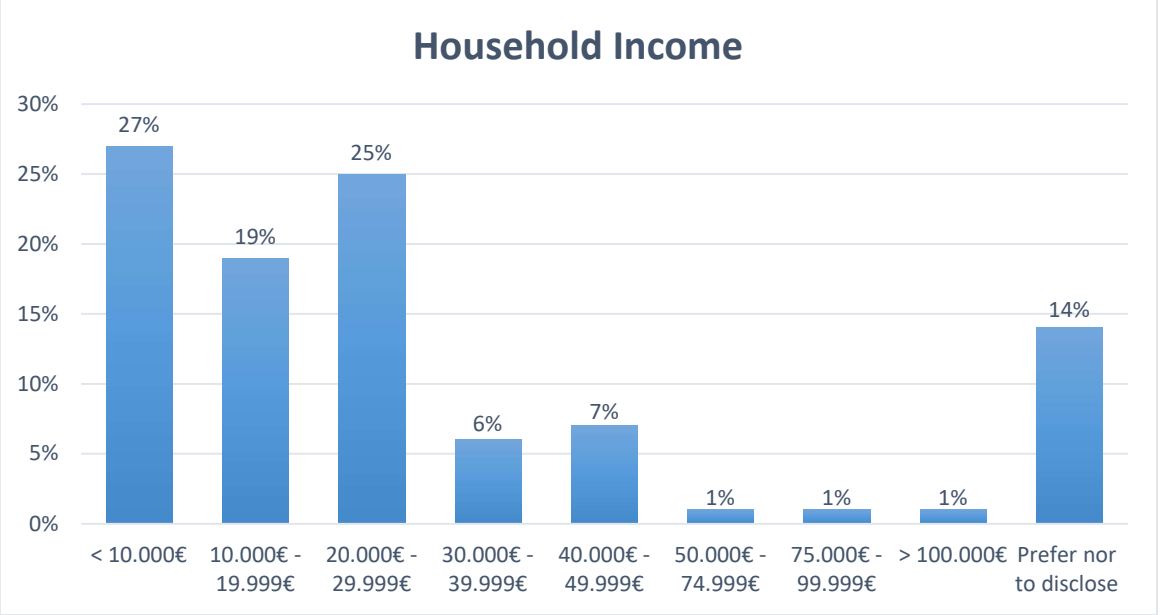
## Appendix 3: Survey Demographics




Occupation
60%
50%
40%
30%
20%
10%
0%
7%
44%
48%
1%
1%
High School Student
University Student
Employed
Unemployed
Retired


Education
70%
60%
50%
40%
30%
20%
10%
0%
5%
15%
60%
18%
2%
Less than High School
High School
Bachelor's Degree
Master's Degree
Doctoral Degree


Household Income
30%
25%
20%
15%
10%
5%
0%
27%
19%
25%
6%
7%
1%
1%
1%
14%
< 10.000€
10.000€ - 19.999€
20.000€ - 29.999€
30.000€ - 39.999€
40.000€ - 49.999€
50.000€ - 74.999€
75.000€ - 99.999€
> 100.000€
Prefer nor to disclose

## 9. REFERENCES

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and inter- preting interactions*. sage.

Alba, J. W., & Hutchinson, J. W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research,* 13(4), 411–454.

Alcaide González, M. Á., De La Poza Plaza, E., & Guadalajara Olmeda, N. (2020). The impact of corporate social responsibility transparency on the financial performance, brand value, and sustainability level of IT companies. Corporate Social Responsibility and Environmental Management, 27(2), 642-654.

Arrigo, E. (2020). Global sourcing in fast fashion retailers: Sourcing locations and sustainability considerations. Sustainability, 12(2), 508.

Asif, M., Xuhui, W., Nasiri, A., & Ayyub, S. (2018). Determinant factors influencing organic food purchase intention and the moderating role of awareness: A comparative analysis. Food Quality and Preference, 63, 144-150.

Auger, P., Burke, P., Devinney, T. M., & Louviere, J. J. (2003). What will consumers pay for social product features? *Journal of Business Ethics*, 42, 281-304.

