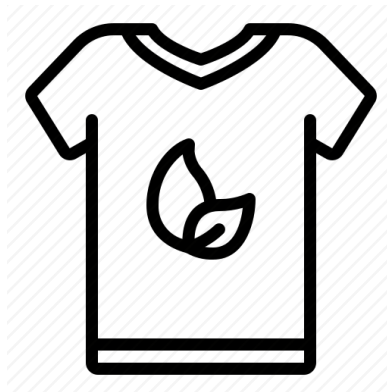

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MSc. Economics and Business - Marketing

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“How can choice architecture tools nudge consumers’ into choosing organic cotton clothes?”



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Abstract

Choice architecture is a way to nudge consumers to make certain choices. The whole concept of choice architecture was coined by Richard Thaler and Cass Sustein (2008). Nudging is the idea of alterations in the choice architecture of the choice environment which eases the welfare and the better decision process without reducing the freedom of the consumer to choose what they want. Choice architecture is closely related to the idea of libertarian paternalism that is a mix of respecting the liberty of the decision-maker, but also encouraging specific choices at the same time.

As individuals tend to be more and more concerned about the environment and how their choices affect it, choice architecture has grown and options can be presented in a way to support sustainable consumption and influence the decision-makers. What is investigated in this paper is how the choice architecture tools that will be used can affect sustainable purchases in the fashion industry. More specifically, this paper investigates the choice architecture influence on organic cotton clothes. Organic cotton is a textile manufactured in environmentally friendly ways, taking care of the toxic chemicals and/or artificial colors or fertilizers that have a negative impact on the environment. In contrast, polyester is one of the least sustainable textiles in the fashion industry and this is why I chose to investigate how can consumers be nudged into choosing the former textile from the latter. The choice architecture tools used in this thesis research are the labels of sustainability, which can give the information to the consumer and push them in the direction to choose the organic cotton clothes without leaving any of the options out of the picture. Additionally, I investigate whether the number of choices available will have an influence on the choice of organic cotton textile since previous research has shown that when the choices are

many, the consumers tend to not pay full attention to the details of the choices. This paper also analyzes how gender, age, and the degree of environmental consciousness of an individual moderate the relationship between the labels of sustainability and the purchase intention for organic cotton clothing.

To answer my research question, I performed an online experimental survey where 277 people took part. Participants were randomly assigned to one of the four different treatments (large choice set without labels, large choice set with labels, small choice set without labels, and small choice set with labels). The results showed that there is no main effect between the labels and the purchase intention for organic cotton, no main effect between the number of choices and the purchase intention for organic cotton, and that interaction effects of gender and age do not play an important role in the relationship between labels and purchase intention for organic cotton clothes. Additionally, the results showed that there is no interaction effect between environmentally conscious individuals and labels of sustainability on the purchase intentions for organic cotton clothing.

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Chapter 1: Introduction

1.1 Background

Nudging consumers to get involved in environmentally friendly behaviors is becoming a challenge of crucial importance in our days (Organisation for Economic Cooperation and Development [OECD], 2008). A garbage truck filled with clothing goods is burned or tossed away in a landfill each second and consumers continue to endlessly purchase disposable clothing options neglecting the environmental costs. Consumers' and businesses' behaviors must shift to be more sustainable (Katherine White et al., 2019). This change will provide important benefits for both parties as previous research supports that companies with a sustainable orientation that engage sustainable consumption are more likely to succeed in the long-term and cherish strategic advantages (Subhabrata Bobby Banerjee et al., 2003).

The overconsumption model, that has been created with the rise of fast fashion clothing retailers, comes at a high environmental cost as 10% of the carbon emission comes only from the fashion industry. This is the reason why consumers must switch their interest to slow fashion goods. Slow fashion not only is the reaction to fast fashion but also the holistic argument for hitting the unconscious and excessive consumption in this industry (Pookulangara & Shephard, 2013). Ethical working conditions and reduction of environmental demolitions are two examples of key values that sustainable fashion supports. It promotes ethical behavior, cheap fashion production, and acquiring quality over quantity in clothing goods (Ertekin & Atik 2015). Joergens (2006) defined ethical consumerism as “fashionable clothes that integrate Fair Trade principles with

sweatshop-free labour conditions while not damaging the environment or workers, by using biodegradable and organic cotton”.

The continuous expansion of waste in the industrialized society we live in can also be explained by the overconsumption of fast fashion clothing goods. The current industrial system promotes product disposability since there is a vast availability of inexpensive and poor-quality clothing options that follow the supposed trends of fashion (Armstrong et al., 2016). Plenty of research has shown that those fashion consumers who acknowledge holding ethical visions most of the time do not transfer their intentions into a purchase behaviour that would support sustainability. This has been explained as a “values-action gap” in several studies (Moisander & Markkula, 2012); (Michal J. Carrington et al., 2010); (Giana M. Eckhardt et al., 2010). On the bright side, the clothing business appears to have a great potential to be improved in several aspects of sustainability. Although fashion consumer attitudes to products and specifically clothing made in socially responsible ways have grown, the market share of clothing, produced in environmentally friendly ways, is still left behind (Jacobs et al., 2018). Sustainable fashion is a responsibility of individuals, the public and private sector and one great example of helping the environment is by using textiles that cause less or no harmful effects on it such as the organic cotton which will be used in this research.

