

Do Consumers Adhere to Unacceptable Attribute Levels?
A Conjoint Analysis of Sustainable Fashion

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Management Summary

The influence of anthropogenic climate change on people's lives is becoming more problematic with each passing day. For many people, climate change and the effect of climate change is no longer an abstract idea but rather a confronting reality. As a response, different trends of sustainable consumption have arisen. Some of these are only a little more than mere trends; however, they are ineffective, and people only sometimes stick to their beliefs. Similarly, in the fashion industry, some consumers want to make a positive impact with their consumption choices. As a result, they create specific clothing attributes they deem to be unacceptable, and these unacceptable attributes dictate their fashion choices. Literature has shown, however, that there is a discrepancy between these unacceptable attributes and actual purchasing behaviour in which consumers, despite indicating to find something unacceptable, still include them in their choices. This study adds to the current decisions about why this discrepancy happens by exploring consumer choice behaviour in a conjoint analysis experiment.

This thesis uses survey data from 94 young adults, including unacceptable attribute level screening questions and a choice-based task set. The conjoint analysis creates a rich data set from which many exciting interactions can be derived. We find that people often do not stick to their previously indicated unacceptable levels, from which the conclusion derives that people interpret unacceptable levels more as a strong preference rather than an absolute rule. More specifically, we found that people strongly influenced by the price of clothing items are more likely to choose items that include some attributes they deem unacceptable. This research also offers some potential problems with the study. For example, the sample may be biased since the method of gathering respondents has created a sample that shows a significantly above-average interest in sustainable consumption.

Furthermore, the conjoint design is an experiment, and a problem with this so that it only partially reflects real-life consumption. Generally, a big issue with sustainable fashion is that consumers need to know whether a product is sustainable. In the study, however, products have a uniform label that indicates if something is sustainable. Uniform sustainability labels help consumers stick to unacceptable attributes and make better sustainable purchasing decisions.

Preface

This master's thesis was written as part of the Master of Marketing Analytics program at Tilburg University. I specifically chose this topic because dr. Max Pachali's course Conjoint Analysis piqued my interest in conjoint analysis. Choosing this subject for my thesis has allowed me to implement the knowledge learned during that course for a more advanced conjoint analysis method. Furthermore, I am very passionate about the fashion industry, especially in turbulent times when sustainability is not an option but a necessary step for progress.

I also want to express my gratitude for your support during the writing process of my thesis. Dr. Max Pachali for the many review sessions in which he kindly showed much flexibility by allowing me to join them online whenever I could not attend them in person. Furthermore, I want to thank Elisabeth, Leonie, Phil, and Nils for their peer review of the conjoint survey. They gave me critical feedback to make sure the survey was clear for respondents.

Finally, I thank my mom and sisters for supporting me throughout my academic-educational career. I am very grateful for their support. Without it, I would not be in my current position.

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1. Introduction

One of today's toughest challenges is humans' lasting environmental impact. Years of economic growth have been on the back of the neglected environment, causing adverse effects that in today's world are becoming more apparent. For example, research has shown that the earth's temperature has increased by at least 1-degree celsius since the industrial revolution. This figure could rise to 2.5 degrees celsius as soon as 2050 (Masson-Delmotte et al., 2018). Air pollution, another major environmental threat, directly contributes to hundreds of thousands of premature human deaths (Silva et al., 2017). Deforestation leads to up to 17% of total human-caused CO₂ emissions in the atmosphere (Baccini et al., 2012). Lastly, soil degradation and accelerated dryland due to climate change could permanently affect food production industries (Huang et al., 2016). Moreover, with extreme weather events now becoming increasingly common, the effect of anthropogenic climate change is not an abstract idea but rather a daunting reality. Heat waves in Europe (Seneviratne et al., 2006), wildfires in America (Richardson et al., 2022), Floods in India (Floods | NDMA, GoI, n.d.), yellow dust in China (Qian et al., 2002) are some examples of events that occurred in the past year. Economists claim that environmental impact cannot be ignored any longer as it has become one of the biggest economic challenges of the 21st century (Nordhaus, 2019).

Which industries pollute and contribute the most to anthropogenic climate change? Fashion ranks second among the top three most polluting industries (Anguelov, 2015). The rapid increase in fast fashion consumption, with brands like Zara and H&M leading the charge, has also increased the need for the textile industry. Textile production causes 10% of the total emission of greenhouse gases (IPCC, 2022). This percentage could go even higher when considering the use phase, which includes transportation and washing (Niinimäki et al., 2020). The natural alternative, cotton, has a lower carbon output in the production cycle but a higher output in the use cycle, effectively cancelling out the more sustainable nature of cotton.

Furthermore, much of the total cotton production stems from offshore locations with poor working conditions. Recent reports claim that 85% of China's cotton uses forced labour with poor working conditions (Batha, 2020). Also, labour exploitation is used in the production stage to sustain the increasing demand for fast fashion. Underpaid workers and offshore sweatshops account for large production output. The poor working conditions

contribute to tragedies such as the Rana Plaza building collapse resulting in the death of over a thousand workers in Bangladesh (BBC News, 2013).

Many consumers have become aware of the negative impacts overconsumption can have. Consumer knowledge about climate change and its causes has dramatically increased in recent years, and with this increase in knowledge, attitudes towards sustainable consumption have also increased (Tobler et al., 2012). Trends have arisen as consumers want to have a positive impact. Buying second-hand clothes, buying slow fashion, and buying luxury fashion with a long life are all similar trends that combat the adverse effects of overconsumption (Sun et al., & 2021). Critics of individual consumers' actions to improve the environmental impact of consumption claim that these individual actions lack effectiveness. Some researchers claim that industries blame consumers for maintaining business practices (Pereira Heath & Chatzidakis, 2012). Such business practices are familiar to the car industry, deployed such tactics as early as the 1920s (Lewis, 2014). However, research shows that individual action can start grassroots movements influencing companies' significant business decisions (Klein et al., 2004). Many companies gained a strong competitive advantage by pursuing strategic sustainability goals. For example, G-Star and Reformation have grown a large customer base by promoting sustainable material use (G-Star, 2020; Puspita & Chae, 2021). The before-mentioned success stories indicate that consumer trends have shifted towards more sustainable fashion consumption. This research investigates how consumers value sustainable fashion attributes, whether consumers' preferences align with sustainability, and how consumers make compromises to be sustainable.

Furthermore, this research is relevant for advancing and further testing conjoint analysis. Much focus in consumer research has been on how product attributes influence choice and purchasing decisions (Jaccard et al., 1986). Conjoint analysis has been a proven method able to attribute value to specific product and service attributes. Although consistently a popular research method, it could be more flawless. One of the significant criticisms of conjoint analysis is that it needs to assume that choice data is continuous and differentiable correctly.

In contrast, choice data often follow thresholds and other discontinuities (Gilbride & Allenby, 2004). One crucial proposed addition to standard conjoint analysis is to add screening questions. These questions should more closely reflect how consumers use thresholds to filter choice options (Gilbride & Allenby, 2004). In this study, we will use both methods of conjoint analysis, with and without screening questions, to reveal the core

differences between the two methods. Since sustainable fashion consumers have strong beliefs about specific product attributes, we expect to find many attributes that form thresholds in choice decisions, making this the ideal testing case. Our findings contribute to more accurate predictions from the conjoint analysis.

In conclusion, this study aims to investigate consumers' evaluation of sustainable fashion. The conjoint study design allows for measuring how consumers rate different attributes of sustainable fashion and how they compromise between desirable attributes. Furthermore, this study is interested in unacceptable attribute levels and how consumers adhere to their beliefs. Added screening questions could more realistically reflect real-life scenarios in which consumers eliminate choices based on external and internal factors (Gilbride & Allenby, 2004).