Badhwar, A., Islam, S., & Tan, C. S. L. (2023). Exploring the potential of blockchain technology within the fashion and textile supply chain with a focus on traceability, transparency, and product authenticity: A systematic review. Frontiers in Blockchain, 6, 1044723.

Bateman, A., & Bonanni, L. (2019). What supply chain transparency really means. Harvard Business Review, 20, 2-8.

BBC. (2015). Waiting for the sea

Bellware, K. (2020). Seven people died when the only escape from a fire at an Indian denim factory was up a ladder. Editor T. W POST.

Bhaduri, G.; Ha-Brookshire, J.E. Do transparent business practices pay? Exploration of transparency and consumer purchase intention. Text. Res. J. 2011, 29, 135–149.

Bikoff, J. L., Heasley, D. K., Sherman, V., & Stipelman, J. (2015). Fake it'til we make it: regulating dangerous counterfeit goods. *Journal of Intellectual Property Law & Practice*, 10(4), 246-254.

Bläse, R., Filser, M., Kraus, S., Puumalainen, K., & Moog, P. (2023). Non-sustainable buying behavior: How the fear of missing out drives purchase intentions in the fast fashion industry. Business Strategy and the Environment.

BOF-MCKINSEY&COMPANY (2022). The state of fashion 2022. The State of Fashion ed. London: McKinsey & Company.

Brown, S., Kozinets, R.V. and Sherry, J.F. (2003), "Teaching old brands new tricks: retro branding and the revival of brand meaning", *Journal of Marketing*, Vol. 67No. 3, pp. 19-33.

Bruhn, M., Schoenmüller, V., Schäfer, D. and Heinrich, D. (2012), "Brand authenticity: towards a deeper understanding of its conceptualization and measurement", Advances in Consumer Research, Vol. 40, pp. 567-576.

Cambier, F. and Poncin, I. (2020), "Inferring brand integrity from marketing communications: the effects of brand transparency signals in a consumer empowerment context", *Journal of Business Research*, Vol. 109 No. 2, pp. 260-270.

Carbon Disclosure Project. (n.d.). Why Disclose a Company? Available online: https://www.cdp.net/en/companies-discloser (accessed on 2 March 2024).

Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution & Logistics Management*, 38, 360-387.

Carter, R.E. and Curry, D.J. (2010), "Transparent pricing: theory, tests, and implications for marketing practice", *Journal of the Academy of Marketing Science*, Vol. 38 No. 6, pp. 759-774

Ceylan, Özgür. 2019. Knowledge, attitudes and behavior of consumers towards sustainability and ecological fashion. Textile and Leather Review 2: 154–61.

Chang, H.J.(J). and Jai, T.-M.(C). (2015), "Is fast fashion sustainable? The effect of positioning strategies on consumers' attitudes and purchase intentions", *Social Responsibility Journal*, Vol. 11 No. 4, pp. 853-867.

Cho, C. H., Laine, M., Roberts, R. W., and Rodrigue, M. (2015). Organized hypocrisy, organizational façades, and sustainability reporting. Account. Organ. Soc. 40, 78–94.

Christens, B.D., Peterson, N.A. and Speer, P.W. (2011), "Community participation and psychological empowerment: testing reciprocal causality using a crosslagged panel design and latent constructs", Health Education & Behavior, Vol. 38 No. 4, pp. 339-347.

Clean Clothes Campaign. Follow the Thread. The Need for Supply Chain Transparency in the Garment and Footwear Industry. 20 April 2017.

Common Objective. (2018, May 31). Death, Injury, and Health in the Fashion Industry. Retrieved from https://www.commonobjective.co/article/death-injury-and-health-in-the-fashion-industry

DeVellis, R. F., & Thorpe, C. T. (2021). Scale development: Theory and applications. Sage publications.

Djelassi, S. and Decoopman, I. (2013), "Customers' participation in product development through crowdsourcing: uses and implications", Industrial Marketing Management, Vol. 42 No. 5, pp. 683-692.