My research will combine choice architecture and sustainable fashion in a way that fashion consumers will be nudged to choose sustainable options in an online shopping setting. The sustainable option will be marked by a sustainability label that will refer to the fabric of the clothing piece. I want to test whether consumers can be nudged into choosing environmentally friendly clothing options and serve the greater good. With my research, I want to contribute to

the studies regarding sustainable fashion nudges. I aim to prove that choice architecture in an online shop environment can aid consumers to be nudged into choosing clothes made from organic cotton. I would like to test whether the use of labels of sustainability on the clothes on the website affects the purchase decisions of fashion consumers. Moreover, I am interested in exploring whether the number of choices available affects the purchases of organic cotton clothes. Finally, I intend to contribute by testing whether the gender, the age and the environmental consciousness of the consumer moderate the effect of labels on sustainable clothing purchases (Giammarco, 2016). Therefore, my research question is: **“How can choice architecture tools nudge consumers’ into choosing organic cotton clothes?”**

1.2 Academic and managerial relevance

The thesis research question has a significant academic contribution, as it will elucidate an issue that has previously focused on other industries such as healthcare. To the best of my knowledge little research has been made on this specific topic in the fashion industry, about the impact of choice architecture on choosing sustainable clothing options. Therefore, to contribute to the studies that indicate a coherent set of conditions that nudge consumers to choose sustainable fashion, I am interested in researching and analyzing the previously mentioned research question. The purpose of this thesis is to examine the influence of choice architecture in the context of organic cotton clothing purchase behavior. Moreover, it is interesting to test how gender, age and environmental consciousness affect consumers’ intention to purchase organic clothes when they experience labels in an online shop. This research will offer insights to marketers to realize how consumers’ can be influenced on consuming responsibly as well as how this can happen effectively in an online setting. If this research confirms that there is a

difference among men and women, young and older, in purchase intention under nudging, marketing practitioners will be able to create a purchase environment that will engage both genders and all the ages in a better way of purchasing organic clothing goods. The same applies to whether the environmentally-conscious individuals are affected by the labeling on their purchases which means that the companies can target better their audiences based on the results of this research.

Chapter 2: Literature Review

In this chapter, I will present previous literature about this paper. This thesis aims to contribute to the following academic literature. At first, the nudging theory will be explained and, I will introduce the choice architecture tools, labels and choice overload/simplicity, and the way they will be used in my research. Then, I will introduce the sustainability issues that fast fashion enables society with and analyze the principles of fast, slow fashion, and organic cotton clothing. Furthermore, I will present the reasoning behind the hypothesis I will create later on. The studies regarding how gender, age, and environmental consciousness affect purchase intentions will be presented as well. The previous studies that will be discussed will assist in discovering the existing gaps that this thesis will fill in.

2.1 Libertarian Paternalism and Nudging

Combining the words 'libertarian' and 'paternalism' in one phrase can be considered as an oxymoron for most economists (Thaler & Sustein, 2003). The main idea of libertarian paternalism is that policies can be designed in a way to push consumers into choosing better choices without having to limit their liberty (Hausman & Welch, 2010). As Richard Thaler and Cass Sunstein

claimed in their book, *Nudge* (Thaler & Sustein, 2009), there are several ways to influence individuals towards actions that will be optimal for them. The word 'paternalism' has been linked with negative connotations and this is why economists, argue that their paternalistic idea is compatible with libertarian approaches since their aim is not to limit the freedom of choice but increase the individuals' welfare (Vallgård, 2012).

A nudge can be any attempt at altering people's judgment in a predictable way that is made because of cognitive biases, routines, or habits in decision-making, blocking people from performing rationally in their self-interests and which works by using these boundaries as integral parts of such efforts (Hansen, 2016). A nudge is a specific type of strategy that tries to generate beneficial results for the decision-makers by either exploiting or preventing these biases. There are paternalistic nudges that are intended to promote the well-being of the consumer that seems to be unable of doing so on their own (Mills, 2015). These nudges are born under the term libertarian paternalism and are an important subgroup of choice architecture. In the debate of whether nudges are ethical or not paternalists assume that choice architects know better than individuals what is good for them. Since they own this kind of knowledge, they are entitled to help them (Sunstein, 2015). Nudging is not supposed to be exercised against the will of those targeted, thus it could be labeled as soft paternalism, hence, an acceptable marketing tool. Individuals can make any of the available choices neglecting those induced by the choice architects, therefore it is on the grounds of libertarian ideas (Thaler & Sustein, 2009).

Libertarians would object to the fact that people do not know what is best for them. They may understand the possibilities of people making the wrong choices, but they should not be manipulated in making the right choice since freedom is more important (Iyer et al., 2012). Also,

they would object to the fact that choice architects are aware of what is good for all the people (Vallgård, 2012). Consequently, there is skepticism around these nudges but not all of them are paternalistic; there are examples of nudges designed to increase organ-donation (Johnson & Goldstein, 2003), provoke healthier eating habits (Guthrie et al., 2015) or in this case promoting sustainable options in clothing. Since these nudges are made to aid third parties, they can be considered non-paternalistic (Barton & Grüne-Yanoff, 2015).