The remainder of this thesis is structured as follows. Firstly the existing literature is presented in chapter 2, which will go over the relevant theory regarding sustainable fashion, what drives consumers to buy sustainable fashion and advancements in conjoint analysis. Then the theory will be applied in a theoretical framework in chapter 3. Furthermore, chapter 3 also showcases the methods applied in this research, including the questionnaire design. The data collection methods and the data are described in chapter 4. Chapter 5 follows and presents the results. Then chapter 6 presents the conclusion. Finally, chapter 7 closes out this study with managerial implications and limitations.

2. Literature Review

2.1 Sustainable Fashion

In fashion, something is sustainable when everything revolving around the production and consumption of fashion meets quality standards without jeopardising the needs of future generations (Owens, 2002). In practice, there are a few attributes that make fashion sustainable. One of these attributes is durability (Sun et al., 2021). By being durable, clothing items have a longer life span and therefore do not require replacing as often, resulting in a lower need for production. Another attribute is the output of harmful emissions during the production process (Gbolarumi et al., 2021). Modern fabrication techniques aim to reduce greenhouse gas output, limiting the adverse environmental effects. Finally, to be deemed sustainable, fashion needs to consider social factors (Jang et al., 2012).

People generally want to consume sustainably because they believe it will have a minimal adverse effect on the environment. Research has shown that sustainable behaviour occurs individually and in groups (Ruby et al., 2020). On the individual level, people link their behaviour to its effect on the environment. An issue arises, however, when people need to connect their actions to the negative impact they might have (Ginn & Lickel, 2020). On the group level, many biases arise in which people incorrectly compare themselves to others and assume that their actions are not as bad as others. Recent literature has had mixed results in showing whether consumers make purchasing decisions based on sustainable product attributes. For example, Chan and Wong (2012) found that sustainable product attributes do not affect purchasing decisions. Instead, they found that the higher price premium of sustainable products may deter consumers from purchasing them. On the other hand, Sun et al. (2021) found that the price premium associated with higher quality and more durable items is sufficient for consumers to purchase said items. Furthermore, they argue that a trend has arisen in which consumers buy more premium items that last longer as an effort to be more sustainable.

The significant variance in opinions on sustainable purchasing motivation indicates the complexity of the consumer decision-making process. Consumers make many decisions daily, and although homo economicus theory argues that this is a rational process, studies have found that human behaviour cannot be predicted solely by the rational actor framework (Henrich et al., 2001). Instead, it is theorised that human decision-making is a complex

process with many unexplained variables and outcomes. One theory crucial in understanding sustainable purchasing is the attitude behaviour gap, a term coined by Boulstridge and Carrigan (2000). In their paper, they explained how even though consumers seem to rate sustainable attributes and businesses positively, positive attitudes towards green goals do not directly influence purchasing behaviour. New findings show, however, that this is only sometimes the case within subgroups of the population. Within smaller consumer groups, people create a culture of sustainable purchasing, which elevates sustainable purchasing from a mere preference to a lifestyle (Moraes et al., 2012). People who consider themselves purely green consumers indicate particular product attributes as unacceptable. These unacceptable attributes indicate that consumers would never purchase items that include these unacceptable attributes, but in practice, this is not the case. One explanation for the unacceptable attribute violation offered by Young et al. (2010) is that it sometimes needs to be clarified whether something is sustainable. With the lack of universal sustainability labels, consumers may get confused, leading to unsustainable purchases.

An exciting avenue for research would be to discover methods to influence people into making sustainable purchasing decisions. Research has shown that people generally become more knowledgeable about sustainability, and some people are so passionate about it that they deem unsustainable purchasing unacceptable. However, even though some consumers find specific attributes unsustainable, they still do not entirely adhere to their beliefs and purchase unacceptable goods. Therefore, this study aims to contribute to the literature by investigating which factors influence sustainable attribute valuation and why consumers stick to their green purchasing beliefs.

2.2 Country of Origin

Another theory that aims to deepen consumer decision-making understanding is the Country of Origin (COO) theory. Nelson (1970) explains that consumers gather information from commercials, friends and family, and their experiences to make better purchasing decisions. However, when insufficient product information is available, people might rely on heuristics (Del Campo et al., 2016). Stereotyping is a heuristic that drives COO beliefs (Bodenhausen & Wyer, 1985; Peterson & Jolibert, 1995).

Most research has been on the effect of COO on perceived quality and perceived product performance, attitude, and purchase intention. For example, Peterson and Jolibert (1995) found that the COO substantially affects perceived quality and performance.

Consumers also use the COO of products as a signal to measure the connection between beliefs and the product. Verlegh and Steenkamp (1999) give an example of consumers supporting the domestic economy by buying domestically. Another normative motivation that has seen a rise in popularity is buying ethically by boycotting countries with harmful working environments (Carrigan & Attalla, 2001).

Combining objective sustainable attributes with heuristics-based attributes such as COO could bear fruitful insights into sustainable purchasing decisions. Therefore this study uses both sustainability attributes as well as COO attributes.

2.3 Conjoint Analysis with Screening Questions

Conjoint analysis is a research technique that measures the value of crucial attributes that make up a product or service (Green & Srinivasan, 1990). Conjoint analysis has proven to be a popular research method for its usefulness in recreating real-life scenarios in an experimental setting. A citation study reveals that conjoint analysis is ever-relevant as the study method is adaptable to modern research methods. We use Green's three most famous works as a proxy for the popularity of conjoint analysis as a field of study. Figure 1 shows the number of citations his work has gotten over the work. The citation analysis reveals a steady increase in citations of all three works. Significantly during the early 2000s, the number of citations increased rapidly.

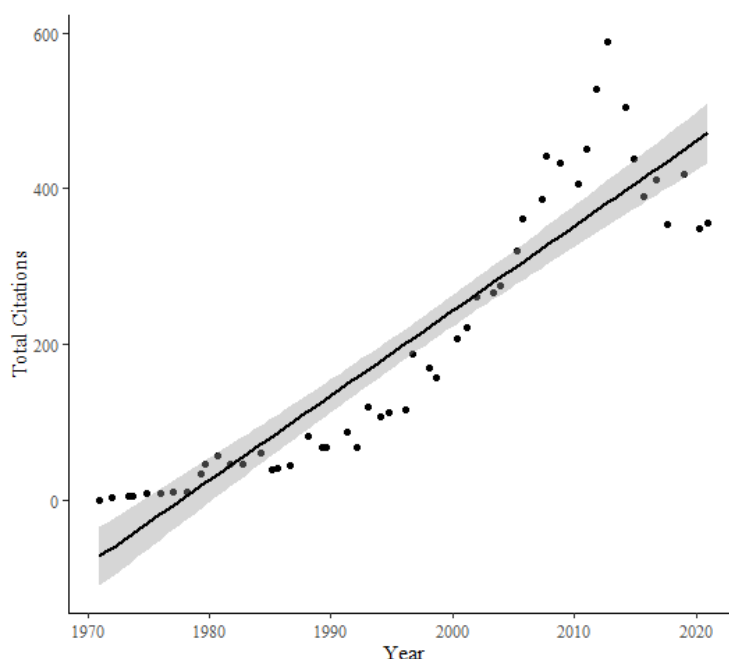


Figure 1. Total number of citations of Green's three most popular works per year

However, like most research techniques, conjoint analysis has flaws. Traditional models used in conjoint analysis assume consumer choice data to be continuous and differentiable. However, this assumption can cause problems in real-world applications since consumer choices can be much more complex and often follow thresholds and other discontinuities (Gilbride & Allenby, 2004).