Dornyei, Z. (2007). Research Methods in Applied Linguistics. Oxford University Press

Egels-Zandén, N.; Hansson, N. Supply chain transparency as a consumer or corporate tool: The case of Nudie Jeans Co. J. Consum. Policy 2016, 39, 377–395.

European Commission (EC). 2020a. EU Circular Economy Action Plan. Brussels: European Commission.

European Commission (EC). 2020b. EU New Consumer Agenda. Brussels: European Commission.

European Commission. (2022, April 22). Commission proposes strong and targeted new rules to advance gender equality in the EU. European Commission. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2013

Evans, J. R., & Mathur, A. (2005). The value of online surveys. Internet research, 15(2), 195-219.

Fashion Revolution. Transparency Is Trending. 2019. Available online: https://www.fashionrevolution.org/transparency-istrending/ (accessed on 2 March 2024)..

Fitzsimons, G. J. (2008). Death to dichotomizing. *Journal of Consumer Research*, 35(1), 5-8.

Fraser, I.J.; Müller, M.; Schwarzkopf, J. Transparency for multi-tier sustainable supply chain management: A case study of a multi-tier transparency approach for SSCM in the automotive industry. Sustainability 2020, 12, 1814.

Füller, J., Mühlbacher, H., Matzler, K. and Jawecki, G. (2009), "Consumer empowerment through internet-based cocreation", *Journal of Management Information Systems*, Vol. 26 No. 3, pp. 71-102.

Garcia-Torres, S., Rey-Garcia, M., Sáenz, J., & Seuring, S. (2022). Traceability and transparency for sustainable fashion-apparel supply chains. *Journal of Fashion Marketing and Management*: *An International Journal*, 26(2), 344-364.

Gebauer, J., Füller, J. and Pezzei, R. (2013), "The dark and the bright side of co-creation: triggers of member behavior in online innovation communities", *Journal of Business Research*, Vol. 66 No. 9, pp. 1516-1527.

Gilley, K. M., Worrell, D. L., Davidson III, W. N., & El–Jelly, A. (2000). Corporate environmental initiatives and anticipated firm performance: the differential effects of process-driven versus product-driven greening initiatives. *Journal of Management*, 26(6), 1199-1216.

Gilmore, J.H. and Pine, B.J. (2007), Authenticity: What Consumers Really Want, Harvard Business School Press, Boston, MA.

Gobbi, L.; Massa, I. Supply chain management in textile sector: The case of the Italian T-fashion traceability system. Int. J. Environ. Health 2015, 7, 359–370.

Gold, S. and Heikkurinen, P. (2018), "Transparency fallacy: unintended consequences of stakeholder claims on responsibility in supply chains", *Accounting, Auditing and Accountability Journal*, Vol. 31 No. 1, pp. 318-337

Guckian, M.L.; Chapman, D.A.; Lickel, B.; Markowitz, E.M. "A few bad apples" or "rotten to the core": Perceptions of corporate culture drive brand engagement after corporate scandal. J. Consum. Behav. 2018, 17, e29–e41.

Hageman, E., Kumar, V., Duong, L., Kumari, A., & McAuliffe, E. (2024). Do fast fashion sustainable business strategies influence attitude, awareness and behaviours of female consumers?. *Business Strategy and the Environment*, *33*(2), 1081-1098.

Han, H. (2020), "Theory of green purchase behavior (TGPB): a new theory for sustainable consumption of green hotel and green restaurant products", Business Strategy and the Environment, Vol. 29 No. 6, pp. 2815-2828.

Henninger, C. E., Alevizou, P. J., & Oates, C. J. (2016). What is sustainable fashion? *Journal of Fashion Marketing and Management: An International Journal*, 20(4), 400-416.

Human Rights Watch. Work Faster or Get Out. 11 March 2015. Available online: https://www.hrw.org/report/2015/03/11/work-faster-or-get-out/labor-rights-abuses-cambodias-garment-industry (accessed on 8 March 2024).