Many pieces of research have been made to figure out how consumers can be nudged into choosing healthier eating habits, avoiding meat consumption, and reduce obesity rates (Kraak et al., 2017); (Loschelder et al., 2019); (Marcano-Olivier M et al., 2019); (Smith & Toprakkiran, 2019). Another literature researches the effect of mandatory labeling of genetically modified food nudge consumers' decision-making (McFadden & Malone, 2018). Other research has examined the relationship between purchasing high-end fashion goods and sustainable consumption. Luxurious products have a longer life cycle than mass products. Having said that, it seems that consumers should be nudged into purchasing less but high-end products that last more than making thoughtless mass purchases (Jennifer J. Sun et al., 2021). Little do we know about how fashion consumers can be nudged into organic cotton clothing options consumption, and this is where this thesis will fill the relevant gaps

2.2 Tools of choice Architecture

Choice architecture explains how the structure of a set of choices influences behavior without changing economic inducements or what consumers know about the options (Johnson et al. 2012; Thaler & Sunstein 2009). Choice architects can manipulate the decisions of an individual and can nudge the consumer into choosing an optimal choice. These manipulations are the

aforementioned nudges (Thaler & Sunstein 2009). Choice architecture is strongly associated with the idea of libertarian paternalism since there is no restriction of any choice but only encouragement of choosing a specific one. There are ample ways to present a choice to consumers, and the way that the decision-making occurs depends strongly on how the choice is offered. Choice architecture is a term invented by Thaler and Sunstein; they insisted on the unavoidability of choice architecture and proposed using it to provoke well-being (Thaler & Sunstein 2008).

2.2.1 Labels of sustainability

A well-known approach to communicate with consumers is through product labels. More and more companies in the fashion industry have started communicating with their customers about sustainability concerns and educate them on the environmentally-friendly performance of their products by presenting relevant information. Research has shown that young women neglect to purchase sustainable options due to ignorance of how fast fashion affects the environment (Birtwistle & Morgan, 2009). This can be partially tackled by using informative labels on the clothing options that will softly nudge the consumers to purchase them. This way, the consumers will be nudged to do so through the labelling if the ignorance was driving their unsustainable purchase behaviours. However, since consumers use fashion as a way of expressing their unique identity (Birtwistle & Moore, 2007) the products they purchase should of course be sustainable, but also meet their needs of identity creation (GunillaClancy et al., 2015).

Research supports the idea that fashion companies make efforts to decrease the negative effects on society and the environment through marketing activities (Bin Shen et al., 2014). One powerful marketing tool to do so is the use of labels. Many retail businesses show strong

intentions to support the demands of consumers to purchase sustainable products and they do so with the usage of sustainable labeling techniques (Testa & Iraldo, 2015). Studies indicate that a strategic initiative for green marketing efforts is effective communication through eco-labeling (D'Souza et al., 2006). Heinzle and Wüstenhagen (2012), argue that eco-labels can be a very powerful tool to enhance a sustainable purchase behaviour let alone the vital information that they communicate to the customers (Hille & Wüstenhagen, 2012). A recent study on sustainability labels in the fashion industry, showed that the labels are effective to determine purchase intentions. In this study 903 shoppers in the U.S undertook the survey and the results showed that the perceived ease of use, attitudes, and intention to purchase was related to the consumers' use of labels of sustainability. In this research, the sustainability label users scored higher than the non-label users (Yoon Jin Ma et al., 2017).

To the best of my knowledge, little research has been done on the labelling in the fashion industry and how it affects sustainable purchase intentions, and this is why I aim to prove that labels can nudge consumers into purchasing these options. This thesis aims to explore how labels that indicate the sustainable texture of the clothes can affect the decision-making journey of consumers in an online setting. Therefore, based on the research presented above, the first hypothesis is, H1: "Labels of sustainability influence positively the purchase intentions of organic cotton clothing goods."

2.2.2 Number of choices

The number of options and more specifically the abundance of choices affect the final alternative selected by the consumer. It has been argued that a larger choice set repels the consumer, and it is preferred a simpler choice set with easier to comprehend options. When a choice set is larger,

the person becomes demotivated. The contextual inference theory coined by Kamenica (2006) advocates that the individual is more willing to choose the simpler alternative, thus clearer to them, and neglect the choices that they do not understand fully. The theory was proven with a gambling experiment where the participants given a larger choice set tend to choose the simpler and less risky choice (Iyengar & Kamenica, 2007). Consumers sometimes prefer strictly smaller choice sets (Iyengar & Lepper, 2000). Studies indicate that when the alternatives rise, people face conflict, so they tend to search for new options, take the default choice or decide to not choose at all (Dhar, 1997). This idea is contrary to the value maximation theory that wants the consumer to seek the highest number of available options to choose from (Tversky & Shafir, 1992); (Shafir et al., 1993). Research showed that consumers' struggle to select one alternative was the most crucial reason for postponing several purchase decisions (Nagpal et al., 2011). In their study, Tversky and Shafir (1992) examined the idea that decision conflicts happen when choices involve trade-offs between different qualities.

With my research, I want to contribute to these topics by testing whether the simplicity of a choice set leads the decision-maker to choose the sustainable option. Thus, based on the above researches, the second hypothesis is, H2: "A smaller choice set influences positively the purchase intentions of organic cotton clothing goods."