Consumer psychology is a complex field of study that has produced much literature on consumers' decision processes. According to the black box theory, consumers are economic thinkers that make decisions based on external factors and internal motivation (Kotler et al., 2014). An example of an external factor that heavily influences decision-making is price. A consumer might even wholly disregard choice options based on the price exceeding a specific budget. Gilbride and Allenby use this scenario as an example: consumers use screening rules to eliminate choices.

Understanding internal drivers of consumer choice can be even more complex. Internal factors include decision-making and consumer characteristics such as beliefs, values, and lifestyle. One relevant theory related to the decision-making process that attributes to the discontinuous nature of choices is that of choice overload. The term choice overload is used to describe the adverse effect that occurs when people are presented with an overwhelming amount of choice information (Scheibehenne et al., 2010). Although a meta-analysis of choice overload has not confirmed any specific adverse effects, studies show strong evidence that choice overload can create discontinuities in choice studies (Chernev et al., 2015).

Consumer characteristics and internal factors are potentially even more relevant in this thesis' subject, sustainable fashion. As mentioned above, consumer characteristics include beliefs, values, and lifestyles. These characteristics are also strong drivers for sustainable consumerism. Lundblad and Davies (2016) conducted a study on sustainable fashion's demand side and uncovered some specific drivers for the recent increase in demand. According to their study, consumers want to buy sustainable fashion in pursuit of self-actualisation and positive environmental impact. These consumer characteristics cause discontinuation similar to external factors such as price, in that consumers might completely filter out choice options based on their sustainability. Furthermore, significantly younger generations' purchasing behaviour is affected by environmental concerns and perceived environmental responsibility (Lee, 2008).

In summary, external and internal factors drive the discontinuous nature of consumer choice. Testing consumer choice with simple conjoint analysis might overlook many relevant factors, especially factors relevant to sustainable fashion. Previous literature has shown a

growing trend towards sustainable fashion and green purchasing. In addition, younger generations value sustainability greatly, so much so that some younger consumers find unsustainable purchases unacceptable. A proposed addition to conjoint analysis that more accurately reflects how consumers filter out unacceptable choices is the 2-step conjoint analysis, which includes screening questions.

This research aims to avoid the pitfall of wrongly assuming consumer choice to be continuous and differentiable by using a 2-step conjoint model. In theory, this method should more accurately reflect customers' decision-making process, which often includes screening choices based on the most critical choice attributes.

3. Conceptual Framework

3.1 Conjoint analysis with screening questions

In order to evaluate people's preferences in clothing consumption, we will conduct a conjoint analysis that evaluates the attributes of a t-shirt. A t-shirt is a reasonably simple clothing item that is simple enough for the scope of this study. Furthermore, within the t-shirt market, there are enough options for varying degrees of sustainability.

The conjoint model has five attributes with 2-4 levels, and participants indicate unacceptable attribute levels as part of pre-choice task screening questions. Figure 2 gives a schematic overview of the study and illustrates the included attributes with their respective levels. The attributes are Price, Quality Guarantee, Material, Production, and Country of Origin. These attributes, commonly used in similar studies, are further substantiated in the following sections.

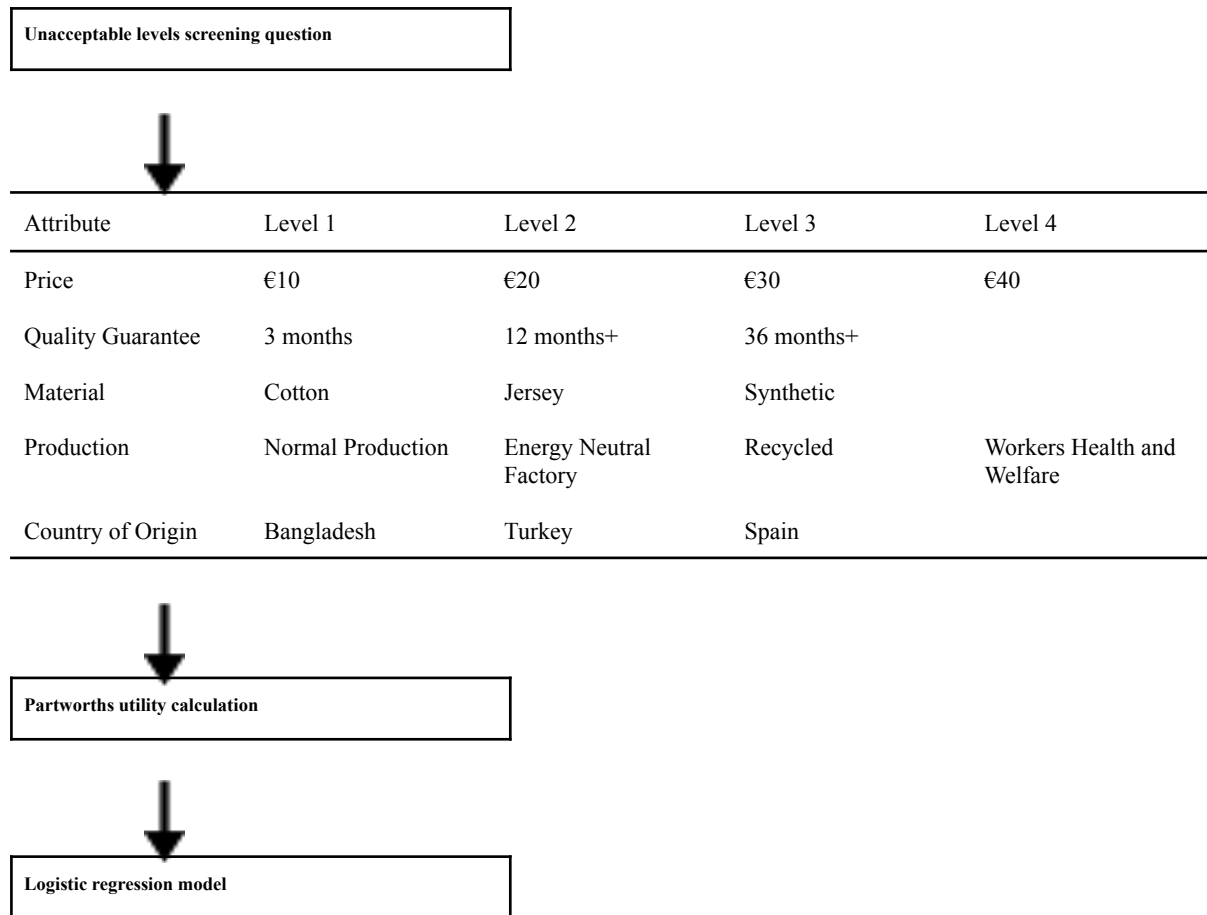


Figure 2. Conjoint study design with unacceptable attribute levels question

3.1.1 Screening questions

Over a series of screening questions, the respondents can indicate their unacceptable attribute levels. The degree of unacceptability is indicated on a 5-point Likert scale, following Vagias's (2006) unacceptable scale, allowing the respondents to reject an attribute level altogether or slightly reject it. During the choice tasks, respondents view options that include unacceptable attribute levels rather than excluding unacceptable ones (Cunningham et al., 2010). This is done purposefully to measure the degree of adherence to previously stated unacceptable attribute levels. The selected screening questions represent the attribute levels essential for sustainability optimally. These screening questions include environmentally sustainable attributes, people's welfare, durability, and country of origin.