Hustvedt, G., & Kang, J. (2013). Consumer perceptions of transparency: a scale development and validation. *Family and Consumer Sciences Research Journal*, 41(3), 299-313.

Jeong, D., & Ko, E. (2021). The influence of consumers' self-concept and perceived value on sustainable fashion. *Journal of Global Scholars of Marketing Science*, 31(4), 511-525.

Jestratijevic, I., Uanhoro, J. O., & Rana, M. R. I. (2024). Transparency of sustainability disclosures among luxury and mass-market fashion brands: Longitudinal approach. *Journal of Cleaner Production*, 436, 140481

Joy, A., Sherry, J.F., Venkatesh, A., Wang, J. and Chan, R. (2012), "Fast fashion, sustainability, and the ethical appeal of luxury brands", Fashion Theory, Vol. 16 No. 3, pp. 273-295

Jung, H.J., Kim, H.J. and Oh, K.W. (2016), "Green leather for ethical consumers in China and Korea: facilitating ethical consumption with value-belief-attitude logic", *Journal of Business Ethics*, Vol. 135 No. 3, pp. 483-502

Kanchanapibul, M., Lacka, E., Wang, X. and Chan, H.K. (2014), "An empirical investigation of green purchase behaviour among the young generation", *Journal of Cleaner Production*, Vol. 66, pp. 528-536.

Kang, J. and Hustvedt, G. (2014), "Building trust between consumers and corporations: the role of consumer perceptions of transparency and social responsibility", *Journal of Business Ethics*, Vol. 125 No. 2, pp. 253-265.

Kang, J., Liu, C. and Kim, S.H. (2013), "Environmentally sustainable textile and apparel consumption: the role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance", *International Journal of Consumer Studies*, Vol. 37 No. 4, pp. 442-452

Khare, A. (2019). Green apparel buying: Role of past behavior, knowledge and peer influence in the assessment of green apparel perceived benefits. *Journal of International Consumer Marketing*, 35(1), 109–125.

Kim, N. L., Kim, G., & Rothenberg, L. (2020). Is honesty the best policy? Examining the role of price and production transparency in fashion marketing. *Sustainability*, *12*(17), 6800.

Kim, Y. and Choi, S.M. (2005), Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and PCE, ACR North American Advances, Duluth, MN.

Kong, H. M., Ko, E., Chae, H., & Mattila, P. (2016). Understanding fashion consumers' attitude and behavioral intention toward sustainable fashion products: Focus on sustainable knowledge sources and knowledge types. *Journal of Global Fashion Marketing*, 7(2), 103–119.

Kraft, T., Valdés, L., & Zheng, Y. (2018). Supply chain visibility and social responsibility: Investigating consumers' behaviors and motives. Manufacturing & Service Operations Management, 20(4), 617-636.

Kumar, V., Hallqvist, C., & Ekwall, D. (2017). Developing a framework for traceability implementation in the textile supply chain. Systems, 5(2), 33.

Lam, J.K.; Postle, R. Textile and apparel supply chain management in Hong Kong. Int. J. Cloth. Sci. Technol. 2006, 18, 265–277.

Lambert, D. M., Croxton, K. L., Garcı0a-Dastugue, S. J., Knemeyer, M., & Rogers, D. S. (2006). Supply chain management processes, partnerships, performance (2nd ed.). Jacksonville, FL: Hartley Press.

Lee, K. H., & Shin, D. (2010). Consumers' responses to CSR activities: The linkage between increased awareness and purchase intention. Public Relations Review, 36(2), 193-195.

Li, F., Kashyap, R., Zhou, N., & Yang, Z. (2008). Brand trust as a second-order factor: An alternative measurement model. *International Journal of Market Research*, 50(6), 817-839.

Lin, J., Lobo, A. and Leckie, C. (2017), "The role of benefits and transparency in shaping consumers' green perceived value, self-brand connection and brand loyalty", *Journal of Retailing and Consumer Services*, Vol. 35No. 2, pp. 133-141.