2.3 Sustainability in fashion and organic cotton

The clothing options one makes reflect their aspiration to create a unique identity through fashion that follows the social customs (Murray, 2002). Consequently, this desire for identity creation overshadows the drivers to sustainable consumption due to ignorance of the detrimental effects this attitude causes to the environment (G. Birtwistle & Moore, 2007).

“Fast fashion” is quite a recent trend in apparel that provides low-cost clothing goods inspired from the catwalk just a few weeks after they are first introduced. This revolutionary phenomenon has changed the way the fashion industry works and has become quite famous among retailers that seek Quick Response strategies (Birtwistle et al., 2003). Fashion collections and trends have become gradually fast-paced, and some parts of the fashion industry, in a desperate need to keep up with these trends neglect the sustainable ways to produce. The fast fashion trend has led to vast quantities of disposable pieces of clothing; only in the UK 1,000,000,000 kg of textiles is thrown away to landfills annually (Dissanayake et al., 2012). Moreover, the nature of fast-fashion clothing consists mostly of synthetic polyester textiles that are hard to be recycled thus contribute highly to textile waste (Birtwistle et al., 2009). Therefore, this kind of fashion is highly unsustainable.

On the other hand, organic cotton is cotton that has been grown and produced free from synthetic chemical inputs without the use of pesticides and herbicides (Ingram, 2002). This type of organic practice of farming cotton aims for environmental sustainability and the usage of fewer resources. Even though conventional cotton is being massively used by many countries and is grown in the whole world, organic cotton still occupies a small piece of the pie of total production. The approach of using sustainably grown cotton will be researched in this thesis and how can consumers be nudged into choosing it (Nassivera et al., 2017). The more the purchase intentions will grow for organic cotton clothing the faster the sustainability in the fashion industry will be raised.

Research showed that fashion customers who thought that using organic cotton is salient expressed positive attitudes towards sustainable agriculture and had a highly environmentally

conscious and organic oriented self-identity (Hustvedt & Dickson, 2009). Another study explored whether the knowledge of the consumer of what organic cotton is had any impact on their price sensitivity of organic cotton apparel and found that the more knowledgeable about this issue the consumer is the more willing they are to purchase organic cotton clothing options at higher prices (Oh K, 2016). In 2012, Gupta and Hodges interviewed Indian fashion consumers about corporate social responsibility issues in the decision making of purchasing clothing goods. Results showed that CSR is very important in their decision process, but they are not willing to pay much for this element (Gupta & Hodges, 2012).

However, sustainable clothing goes further than textiles, it also addresses the producing system which means who produced the product, how and what is the life span before it goes to the landfills (Fletcher, 2014). More specifically, the post-purchase behaviors reflect the question of whether the clothing goods are being reused or recycled, or just thrown away. Research on this topic has proved that young consumers are more likely to proceed in irresponsible actions such as discarding clothes neglecting their future potential use or the environmental costs of their decisions. Additionally, young women are more likely to neglect the fact that recycling clothing is of vital importance due to a lack of knowledge on how textiles affect the environment (Birtwistle & Morgan, 2009). A study conducted in consumers by Burke et al (1978) found that the ones who disposed of products without considering extra use, or the environmental costs of disposition were younger audiences (Sanders & Malkis, 1982). To the best of my knowledge, there is little evidence regarding the way that nudging for sustainable fashion purchases affects different genders. I aim to explore whether women are more likely to choose the organic cotton option under nudging techniques such as labels of sustainability. Therefore, the third hypothesis

of my thesis will be, H3: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for women than men.” Moreover, I will use age as a moderator variable to explore the relationship between the usage of labels in the purchase intentions of sustainable products. Thus, the fourth hypothesis will be the following, H4: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for younger consumers than older”.

In this thesis, I will focus on the fabric of the clothing that makes the piece of clothing sustainable and more specifically how the usage of labels that indicate the sustainable nature of organic cotton as a textile will affect the purchase intentions of fashion consumers. Pre-purchase, actual purchase, and post-purchase consumer attitudes are involved in the aspect of sustainable consumption. Research explores the developmental theory model in the fashion industry and divides fashion consumers into three categories: pleasure-seeking consumers called “self” consumers, social image-oriented consumers called “social” consumers, and “sacrifice” consumers that are concerned about their impact on the environment. The aforementioned groups are importantly different in their considerations of fast fashion and the implications for sustainably made fashion goods (McNeill & Moore, 2015). Studies on consumption emphasize the fact that reasons to consume are broader than functionality as individuals add other meanings to their purchases such as social and personal. This idea is confirmed to be highly relevant to fashion goods consumption (Bastos & Levi, 2012). Disposable fashion owes much to the rise of purchase frequency as well as the significant drop in prices. The fast-fashion market leaders offer products that are projected to be used ten times on average at a very low price

(Andrew McAfee et al., 2004). This growth of fashion purchasing has caused the trending phenomenon of disposable textiles that have been used few times (G. Birtwistle & Moore, 2007). However, at the same time, other sectors seem to adopt ethical ways and make efforts to change their attitudes sustainably. This is where the consumers need to make the call and support these efforts by becoming socially conscious (Anderson & Cunningham, 1972). Even though there is an increased interest in sustainable behaviors, the intentions of the consumers do not necessarily lead to ethical purchases (Jeffery Bray et al., 2010) mostly in the fashion industry (Joergens, 2006). Therefore in this research, I aim to explore the purchase intentions of fashion consumers on buying clothing options that are made from sustainable fabric like organic cotton.