The first screening question is as follows, "How unacceptable do you find t-shirts that are not manufactured in energy-neutral factories?", "How unacceptable do you find t-shirts manufacturers that cannot guarantee workers' health and welfare?", "How unacceptable do you find t-shirts that are not recycled?", "How unacceptable do you find t-shirts produced in Turkey", "How unacceptable do you find t-shirts produced in Bangladesh", "How unacceptable do you find t-shirts produced in Spain?", and "How unacceptable do you find t-shirts that do not last long?". Figure 3 shows the questions as presented to the respondents.

Screening Questions

I would like to ask you to indicate which levels are unacceptable to you.

Please choose below which options best match your opinion.

How unacceptable do you find t-shirts that are not manufactured in energy neutral factories:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts manufacturers that cannot guarantee workers health and welfare:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

Figure 3. Examples of screening questions found in the survey

3.2 Selection of relevant attributes

One of the most important parts of designing a conjoint study is the selection of relevant attributes that make up a product or service. First, the selected attributes must include the most influential attributes for consumers' choices. After that, the appropriate levels are added to the attributes to cover a large section of the market's offering. We derive these relevant attributes and their levels based on relevant literature, market research, and expert review.

Related conjoint studies have used a variety of attributes depending on the specific market segment they wanted to research. Some studies target particular niches in the market, which results in these studies utilising niche attributes. For example, Tseng et al. (2011) use attributes relevant to sports cycling clothes, sweat, and sunshine withstand ability. Our study is interested in a broader section of the clothing industry, so we have identified five commonly used attributes in studies that describe a more extensive section of the fashion market. In the following paragraphs, we go over all five relevant attributes of this study. Table 1 shows a summary of the relevant attributes and their respective levels.

Price is one of the essential attributes in conjoint analysis. Not only because it dramatically affects consumer decision-making but also because it enables market simulations (Orme, 2019). Furthermore, Kohli and Mahajan (1991) stress the importance of using a range of pricing which accurately reflects the product, which in turn will garner a significant application for pricing decisions of new products. Additionally, price sensitivity can be applied on an attribute level, giving great insights into how attributes affect purchase intention.

Similar studies about ethical and sustainable fashion usually price their products around 20 US dollars, with a minimum of 10 dollars. In this study, we use a range of 10 to 40 euros, with equal increments of 10 euros. Equal increments make the attribute linear, allowing for more accurate interpretations (Chakravarti et al., 2013). Moreover, the four levels make it so that the number of levels is roughly equal to the remaining attribute levels. Thus, avoiding influencing respondents to believe this attribute is more critical (Wittink et al., 1990). Finally, price is paramount in sustainable consumption because it can give some insights into the gap between ethical purchase intentions and actual buying behaviour (Carrington et al., 2010; Reimers et al., 2016). Carrington et al. (2010) describe in their paper that even though ethical consumption has become quite popular, sustainable product market share has remained relatively low.

Quality is the second attribute we include in this study. Quality is included in most related studies about fashion, sometimes as an attribute on its own and sometimes divided into multiple attributes. Quality has a strong connection with sustainability for a couple of reasons. Firstly, quality could be compromised as a negative side effect of sustainable production. Aakko and Niinimäki (2021) detail how recycled materials can, in some cases, degrade faster. Moreover, even though new production techniques have allowed recycled materials to last just as long as their unsustainable counterparts, there remains a stigma on recycled materials, resulting in consumers perceiving them to be of lesser quality regardless

(Aakko & Niinimäki, 2021). Secondly, sustainable fashion could be a double-edged sword. If sustainable production practices degrade the durability of clothes, the environmental benefits of such production techniques are negated by the need for more frequent consumption. Pookulangara and Shephard (2013) describe how a trend of infrequent but premium high-quality consumption, slow fashion, has emerged as a popular solution to sustainable consumption without compromising quality. Quality is a complex attribute to assess for consumers objectively. We have therefore chosen to let respondents know that there is a quality guarantee which assures customers how long an item will last.

The third attribute is the type of material used. This includes the fabrics that makeup t-shirts. Important to note is that this attribute is different from quality because even though the type of fabric could affect quality, the fabric does not entirely dictate quality. It is, therefore, more related to customer preference and specific use cases. Attribute materials used has three levels, cotton, jersey (cotton, wool, synthetic blend), and synthetic. Together, these materials make up most of the textile industry and are the most popular materials used specifically for t-shirts (Zalando, 2022).

Production is the fourth attribute, and it includes a variety of production methods. This relevant attribute is directly related to sustainability and is also the most important for the sustainability of fashion production as a whole. As discussed in the introduction section, there are different avenues for making fashion consumption more sustainable in different parts of the product's life cycle, the production stage, use stage, and discarding stage. In order to capture the most extensive section of the sustainable production process, we include sustainable production methods from various phases of production that affect nature and people. The levels include normal production processes, complete energy regeneration, guaranteed workers' health, and materials recycling.

The fifth and last relevant attribute in this study is country of origin. Dichter coined the term country of origin to describe how a product's acceptance and overall success are strongly related to the country in which it is manufactured (Dichter, 1962). The term has evolved since then, and some researchers have distinguished between the country of manufacturing and the country of design (Chao, 2001). A famous example is how Apple makes this distinctly visible on their products, a practice some people critique for it could be used to fool customers into believing the product is also produced in the country of design. However, the country of production is an essential factor in sustainable consumption since some countries that provide the most offshore labour also have poor worker conditions (Bick et al., 2018).

Table 1

Description of Relevant Attributes

Attribute	Description
Price	Price for one t-shirt.
Quality Guarantee	Guarantee for how long a t-shirt will last.
Material	The fabric the t-shirt is made of.
Production	Variety of production methods relevant in various stages of the production cycle including material production, labour, and energy usage.
Country of Origin	Country of manufacturing of the t-shirt.

Table 2

Attribute levels

Attribute	Level 1	Level 2	Level 3	Level 4
Price	€10	€20	€30	€40
Quality Guarantee	3 months	12 months+	36 months+	
Material	Cotton	Jersey	Synthetic	
Production	Normal Production	Energy Neutral Factory	Recycled	Workers Health and Welfare
Country of Origin	Bangladesh	Turkey	Spain	

3.3 Conjoint model

This study uses choice-based conjoint analysis to measure consumer preferences for sustainable fashion. The choice-based conjoint analysis uses a discrete choice model based on random utility theory (Luce & Tukey, 1964). The primary utility formula is as follows:

$$U_{ij} = \beta_i \cdot X_j + \varepsilon_{nj}$$

Figure 4. Basic CNC design model, random utility theory formula

The basic choice-based conjoint model, expanded with the relevant attributes in this study, looks as follows:

$$U_{ij} = \beta_{i1} \cdot Price_j + \beta_{i2} \cdot Quality_j + \beta_{i3} \cdot Materials_j + \beta_{i4} \cdot Production_j + \beta_{i5} \cdot COO_j + \varepsilon_{nj}$$

Figure 5. CNC design model, random utility theory formula with the relevant attributes

In this model, utility (U_{ij}) consists of the individual part worths of the five attributes (β_{i1} to β_{i5}) and the error term (ε_{nj}).