Liu, P., Teng, M., & Han, C. (2020). How does environmental knowledge translate into pro-environmental behaviors?: The mediating role of environmental attitudes and behavioral intentions. Science of the total environment, 728, 138126.

Lundblad, Louise, and Iain A. Davies. 2016. The values and motivations behind sustainable fashion consumption. *Journal of Consumer Behaviour* 15: 149–62.

Mandarić, D., Hunjet, A., & Kozina, G. (2021). Perception of consumers' awareness about sustainability of fashion brands. *Journal of Risk and Financial Management*, 14(12), 594.

Matzler, K., Wurtele, A. and Renzl, B. (2006), "Dimensions of price satisfaction: a study in the retail banking industry", *International Journal of Bank Marketing*, Vol. 24 No. 4, pp. 216-231.

Maxwell, S. (1995), "What makes a price increase seem 'fair'", Pricing Strategy and Price, Vol. 3 No. 4, pp. 21-27.

Maxwell, S. E., & Delaney, H. D. (2004). Designing experiments and analyzing data: A model comparison perspective. GEN, Psychology Press.

Mcfall-Johnsen, M. (2020). These facts show how sustainable the fashion industry is World Economic Forum.

McKay, L. (2008), "Transparency", Customer Relationship Management, Vol. 12, pp. 24-29.

McKinsey & Company & The Business of Fashion. (2019). The State of Fashion 2019. McKinsey&Company.https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/the%20influence%20of%20woke%20consumers%20on%20fashion/the-state-of-fashion-2019.pdf

McNeill, L., & Venter, B. (2019). Identity, self-concept and young women's engagement with collaborative, sustainable fashion consumption models. *International Journal of Consumer Studies*, 43(4), 368–378

Moe, T. Perspectives on traceability in food manufacture. Trends Food Sci. Technol. 1998, 9, 211–214

Mohan, B., Buell, R.W. and John, L.K. (2020), "Lifting the veil: the benefits of cost transparency", Marketing Science, Vol. 39No. 6, pp. 1-17.

Moorman, C., Deshpande, R. and Zaltman, G. (1993), "Factors affecting trust in market relationships", *Journal of Marketing*, Vol. 57 No. 1, pp. 10-81.

Moretto, A., Macchion, L., Lion, A., Caniato, F., Danese, P., & Vinelli, A. (2018). Designing a roadmap towards a sustainable supply chain: A focus on the fashion industry. *Journal of cleaner production*, 193, 169-184.

Morhart, F., Malär, L., Guèvremont, A. and Girardin, F. (2015), "Brand authenticity: an integrative framework and measurement scale", *Journal of Consumer Psychology*, Vol. 25 No. 2, pp. 200-218.

Nam, C., Dong, H. and Lee, Y.-A. (2017), "Factors influencing consumers' purchase intention of green sportswear", Fashion and Textiles, Vol. 4.

Napoli, J., Dickinson, S.J., Beverland, M.B. and Farrelly, F. (2014), "Measuring consumer-based Brand authenticity", *Journal of Business Research*, Vol. 67No. 6, pp. 1090-1098.

Neumann, H. L., Martinez, L. M., & Martinez, L. F. (2020). Sustainability efforts in the fast fashion industry: consumer perception, trust and purchase intention. *Sustainability Accounting, Management and Policy Journal*, 12(3), 571-590.

Nimbalker, G.; Mawson, J.; Cremen, C. The Truth behind the Barcode: Australian Fashion Report; Baptist World Aid Australia: North Ryde, NSW, Australia, 2015.

Nimkar, U. (2018). Sustainable chemistry: A solution to the textile industry in a developing world. Curr. Opin. Green Sustain. Chem. 9, 13–17.

Norton, T.; Beier, J.; Shields, L.; Househam, A.; Bombis, E.; Liew, D. A Guide to Traceability: A Practical Approach to Advance Sustainability in Global Supply Chains; United Nations Global Compact Office: New York, NY, USA, 2014.

Oh, H., Prado, P. H. M., Korelo, J. C., & Frizzo, F. (2019). The effect of brand authenticity on consumer–brand relationships. *Journal of Product & Brand Management*, 28(2), 231-241.