Taking all the above into consideration, there have been several research studies concerning nudging for sustainability behaviors. However, little is known on whether nudging with choice architecture tools such as labels can alter the choices of environmentally conscious or not consumers into choosing organic clothing options. My thesis will explore these topics, to examine whether individuals that have intentions to purchase sustainably will do so when nudged through labels. Also, whether non-environmental-conscious consumers are affected by a choice architecture tool while shopping. Thus, using the moderator “Environmental consciousness” the last hypothesis is the following, H5: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for environmentally conscious consumers”

2.4 Conceptual Framework

The below conceptual framework depicts the relationship between the relevant independent and dependent variables and suggests potential moderating effects. Moreover, it shows the

connection between the variables, and it explains how each variable relates to the other. More specifically, illustrates the relationship between the choice architecture tools such as labels and choice number (independent variables) and the sustainable purchase intentions (dependent variable) and the moderating effects of gender, age, environmental consciousness on the relationship between labels and purchase intentions. Below, the conceptual framework is depicted through a diagram:

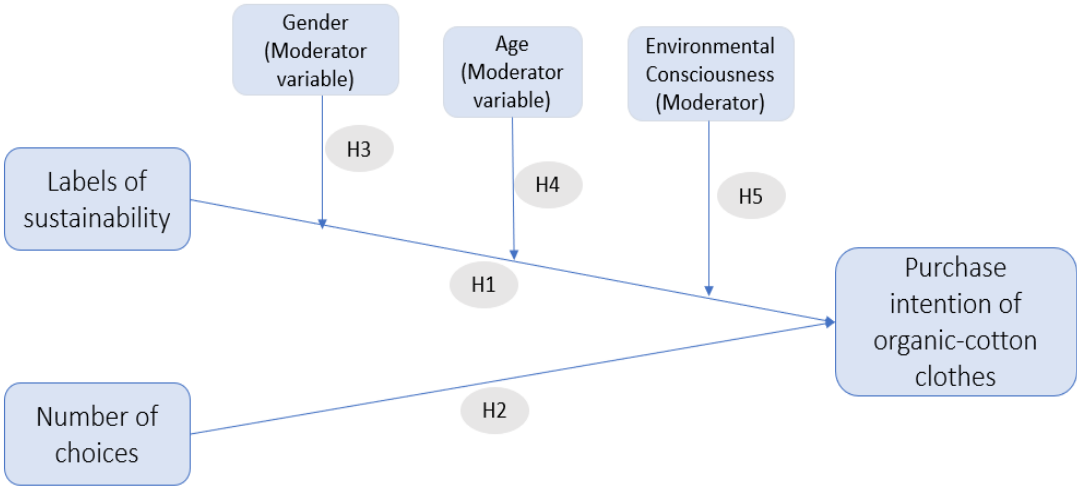


Figure 1: A hypothesized conceptual framework on the effects of choice architecture tools on purchase intentions for sustainable clothing goods.

2.5 Hypotheses

Heinzle and Wüstenhagen (2012) state that sustainability labels reinforce sustainable purchase behaviours and communicate important information about eco-friendly energies to the customers. Retail companies try to support the growing demand of consumers in purchasing

sustainable options via labeling their products (Testa & Iraldo, 2015). These studies helped me state the first hypothesis that will explore the relationship between labels of sustainability and the intentions of the fashion consumers to purchase organic cotton products. (H1: "Labels of sustainability influence positively the purchase intentions of organic-cotton clothing goods.")

Additionally, several studies have shown the way that choice overload affects purchase decisions.

The study that motivated me to explore this topic is the one of Sheena S. Iyengar (2007) where on a gambling experiment participants had to choose an option. The results showed that the ones that experienced a larger choice set preferred the simpler and less risky choice when there were choices that made more sense in the choice set. Whereas, the participants that experienced a smaller choice set had the ability to review the alternatives better and understand which one would be more profitable for them. In another study by Sheena S, Iyengar on 2007 we can clearly see that individuals tend to prefer strictly narrower alternative sets. This is the reason why I want to test whether similar behaviors will appear in the fashion industry. More specifically, whether fashion consumers that will encounter larger choice sets will get demotivated and abandon their sustainable purchase intentions. Thus, I suggest that a smaller choice set is more likely to help the consumers understand the different choices and choose the ones that are labeled with the indication that the piece of clothing is made of organic cotton. (H2: "A smaller choice set influences positively the purchase intentions of organic-cotton clothing goods.")

Research conducted by Birtwistle & Morgan (2009) showed that young females tend to neglect the environmental costs of their purchases due to ignorance. They were not educated that the recycling of clothing is important due to a lack of knowledge about the textiles that are thrown away in landfills every year in large numbers. Little research has been done on how the choice

architecture tools are affecting different genders and ages in different ways. Therefore, I aim to fill this gap by testing how these variables – gender and age – affect the relationship of labels on the purchase intentions for organic cotton textiles. The following hypotheses will be used to analyze this relationship, H3: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for women than men.”

H4: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for younger consumers than older”.