3.4 Regression model

The second goal of the study is to go further than a regular conjoint study, which aims to measure the utility of specific product attributes by adding screening questions and measuring how respondents possibly violate or adhere to these screening questions. The logistic model expands on the previously showcased conjoint model by measuring attribute utility's and demographic variables' effects on the number of violations of unacceptable levels. The logistic model is as follows:

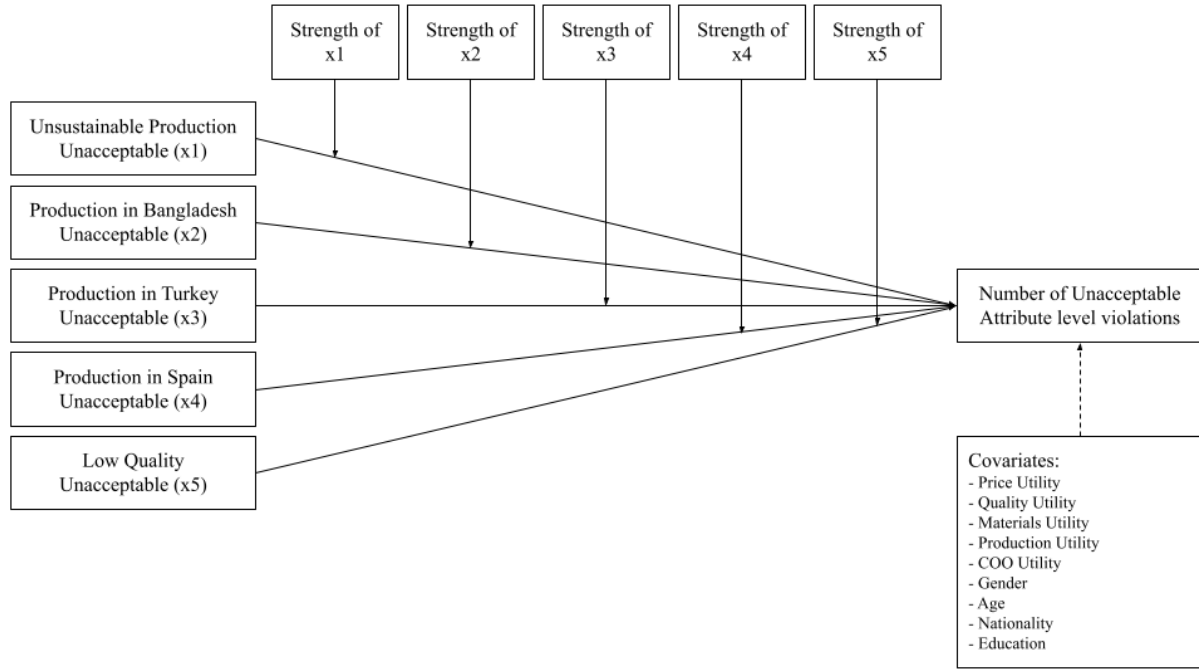


Figure 6. Conceptual Model

$$\begin{aligned}
 Y = & \beta_0 + \beta_1 \cdot \text{Unsustainable Production Unacceptable}_1 \\
 & + \beta_2 \cdot \text{Production in Bangladesh Unacceptable}_2 + \beta_3 \cdot \text{Production in Turkey Unacceptable}_3 \\
 & + \beta_4 \cdot \text{Production in Spain Unacceptable}_4 + \beta_5 \cdot \text{Low Quality Unacceptable}_5 \\
 & + \beta_6 \cdot \text{Unsustainable Production Unacceptable}_6 \times \text{Strength of Relative Unacceptance} \\
 & + \beta_7 \cdot \text{Production in Bangladesh Unacceptable}_7 \times \text{Strength of Relative Unacceptance} \\
 & + \beta_8 \cdot \text{Production in Turkey Unacceptable}_8 \times \text{Strength of Relative Unacceptance} \\
 & + \beta_9 \cdot \text{Production in Spain Unacceptable}_9 \times \text{Strength of Relative Unacceptance} \\
 & + \beta_{10} \cdot \text{Low Quality Unacceptable}_{10} \times \text{Strength of Relative Unacceptance} \\
 & + \beta_{11} \cdot \text{Price Utility}_{11} + \beta_{12} \cdot \text{Quality Utility}_{12} + \beta_{13} \cdot \text{Materials Utility}_{13} + \beta_{14} \cdot \text{Production Utility}_{14} \\
 & + \beta_{15} \cdot \text{COO Utility}_{15} + \beta_{16} \cdot \text{Gender}_{16} + \beta_{17} \cdot \text{Age}_{17} + \beta_{18} \cdot \text{Nationality}_{18} + \beta_{19} \cdot \text{Education}_{19} + \varepsilon
 \end{aligned}$$

Figure 7. Multivariate regression model formula

3.3 Questionnaire design

3.3.1 Experimental design

Following the attributes and levels described in the previous section, the conjoint model has six attributes, each with three or four levels. To make a full factorial design, assuming no prohibitions, a total of 1296 ($4 \times 3 \times 3 \times 4 \times 3 \times 3$) stimuli would be needed. In order to reduce the number of stimuli per respondent and thus reduce the risk of respondents' fatigue, we choose a fractional factorial design.

Optimality criteria ensure the model's validity while gathering the most information and minimising the eventuality of standard errors of part-worth estimates (Huber & Zwerina, 1996). The first one, level balance, assumes that all levels of an attribute should occur with equal frequency. In contrast, the orthogonality criteria state that levels of any two attributes should occur independently, in which no correlation would be present.

For every task, a participant sees four stimuli per task, including a *no-choice* option. The *no-choice* option allows us to measure whether the respondent valued the other options highly enough. In this study with unacceptable screening questions, these *no-choice* options also give us valuable insights into whether respondents stick to their previously indicated unacceptable levels. The *no-choice* option helps simulate a more realistic real-world scenario in which customers can refuse to pick an option if none are deemed desirable (Nederhof, 1985). Participants are tasked to make thirteen choices, with 56 incentives (14×4). With Sawtooth software, the randomised design will provide balanced overlaps, allowing for better single attribute level analysis and interactions analysis.

3.3.2 Structure of online questionnaire

The online survey consists of three parts. In the first part, respondents were asked four demographic questions such as "What is your gender?", "What is your age?" and "What is the highest level of education you have finished?". Afterwards, participants indicate which attribute levels they found unacceptable on a 5-point Likert scale.

In the third and final part, participants needed to imagine they wanted to buy a t-shirt and consider the environmental impact the t-shirt could have. Every choice set included four total options. Three options were t-shirt configurations based on the five attributes with three to four different levels (Tables 2 & 3). The fourth and final choice included in every task was always the *no-choice* option. Respondents spend most of their time completing the conjoint

tasks; on average, respondents spend about five minutes completing the 14 choice options. Appendix 1 contains a full survey.

The choice options included illustrations and verbal descriptions to increase the understandability of the survey. Four respondents experienced in academic research rated the clarity and length of the survey as a pretest. All four respondents deemed the survey to be clear and concise. The respondents found that the accompanying images summarised the attribute level and helped them quickly identify the choice options they valued. Furthermore, the remaining verbal descriptions of the remaining attributes and levels were brief but clear. The average time it took to complete the survey was slightly above 7 minutes which is sufficiently short to avoid survey fatigue bias (Swait & Adamowicz, 2001).

4. Data

This chapter showcases the final data set and how we established it. We also briefly describe the final data set and some preliminary results. Paragraph 1 goes over the specific methods used to collect survey data. Paragraph 2 showcases the demographic buildup of the final data set. Finally, paragraphs 3 and 4 summarise the screening questions results and some general statistics about the choice set answers.

4.1 Data collection

The unit of analysis in this research is young European adults aged 18 to 35. The online survey was conducted among tenants of a Berlin and Amsterdam apartment complex and extended through snowball sampling. To ensure a high response rate, respondents were offered a bar of chocolate and a chance to win a gift card for a completed survey. As of the closing of the survey deadline, a total of N=217 respondents have attempted the survey. Of these, N=95 have completed the survey resulting in a 49% response rate.

Furthermore, several tests for missing responses, duplicate cases, out-of-range responses, and straight-line cases resulted in the removal of one case. Of the 95 responses, one was a straight-line case. Therefore, the final sample size of this study was n=94. This sample size is sufficient for a study focused on one segment (Orme, 1998). Moreover, a meta-analysis by Cattin and Wittink (1982) shows that most conjoint studies have sample

sizes between 100 to 300 respondents. With its sample size, this study closely approaches the sample size seen in professional academic studies.