Olson EL (2013) It's not easy being green: the effects of attribute tradeoffs on green product preference and choice. J Acad Mark Sci 41(2):171–184

Omotoso, M. (2018). Who made my clothes movement: How it all began. Fashion Insiders & Co.

Park, H., & Kim, Y. (2016). An empirical test of the triple bottom line of customer-centric sustainability: The case of fast fashion. Fashion and Textiles, 3(1), 25.

Park, H., & Kim, Y. (2016). Proactive versus reactive apparel brands in sustainability: Influences on brand loyalty. *Journal of Retailing and Consumer Services*, 29(1), 114–122.

Parris, D., Dapko, J., Arnold, R. and Arnold, D. (2016), "Exploring transparency: a new framework for responsible business management", Management Decision, Vol. 54 No. 1, pp. 222-247.

Peters, G., Li, M., & Lenzen, M. (2021). The need to decelerate fast fashion in a hot climate-A global sustainability perspective on the garment industry. *Journal of cleaner production*, *295*, 126390.

Polonsky, M. J., Vocino, A., Grau, S. L., Garma, R., & Ferdous, A. S. (2012). The impact of general and carbon-related environmental knowledge on attitudes and behaviour of US consumers. *Journal of Marketing Management*, 28(3-4), 238-263.

Reynolds, M., & Yuthas, K. (2008). Moral discourse and corporate social responsibility reporting. *Journal of business ethics*, 78, 47-64.

Rinaldi, F. R., Di Bernardino, C., Cram-Martos, V., & Pisani, M. T. (2022). Traceability and transparency: enhancing sustainability and circularity in garment and footwear. Sustainability: Science, Practice and Policy, 18(1), 132-141.

Roberts, J.A. (1996), "Green consumer in the 1990: profile and implications for advertising", *Journal of Business Research*, Vol. 36 No. 3, pp. 217-232,

S. Şen , H. Başligil , C. G. Şen & H. BaraÇli (2008) A framework for defining both qualitative and quantitative supplier selection criteria considering the buyer–supplier integration strategies, *International Journal of Production Research*, 46:7, 1825-1845

SanMiguel, P., Pérez-Bou, S., Sádaba, T., & Mir-Bernal, P. (2021). How to communicate sustainability: From the corporate Web to E-commerce. The case of the fashion industry. *Sustainability*, *13*(20), 11363.

Sansome, K., Wilkie, D., & Conduit, J. (2024). Beyond information availability: Specifying the dimensions of consumer perceived brand transparency. *Journal of Business Research*, 170, 114358.

Saxena, S. B. (2020). Labor, global supply chains and the garment industry in south asia: Bangladesh after Rana plaza. Milton Park, Abingdon, Oxon ; New York, NY: Routledge, Taylor & Francis Group.

Schnackenberg, A. K., & Tomlinson, E. C. (2016). Organizational Transparency: A New Perspective on Managing Trust in Organization-Stakeholder Relationships. *Journal of Management*, 42(7), 1784-1810.

Shen, D., Richards, J. and Liu, F. (2013), "Consumers' awareness of sustainable fashion", Proceedings of the Marketing Management Association, Vol. 23 No. 2, pp. 134-147

Singh, J., de los Salmones Sanchez, M. M. G., & del Bosque, I. R. (2008). Understanding corporate social responsibility and product perceptions in consumer markets: A cross-cultural evaluation. *Journal of Business Ethics*, 80, 597-611.

Siraj, A., Taneja, S., Zhu, Y., Jiang, H., Luthra, S., & Kumar, A. (2022). Hey, did you see that label? It's sustainable! Understanding the role of sustainable labelling in shaping sustainable purchase behaviour for sustainable development. Business Strategy and the Environment, 31(7), 2820–2838

Sirdeshmukh, D., Singh, J. and Sabol, B. (2002), "Consumer trust, value, and loyalty in relational exchanges", *Journal of Marketing*, Vol. 66 No. 1, pp. 15-37.