Research has explored the fact that consumers’ environmental consciousness is one of the most important determinants of sustainable purchase behavior (Joshi & Rahman, 2015). Previous literature shows that consumers have a positive attitude towards the prevention of the environment (Verbeke, 2006); (Sergio Silva Braga Junior et al., 2015). I would like to explore the idea of how labels affect the purchase intentions of environmentally conscious fashion consumers. I aim to explore how sustainable conscious consumers react to this choice architecture tool and whether they are nudged to purchase organic cotton clothes. Moreover, I want to explore whether consumers that do not relate to eco-friendly beliefs will be influenced by the labels. Hence, I suggest that consumers under the influence of labeling will choose the sustainable options offered easier when they are already environmentally conscious. (H5: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for environmentally conscious consumers”)

Chapter 3: Research Methodology

3.1 Participants and Experimental Design

To answer the research question of this thesis, a deductive quantitative research was conducted, and the required data was gathered through primary data. To test my hypotheses, I adopted an experimental design where I manipulate the variables between subjects. The participants of my experiment are assigned to different conditions, with each participant experiencing only one of the conditions. To do so, I created an online experimental survey where I randomly assigned each participant to one condition. The survey includes demographic variables such as gender, age, nationality, and educational background and the experiment where I manipulate the purchase intention towards organic cotton clothing between subjects as well as measures of sustainability consciousness.

I chose to do a between-groups design in the experiment to avoid the risk of having a Hawthorne effect. The Hawthorne effect indicates that participants would modify an aspect of their answers when they understand that they are being observed (Adair, 1984). More specifically, if the participants would experience all the situations, they would have understood what part of the experiment is being manipulated. The differences between the groups would be clear to the participants and this could lead to biased answers. To test if the desired behavior will be attained in an online environment, the subjects experience different digital nudge scenarios which can be seen as independent variables in this research. The independent variables are the labels of sustainability and the number of choices. The between-groups design of my experiment led to four conditions. The first condition is a large group of choices - six choices - without any labels on

the products. This is the control group of the experiment as no nudging tool is used to alter the intentions of the subjects. The second scenario is a six choices set with labels, next scenario is a small choice set – three choices - without labels and the last scenario, three choices set with labels. These three groups are the treatment conditions.

In the conditions that include labels, the product had a label of sustainability on top with a message to indicate that the product is sustainable compared to the rest of the choices available.

In the conditions where no labels were shown, the type of fabric is shown under the picture of the product, but it is shown among other information, so it is not obvious for the customer that the specific product is sustainable as when there is a label indicating that, unless the participant is aware that organic cotton is a sustainable fabric. This way, I aim to test whether the label will trigger the customer to purchase a sustainable piece of clothing. The participants in all the scenarios will have the chance to see that the product is made of organic cotton, but in the condition where labels are included, it will be highlighted that the product is sustainable. I expect that the ones that will experience this nudging technique will have higher purchase intentions than the ones that will have the information in the details of the products among other information.

The main goal of this thesis is to test whether the proposed nudges will influence the participants' purchase intentions of organic cotton clothing goods, in this case the dependent variable. Therefore, each participant experiences one of these four conditions, randomly ordered, reducing the risks of subjects understanding the purpose of the experiment. Several questions were asked to moderate the effect of gender, age and environmental orientation of the subjects on the purchase intentions of organic cotton clothes. To obtain and interpret the data for my

experiment, I used the online Qualtrics survey questionnaire that will be described thoroughly later. Next, I analyzed the data I gathered with the use of the IBM SPSS Statistics tool.

3.2 Procedure

In this chapter, I will explain the experiment procedure which goes as follows. Each person willing to take the survey had to click on the survey link to become a participant. After entering the survey link, the participant would encounter an introductory page suggesting they tap on “yes” or “no” about whether they agree to participate in the survey or not. Then, some demographic questions (i.e., gender, age, nationality, educational background) appeared for the participant to give information regarding their background. Afterward, participants were shown an explanation of what they will need to do in the experiment. It was indicated that the scenarios that they will encounter are hypothetical and they had to rate how likely it is that they would buy all the clothing options that appear in front of them with a 5-point Likert scale for each option. After, each participant is randomly assigned to one of the four scenarios. The scenarios contain images of different T-shirts and information about them (i.e., description, fabric) and each participant would randomly see either a (i) large choice set without labels, a (ii) large choice set with labels, a (iii) small choice set without labels, or a (iv) small choice set with labels. The labels were used to indicate the sustainable nature of the fabric of the T-shirts. The control group was the group with the six different choices of T-shirts in an online webshop without any kind of labeling of sustainability.

Then the rest treatment groups are differently constructed. One contains again six choices of T-shirts but this time two of them have labels on top that indicate that the product is sustainable.

The other treatment group includes only three choices without any kind of labels and the last treatment group is a three choices set of T-shirt where one of the T-shirt is indicated by a label as sustainable product. After each participant encounters the different choices in this hypothetical webshop needs to indicate the degree to which they would purchase the T-shirts if the situation was real. In the two choice sets where six choices appear the participants have to choose between the options “strongly disagree”, “somewhat disagree”, “neither agree nor disagree”, “somewhat agree” and “strongly agree” for all the available T-shirts. In the two choice sets where only three T-shirts are shown, the participants have to do the exact same procedure but for the three available options. The T-shirts are exactly the same in the scenarios with the large choice sets, and three of them appear in the small choice sets as well. This happens to make sure that all of the participants will see the exact same information and this way I will be able to test how they react to the same products when different nudging tools are being used (i.e, labels and number of choices available).