4.2 Demographics

Of the 94 respondents, a slightly higher percentage was female (65.96%, $n = 62$) than male (31.91%, $n = 30$). The third group identified as other (2.13%, $n = 2$); finally, no respondents preferred not to state their gender. The mean age of the sample was 27.02 (min = 17; max = 67; SD = 10.18). There was no significant correlation between gender and age ($t = -1.155$, $df = 64.896$, $p\text{-value} = 0.252$, average age female = 28.15, average male = 25.63). The nationality of the sample was quite different, but most participants were German (37.23%, $n = 35$), Dutch (15.96%, $n = 15$), Spanish (14.89%, $n = 14$), British (12.77%, $n = 12$), or Canadian (7.45%, $n = 7$). The remaining 11 participants were of various nationalities, as shown in Table 3. Most participants' highest attained degree is a bachelor's degree (42.55%, $n = 40$), followed by a high school diploma (29.79%, $n = 28$). Next, a college degree (14.89%, $n = 14$), then a master's degree (11.70%, $n = 11$), and finally, one participant had a doctorate (1.06%, $n = 1$).

Table 3

Descriptive statistics of sample (n=94)

Demographic Profile	Number	Percentage of sample
<i>Gender</i>		
Male	30	31.91%
Female	62	65.96%
Other	2	2.13%
<i>Age</i>		
<18	2	2.12%
18-21	31	32.98%
22-25	23	24.47%
26-29	12	12.77%
>29	26	27.66%

Nationality

German	35	37.23%
Dutch	15	15.96%
Spanish	14	14.89%
British	12	12.77%
Canadian	7	7.45%
Other*	11	11.70%

Education

Less than high school	0	0.00%
High school	28	29.79%
College degree	14	14.89%
Bachelor's degree	40	42.55%
Master's degree	11	11.70%
Doctorate	1	1.06%

4.3 General statistics

4.3.1 Unacceptable attributes

The survey included seven questions about unacceptable levels. We highlight some preliminary results here; the summary is in table 4.

In order of unacceptability of attribute levels, the question about *Durability* comes first. Nearly 90% of all respondents deemed non-durable t-shirts unacceptable ($M = 1.46$; $SD = 0.80$). Then, when asked about production methods, participants found production methods that do not guarantee workers' welfare most unacceptable ($M = 1.50$; $SD = 0.71$). Production methods that do not guarantee energy renewing methods were, on average, considered to be slightly unacceptable ($M = 2.79$; $SD = 0.80$). Non-recycled clothing was, on average, also considered to be slightly unacceptable ($M = 2.82$; $SD = 1.07$). T-shirts produced in Bangladesh are slightly unacceptable ($M = 2.86$; $SD = 1.15$). Finally, respondents find both t-shirts produced in Turkey and Spain acceptable ($M = 3.32$; $SD = 1.18$ and $M = 3.85$; $SD = 0.97$).

Table 4

Descriptive statistics of unacceptable attribute level questions

Level	Question ("How unacceptable do you find t-shirts...")	M	SD
<i>Production</i>			
Renewable energy	"...that are not manufactured in energy neutral factories?"	2.79	0.80
Worker welfare	"...manufacturers that cannot guarantee workers health and welfare?"	1.50	0.71
Recycling	"...that are not recycled?"	2.82	1.07
<i>Country of origin</i>			
Bangladesh	"...produced in Bangladesh?"	2.86	1.15
Turkey	"...produced in Turkey?"	3.32	1.18
Spain	"...produced in Spain?"	3.85	0.97
<i>Durability</i>	"...that don't last long (three or less months)?"	1.46	0.80

4.3.2 Preliminary choice set results

Count analysis is a suitable method to gain preliminary insights into the choice task data. Count analysis gives valuable insights into the main effects and interaction effects of the relevant attributes included in the conjoint model. These preliminary results are necessary to get some basic understanding of the value of each attribute and also for the model calculation in the next chapter. In this study, count analysis gives us valuable insights into which attributes of sustainable fashion the study's sample prefers in relation to all attributes. The five attributes of this study were *Price*, *Quality Guarantee*, *Material*, *Production*, and *Country of Origin*. All five attributes had a significant χ^2 ($p < .01$), meaning that all five attributes significantly influence choices in this sample.

To further descend the attributes, one can examine the choice percentages of the levels of each attribute. First of all, of the attribute *Price*, the highest Price is, in all cases, the least popular option. Only 17.9% of respondents chose the highest price point, 25.0% chose the second highest, 37.1% chose the second lowest, and most people, 42.1%, preferred the lowest price point. The second attribute, *Quality Guarantee*, has three attributes, low, medium, and

high quality. Only 16.5% of respondents chose the low-quality guarantee options, 29.8% chose the medium-quality guarantee, and 45.3% opted for the high-quality guarantee. *Material* is the third attribute, and the least favourite attribute was Polyester, with 22.4% of respondents choosing this option, 31.3% chose Jersey, and the most popular level was cotton, with 37.9%. The second to last attribute, *Production*, has four levels, and all but one level scored reasonably even. Normal Production was the least chosen attribute level, with only 9.7% of respondents. Followed by *Energy Neutral Factory Production*, with 32.4% of respondents choosing this option, the second most chosen option was Recycling with 35.5%, and the most chosen production level was *workers' health and welfare guarantee* with 44.7%. The last attribute was *the Country of Origin*. 25.1% of respondents chose Bangladesh as the country of origin, and nearly the same amount of respondents chose Turkey and Spain, with 33.0% and 33.6%, respectively. Surprisingly, there is only one interaction effect among all five attributes: *Material* with *Country of Origin* ($p < .05$). All other possible interaction effects of the five attributes had non-significant χ^2 values ($p > .05$).

In order to get an idea about which attributes are relative to other attributes, the most important thing is that we can measure the attribute part-worths. A logit regression gave us the utility scores per level. When we take the range of utilities per attribute and divide them by the total range of all attributes, we derive the attribute part-worths. Interestingly, the respondents in this study value Production, Country of Origin, and Price, very similarly. All three attributes score within one percent of each other (Production: 23.42%, Country of Origin: 22.68%, Price: 22.30%). Since most of the part-worth utility derives from these three attributes, they are essential for the respondents' decision-making. The two other attributes, Quality and Material, score lower at 18.39% and 13.22%, respectively.

5. Results

In this research, we are interested how consistent respondents are in avoiding options with unacceptable levels. In other words, do respondents stick to their values? We took inspiration from the study Green et al. (1988) conducted, which, in a different context, also measured unactable choice option adherence. Part of their findings was that there was no significant difference between weak and strong wording of unactable screening questions. Therefore, we have only one experiment group with one consistent wording used in the screening questions (see paragraph 3.2).

In the following paragraph, the results are broken down as follows. First, the extent to which respondents do not adhere to their unacceptable level will be showcased on a specific level basis. This paragraph includes the importance of the attribute and whether this influences results. Secondly, we distinguish between respondents who indicated having strong and weak unacceptable levels.

5.1 Unacceptable attribute level adherence

5.1.1 Total violations of Unacceptable attributes

The first measured attribute is *Production Methods*. In this attribute level, respondents indicated how unacceptable they found production processes that used factories which are not fully energy neutral, do not recycle, and do not guarantee workers' welfare. In total, 27 respondents deemed production methods that are not fully energy neutral, do not recycle, and do not guarantee workers' welfare, all at least a little unacceptable. However, despite their unacceptable levels, these respondents chose options which included unacceptable levels 6.17% of the time, which means that this particular group has an adherence rate of 93.83%.