Sodhi, M. S., & Tang, C. S. (2019). Research opportunities in supply chain transparency. Production and Operations Management, 28(12), 2946-2959.

Spence, A.M. (1974), Market Signaling: Information Transfer in Hiring and Related Processes, Harvard University Press, Cambridge, MA.

Sprecher, S., Treger, S., Wondra, J.D., Hilaire, N. and Wallpe, K. (2013), "Taking turns: reciprocal self-disclosure promotes liking in initial interactions", *Journal of Experimental Social Psychology*, Vol. 49No. 5, pp. 860-866.

Stanton, J.V. and Cook, L.A. (2019), "Product knowledge and information processing of organic foods", *Journal of Consumer Marketing*, Vol. 36 No. 1, pp. 240-252.

Tapscott, D. and Ticoll, D. (2003), The Naked Corporation: How the Age of Transparency Will Revolutionize Business, Simon and Schuster, New York,NY.

Taufique, K. M. R., Vocino, A., & Polonsky, M. J. (2017). The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market. *Journal of Strategic Marketing*, 25(7), 511-529.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.

The Economist. (2017). Looking good can be extremely bad for the planet.

Thomassey, S. Sales forecasts in clothing industry: The key success factor of the supply chain management. Int. J. Prod. Econ. 2010, 128, 470–483.

Uikey, A. A. A., & Baber, R. (2023). Exploring the Factors that Foster Green Brand Loyalty: The Role of Green Transparency, Green Perceived Value, Green Brand Trust and Self-Brand Connection. *Journal of Content, Community & Communication*, 17, 155-170.

UNFCCC. (2018, September 6). UN helps fashion industry shift to low carbon. UNFCCC. https://unfccc.int/news/un-helps-fashion-industry-shift-to-low-carbon

UNICEF (2020). Children's rights in the garment and footwear supply chain [Online]. UNICEF. Available: https://www.unicef.org/reports/childrens-rights-in-garment-andfootwear- supply-chain-2020

United Nations. 2016. The 2030 Agenda for Sustainable Development. New York: United Nations.

Valor, C. (2007), "The influence of information about labour abuses on consumer choice of clothes: a grounded theory approach", *Journal of Marketing Management*, Vol. 23 Nos 7/8, pp. 675-695

VanSandt, C.V. and Sud, M. (2012), "Poverty alleviation through partnerships: a road less travelled for business, governments, and entrepreneurs", *Journal of Business Ethics*, Vol. 110 No. 3, pp. 321-332.

Vinayavekhin, S., Banerjee, A., & Li, F. (2024). "Putting your money where your mouth is": An empirical study on buyers' preferences and willingness to pay for blockchain-enabled sustainable supply chain transparency. *Journal of Purchasing and Supply Management*, 100900.

Wang, H., Ma, B. and Bai, R. (2019), "How does green product knowledge effectively promote green purchase intention?", Sustainability, Vol. 11 No. 4, p. 1193.

Wang, X., & Yang, Z. (2010). The effect of brand credibility on consumers' brand purchase intention in emerging economies: The moderating role of brand awareness and brand image. *Journal of Global Marketing*, 23(3), 177–188

Xu, X., Wang, S. and Yu, Y. (2020), "Consumer's intention to purchase green furniture: do health consciousness and environmental awareness matter?", Science of the Total Environment, Vol. 704, p. 135275.

Yang, J., & Battocchio, A. F. (2021). Effects of transparent brand communication on perceived brand authenticity and consumer responses. *Journal of Product & Brand Management*, 30(8), 1176-1193.

Zameer, H., & Yasmeen, H. (2022). Green innovation and environmental awareness driven green purchase intentions. Marketing Intelligence & Planning, 40(5), 624-638.

Zhang, B., Zhang, Y., & Zhou, P. (2021). Consumer attitude towards sustainability of fast fashion products in the UK. Sustainability, 13(4), 1646.

Zimmerman, M.A. (2000), "Empowerment theory", Rappaport, J. and Seidman, E. (Eds), Handbook of Consumer Psychology, Springer, Boston, MA.