3.3 Variables and Measures

The dependent variable (DV) is the purchase intention for organic cotton clothes, while the independent variables (IVs) are the labels of sustainability, number of choices, gender, age and environmental consciousness.

Dependent and Independent Variables:

Purchase Intention for organic cotton (PI_organic): The dependent variable in this experiment examines the purchase intention of the participants to buy organic cotton clothes. I measure the purchase intention in a 5-point Likert scale where participants show the likelihood of purchasing

each product shown in the experiment. Every statement was rated using a 5-point scale (1= strongly disagree; 5- strongly agree) (Tong & Su, 2018). In order to create the score for this variable, calculated the mean of all the responses for the organic cotton T-shirts in the scenarios each participant answered. For example, for one respondent that answered scenario 1, the purchase intention for organic cotton would be calculated as follows: $PI_{\text{organic}} = \text{Mean}(\text{T-shirt 2}), (\text{T-shirt 6})$.

Label: Labels of sustainability can influence how consumers perceive a product, so a consumer that encounters one T-shirt with a label on top of it indicating the sustainable nature of it can be nudged to choose this option. This is the first independent variable used in the experiment. The variable is binary and shows with 1 the participants that encountered the labels and with 0 the ones that did not see any label. To calculate this variable, I created dummy variables for each scenario and I summed up the scenarios that include labels of sustainability. For example, a respondent that answered the scenario 2 (large choice set with labels) would take the value 1 in the variable "label". Here is a more thorough explanation: $\text{Label} = \text{Scenario 2} + \text{Scenario 4}$. A respondent that answered scenario 3 would get the value 0 because $0 + 0 = 0$ when a respondent that answered scenario 2 would get the value 1 because $1 + 0 = 1$.

Number of choices: The second independent variable of the experiment is the number of choices (small – 3 choices available and large- 6 choices available), which means whether the choice set is large or small. In the experiment the participants had to choose one option between six or three options. I chose this independent variable to investigate whether the number of choices affects the purchase intention. The variable is binary and indicates with 1 the small number of choices and with 0 the large number of choices. To calculate this variable, I created dummy variables for

each scenario and I summed up the scenarios that have only three choices, thus, the small choice sets. For example, a respondent that answered scenario 2 (large choice set with labels) would take the value 0 in the variable “number”. Here is a more thorough explanation: Number = Scenario 3 + Scenario 4. A respondent that answered the scenario 3 would get the value 1 because $1 + 0 = 1$ while a respondent that answered scenario 2 would get the value 0 because $0 + 0 = 0$.

Moderators:

Female: To test whether the gender will affect the purchase intention of organic-cotton clothing, I asked one demographic question where the participants indicate their gender. The independent variable gender examines whether the gender of the participant moderates the relationship between labels and purchase intentions. This variable is measured as binary, where 0 stands for male and 1 for female. The sample is equally divided in these two genders (**Exhibit 3**). Since I want to test whether the effect of the labels on the purchase intention is higher for females than males I named the moderator as “female”.

Young: The independent variable age examines whether the age of the participant moderates the relationship between labels and purchase intentions. The survey indicates four values: <18, 18-40, 40-60, > 60. This variable is measured as binary, where 0 stands for older groups (40-60, >60) and 1 equals younger groups (<18, 18-40). The sample indicates that the most of the participants are in the “young” group, since 93.2% are between 18-40 (Exhibit 4). Since I want to test whether the effect of the labels on the purchase intention is higher for younger than older I named the moderator as “young”.

Environmental Consciousness (EC): Environmental consciousness can be defined as the degree to which an individual is concerned about the environment (Riley E. Dunlap, 2002). Research indicates that measures of environmental consciousness are related to responsible purchase intentions which means that people with pro-environmental orientation show pro-environmental behavior (B. B. Schlegelmilch, 1996). I chose this variable as a moderator of labels on purchase intentions. To measure this moderator, I used the New Environmental Paradigm (NEP) 12-item scale (Dunlap, 2008). I measured the participants' degree of environmental consciousness with five-point Likert scales on the 12-item NEP (e.g., "The balance of nature is very delicate and easily upset," "Humans have the right to modify the natural environment"). The NEP links environmentalism with a broad eco-oriented worldview that highlights the need of humans to create a balanced relationship with nature, the understanding that there are limits to growth for their societies and question people's right to control the nature. To calculate the variable (EC), I created a dummy variable where 1 equals the environmentally conscious participants and 0 equals the less environmentally conscious participants. This division happened by calculating the mean of the responses and then I considered as environmental conscious participants the ones that have a higher score than the mean ($\mu = 3.85$).

As well as the previously discussed variables, their interaction effects with the IV "label" will be taken into consideration to conclude whether they moderate the relationship between the DV "PI" and IV "Labels".