The second attribute is *the Country of Origin*, which includes three production countries, Bangladesh, Turkey, and Spain. Forty-three respondents deemed t-shirts produced in Bangladesh at least slightly unacceptable. Respondents chose options featuring production in Bangladesh 14.81% of the time, meaning that this group's respondents adhered to their indicated unacceptable levels 85.19% of the time. Secondly, a minor group indicated production in Turkey to be unacceptable. Despite their unacceptable levels, 18 respondents picked choice options, including production in Turkey, 40.74% of the time. This group thus has an adherence rate of 59.26%. Finally, the smallest group, with only three respondents, indicated production in Spain to be unacceptable. Despite their unacceptable choice, respondents picked options that included production in Spain 33.3% of the time. This group thus has an adherence rate of 66.7%.

The last attribute is *Quality Guarantee*. This attribute features three levels, a 3-month guarantee, a 1-year guarantee, and a 3-year guarantee. Respondents had to indicate whether they deemed the lowest quality guarantee unacceptable. Eighty-four respondents indicated a quality guarantee of only three months to be unacceptable. Despite their indicated unacceptable level, respondents chose options with unacceptable levels 15.6% of the time.

This group adhered to their unacceptable level 84.4% of the time. Table 5 shows a summary of adherence per unacceptable attribute level.

Table 5

Total adherence to unacceptable levels

Attribute level	Number of respondents	Total stimuli	Unacceptable stimuli violated	Adherence percentage
<i>Sustainable production</i>	27	324	20	93.83%
<i>Country of origin</i>				
Bangladesh	36	432	64	85.19%
Turkey	18	216	88	59.26%
Spain	3	36	12	66.7%
<i>Quality Guarantee</i>	84	1008	157	84.4%

5.2 Individual level unacceptable level adherence

5.2.1 Individual unacceptable level violations

A critical distinction is between average violation data and individual violation data. In the previous chapter, we showed the average violations, but this does not explain if the total number of violations is because of potential outliers or if all violators violate the same amount. In other words, what is the variance in the frequency of violations?

Table 6 shows the average violations per attribute level and the variance and deviation. We see, for example, that people who found Production in Turkey unacceptable display a much higher variation in the number of violations. This indicates that fewer respondents are responsible for the lower rate of adherence.

Table 6

Mean and variance of violations

Attribute level	Number of respondents	M	V	SD
<i>Sustainable production</i>	27	0.74	1.28	1.13
<i>Country of origin</i>				
Bangladesh	36	2.44	2.14	1.46
Turkey	18	3.56	4.50	2.12
Spain	3	4.00	1.00	1.00
<i>Quality Guarantee</i>	84	1.87	2.40	1.55

5.2.2 Why individuals violate unacceptable levels

In this section, we further explain why people violate unacceptable levels by examining the data individually. Rather than pooling all the choice sets together and measuring the amount of those choice sets people violated as a percentage, this analysis uses the number of violations as the dependent variable. Table 7 shows a summary of all findings of the regression model.

In this study, there were five main effects. Three out of these five effects are significant. The first is the unacceptability of production in Turkey, which shows a significant positive correlation with the number of violations ($p < .05$). The following significant effect is that of the unacceptability of production in Bangladesh. Surprisingly, this positive effect is lower than its Turkish counterpart's ($p < .1$). An explanation for this disparity is that consumers who find production in Turkey unacceptable view unacceptably as a strong preference rather than an inviolable rule. Finally, the last main-effect variable that significantly affects the number of violations is the unacceptability of low quality. Low-quality unacceptability positively affects the number of violations ($p < .1$). The other two main effect variables, the unacceptability of unsustainable production and the unacceptability of production in Spain, are not significant ($p > .1$; $p > .1$).

Finally, of all covariates included in the model, five are significant. Namely, all five of the attribute importance variables have a significant effect on the number of violations (price importance: $p < .05$; quality importance: $p < .05$; materials importance: $p < .05$; production importance: $p < .05$; COO importance: $p < .05$). We conclude that the relative importance of specific attributes weighs very heavy on consumers' decisions. In many cases, they outweigh the indicated unacceptable levels. These findings further support Green's (1988) finding that consumers use unacceptable levels as a strong preference rather than an inviolable rule.

Table 7

Results summary of the regression model

Variable	Estimate	Std. Error	P-value
<i>Intercept</i>	-721.263	330.331	0.0324 *
<i>Main effects</i>			
ProductionUnacceptable	17.70462	10.89846	0.1088
BangladeshUnacceptable	6.95797	3.90651	0.0792 .
TurkeyUnacceptable	13.03415	5.83330	0.0286 *
SpainUnacceptable	7.65992	15.93019	0.6321
QualityUnacceptable	5.17355	3.00759	0.0898 .
<i>Moderation effects</i>			
Production Unacceptable × Strength of Relative Unacceptance	-3.64615	2.49148	0.1478
Production Unacceptable × Strength of Relative Unacceptance	-2.03819	1.35105	0.1359
Production Unacceptable × Strength of Relative Unacceptance	-1.25524	0.91521	0.1746
Production Unacceptable × Strength of Relative Unacceptance	-0.48189	3.66053	0.8956
Production Unacceptable × Strength of Relative Unacceptance	-0.75490	0.60224	0.2142
<i>Covariates</i>			
PriceImportance	725.05610	329.89961	0.0313 *
QualityImportance	716.26349	330.16306	0.0334 *
MaterialImportance	727.72873	330.12048	0.0308 *
ProductionImportance	721.54289	329.87822	0.0321 *
COOImportance	720.29131	330.31327	0.0326 *
<i>Demographic covariates</i>			
Gender	-0.24860	0.53305	0.6424
Age	0.03614	0.02859	0.2104
Education	-0.21025	0.23551	0.3750

“*”p < .05; “.”p < 0.1.

6. Conclusion

The goal of this study was to shed light on the decision-making processes consumers go through when evaluating environmentally conscious choice options. More specifically, when and why consumers adhere to or violate unacceptable attribute levels of products. As part of the conjoint study, this survey asked respondents to choose between t-shirts built up of varying attributes and levels from varying degrees of sustainability. Most of the 94, primarily European young adult respondents, indicated finding at least one attribute level slightly unacceptable. Moreover, some respondents in the choice task position of the survey violated these unacceptable levels by choosing options that did have them included. This study's respondents had an adherence rate of 59% to 94%. Previous literature has used various methods to investigate further when and why people do not always adhere to stated unacceptable questions. For example, Green et al. (1988) found similar adherence rates between 47% and 71% and explained that consumers interpret unacceptable levels as a strong preference rather than an absolute rule. The current study further elaborates on this theory by checking attributes and demographic variables together in one model. The results indicate that price plays a role in choice decisions, significantly so to the rate at which people adhere to unacceptable durability levels. Even though people indicate non-durable t-shirts as unacceptable, they might still choose non-durable t-shirts; hence the price is low enough, and the person derives much utility from price as an attribute. Similar effects were not found for other unacceptable levels, nor did demographic control variables have a significant effect in this study. One of the strengths of conjoint analysis is the mass of data it generates, even with a relatively limited sample size. In this study, for example, only 94 respondents have generated over 1000 choice set decisions. However, when analysing the data individually, the power is reduced again to the sample size. This means there is less statistical power to conclude other effects that require a higher sample size to conclude confidently. Potentially, with more respondents' choice sets, data groups of people with various preferences may be more clearly defined, and other effects will be more evident. Other potential avenues for future research are in the discussion chapter. In section 7.1, we offer managerial insights. Finally, in section 7.2, biases are discussed.

7. Discussion

7.1 Managerial implications

Although the adverse effects of unsustainable consumption are pretty straightforward for many consumers, it remains difficult to "vote with one's wallet". However, it is essential to realise that it is not productive to blame consumers. Improving on the right product attributes and highlighting them may be a way in which clothing producers can make it clear to consumers how to make more sustainable purchasing decisions. Literature has shown that one of the most significant issues with clothing consumption is overconsumption and unnecessary waste creation. Because consumers want to maintain quality to be more sustainable, a good angle would be to promote the longevity of clothing items and encourage consumers to use products for longer.

Furthermore, people are compassionate and find products that cannot guarantee the welfare of the people, which makes these products unacceptable. It is difficult for consumers to know which manufacturers and brands can guarantee workers' welfare in a big open market. A potential solution would be to create a third-party workers' welfare bureau that can objectively assess the ethical nature of the labour used in producing products. Furthermore, to help people achieve a higher adherence to their ideals, large online stores could put unacceptable attribute levels into practice. For example, when consumers visit an e-commerce platform, the platform could first ask the visitors which levels of sustainability the consumer finds unacceptable. Some platforms, such as Zalando, have already implemented such practices by having major product categories based on sustainable attributes.

Taken together, managers have to find a balanced approach to improve consumers' sustainable purchasing decisions. For example, highlighting the quality and the overall longevity of the material and the style might convince non-green consumers to make their purchasing more sustainable. For the other aspects of sustainability, which might be more confusing, clear labelling can help people easily identify the items that align with their beliefs. Managers who can balance these sustainability aspects with minimal compromise to the product's desirability will likely gain a significant competitive advantage soon.

7.2 Limitations

Finally, in this section, we raise some potential limitations of this study while offering the potential for improvements in future research. First of all, similarly to other methods of analysis, conjoint analysis has solid and weaker qualities. Therefore, it is the researchers' task to use conjoint analysis when it best fits the situation and avoid overestimating the predictive power of an experiment outside the real-world economic workings. In this study, for example, the focus is heavily on sustainable consumption. However, sustainable consumption cannot be summarised within only a few attributes and levels. Including more attributes and levels would introduce respondent fatigue, or an extensive sample would be needed. Another solution would be to reduce the number of attributes specific to sustainability, decreasing the number of insights one could derive on sustainability. Respondents might also value the rare sustainable attribute disproportionately high.

Balancing all attributes and levels is a second important factor in the conjoint analysis. No attribute should disproportionately influence respondents merely based on the design. Meaning that represents might be influenced by noticing some attributes have more levels and occur more often in choice sets. Related to this issue is socially desirable responding (Paulhus, 1984). In this study, the effects of this bias are minimal since no examiner was present when respondents filled out the survey. However, the apparent interest of the study can still influence consumers to unconsciously choose options that are more socially desirable than how they might act in real-life scenarios.

Other aspects of a conjoint study that influence the results, beyond the choice tasks and attributes, are all the preliminary questions. For example, Chakravarti et al. (2013) show that even innocuous questions, such as demographic and screening questions, can heavily influence the price sensitivity of respondents. A potential solution could be to reorder all question sections, forcing respondents to answer choice tasks first. However, this is not possible with screening questions since they go before the choice tasks.

The method used in this study to derive the sample was based primarily on snowball sampling techniques. Moreover, mostly highly educated young adults living in Amsterdam and Berlin comprise the most significant sample. Although this sample is beneficial to derive conclusions about potentially a group among the front runners for caring about sustainability, this sample does not accurately reflect the entire population of European consumers who form the most significant share of the market. It would be helpful for future research to investigate more different populations of people with varying degrees of primary

interest in sustainable consumption. This will gain even more valuable insights into how people make purchasing decisions and give managers valuable insights into how they can help people make sustainable decisions when they might have low internal motivation.

Finally, this study shows a high adherence to sustainable attribute levels compared to previous research. A potential reason for the difference is the previously mentioned sample population, which includes many individuals who value sustainability. Another reason is the decision to pool some sustainable levels together into one attribute. This means that consumers who have indicated find all levels of lack of sustainability to be unacceptable show a very high adherence. This is to be expected since these respondents find all indicated levels acceptable rather than a more common consumer who might find just one or a few levels unacceptable. Further research could benefit from specifying a more limited sustainable attribute. In this way, researchers could study the effect of unacceptable levels within one sustainability category more deeply.

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Appendix

Appendix 1: Sample of survey

Gender

My gender is:

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

Age

How old are you?

Country

Which country do you live in?

Education Level

What is the highest degree you have completed?

- ☐ Less than high school diploma
- ☐ High school diploma
- ☐ College degree
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctorate

Back

Next

Screening Questions

I would like to ask you to indicate which levels are unacceptable to you.

Please choose below which options best match your opinion.

How unacceptable do you find t-shirts that are not manufactured in energy neutral factories:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts manufacturers that cannot guarantee workers health and welfare:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts that are not recycled:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts produced in Turkey:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☒ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts produced in Bangladesh:

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts produced in Spain:




- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable
- ☐ Perfectly acceptable

How unacceptable do you find t-shirts that don't last long (three or less months):

- ☐ Totally unacceptable
- ☐ Slightly unacceptable
- ☐ Neutral
- ☐ Slightly acceptable

If these were your only options, which would you choose?

(1 of 14)

Price	€10	€20	€30
Quality Guarantee	Excellent Quality (guaranteed to last more than three years)	Normal Quality (guaranteed to last 3 months)	Good Quality (guaranteed to last over a year)
Fabric	100% Cotton	Polyester	Polyester
Production	Made in energy neutral factory	Workers health and welfare guaranteed	100% Recycled materials
			
Country of Origin	Turkey	Spain	Turkey
	<input type="button" value="Select"/>	<input type="button" value="Select"/>	<input type="button" value="Select"/>

NONE: I wouldn't choose any of these.

Appendix 2: Partworth Utilities calculation

$$P(U_i) = \frac{e^{U_i}}{e^{U_i} + n - 1}$$

U_i = the zero-centred utility score for item i

$P(U_i)$ = the probability of item i being selected

N = Number of items in choice task

Appendix 3: Results summary

Results summary of the regression model

Variable	Estimate	Std. Error	P-value
<i>Intercept</i>	-721.263	330.331	0.0324 *
<i>Main effects</i>			
ProductionUnacceptable	17.70462	10.89846	0.1088
BangladeshUnacceptable	6.95797	3.90651	0.0792 .
TurkeyUnacceptable	13.03415	5.83330	0.0286 *
SpainUnacceptable	7.65992	15.93019	0.6321
QualityUnacceptable	5.17355	3.00759	0.0898 .
<i>Moderation effects</i>			
Production Unacceptable × Strength of Relative Unacceptance	-3.64615	2.49148	0.1478
Production Unacceptable × Strength of Relative Unacceptance	-2.03819	1.35105	0.1359
Production Unacceptable × Strength of Relative Unacceptance	-1.25524	0.91521	0.1746
Production Unacceptable × Strength of Relative Unacceptance	-0.48189	3.66053	0.8956
Production Unacceptable × Strength of Relative Unacceptance	-0.75490	0.60224	0.2142
<i>Covariates</i>			
PriceImportance	725.05610	329.89961	0.0313 *
QualityImportance	716.26349	330.16306	0.0334 *
MaterialImportance	727.72873	330.12048	0.0308 *
ProductionImportance	721.54289	329.87822	0.0321 *
COOImportance	720.29131	330.31327	0.0326 *
<i>Demographic covariates</i>			
Gender	-0.24860	0.53305	0.6424
Age	0.03614	0.02859	0.2104
Education	-0.21025	0.23551	0.3750

“*”p < .05; “.”p < 0.1.