3.4 Pre-test

To ensure that the manipulation works, I performed a pre-test with 39 respondents where they were randomly assigned to one of the four scenarios. I used SPSS statistics to analyze the results. The sample is roughly normally distributed with a mean equal to 0.4915 and a standard deviation of 0.29851. The frequency distribution of the gender variable shows that 25 respondents were females and 14 males from the 39 respondents. The frequency distribution of age shows that almost all respondents are young while only one is old. Regarding the different scenarios, respondents were almost equally distributed, with 8 participants in the control group (scenario_1, large choice set without labels), 10 participants in the treatment group with the large choice set and labels of sustainability, 9 respondents replied to the third scenario with the small choice set and no labeling and 12 participants saw the fourth scenario with the small choice set and the label of sustainability. I run a linear regression with the main and interaction effects of the manipulation to test whether the independent variables have an effect on the dependent variable (**Exhibit 1**).

Chapter 4: Results

4.1 Pre-Treatment

In order to have the final valid sample, I had to clean some of the responses. More specifically, 292 respondents filled the survey, 1 did not understand the concept and pressed “No” before starting the survey so I had to remove them from the dataset since they did not understand the scenario provided. Furthermore, 14 people did not complete the survey fully so I had to remove them from the dataset as well. Hence, 277 are the valid respondents that I will use to analyze my

research question. The participants were randomly assigned to each of the four scenarios (**Exhibit 2**).

4.2 Descriptive statistic

Of the 277 participants, 139 are females and 138 males (**Exhibit 3**). Additionally, the majority of the participants are between 18 and 40 years old (258 participants), which is considered to be the young group. Next, 17 participants are included in the older age group 40-60 while only 1 is underaged (<18) and 1 is older than 60 years (**Exhibit 4**). Regarding the educational background of the respondents, 31 finished high school diplomas, 120 have a bachelor's degree, 103 have a master's degree and only 4 have a Ph.D. Some of the respondents (20) did not specify their educational background by choosing "Other" (**Exhibit 5**). Most of the participants have Greek nationality (217), some are Dutch (15), many participants are from another European country (33) and only 12 are from a country outside of the EU (**Exhibit 6**).

The respondents are equally distributed the treatments and around the same amount of participants with similar characteristics answer each different scenario (**Exhibit 2**). The T-shirts are being chosen in a similar way from the respondents, with the organic cotton ones showing a higher preference (i.e., T-shirt 2, T-shirt 6) versus the ones made of polyester (i.e., T-shirt 1, T-shirt 3, T-shirt 4, T-shirt 5) (**Figure 2**). T-shirts 1 and 3 appear to have higher preference than T-shirts 4 and 5 which could be due to different factors such as the color of the T-shirt. In the second and fourth scenarios where labels appear on top of the organic cotton T-shirts, we can see a clear higher preference which is aligned with the whole idea of the choice architecture tools that are used in this thesis experiment.

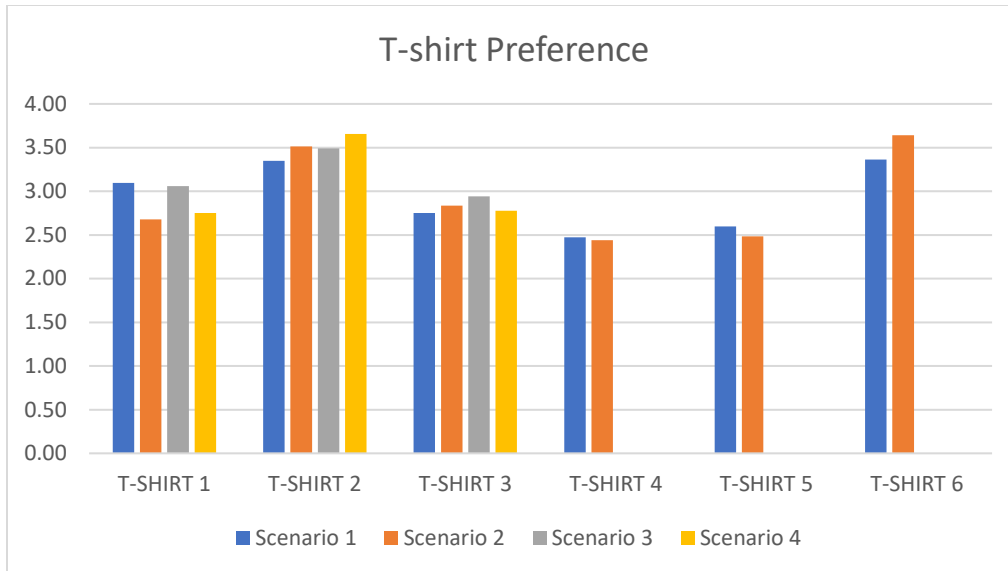


Figure 2: T-shirt Preference per scenario

The sample is normally distributed through respondents with a Mean equal to 3.5109 and a standard deviation of 1.1192 (**Exhibit 8**). To test my hypotheses, I run a multiple linear regression including the main effects and the interaction effects, so that I can create an unbiased estimate of the coefficients in interest. Hence, I ensured all the variables that affect my Dependent Variable (PI), were taken into account. **Table 1** shows the results of this regression. The interpretation of the results will be based on this table, considering a significance level $\alpha(a) = 5\%$.

Table 1:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta	d		
1						
	(Constant)	3.206	.495		6.477	.000

Label	-.206	.613	-.092	-.336	.737
Number	.167	.192	.075	.869	.386
Label*Number	-.113	.272	-.045	-.416	.678
Female	-.260	.194	-.117	-1.344	.180
Young	.231	.470	.051	.491	.624
EC	.094	.195	.042	.484	.629
Label*Female	.168	.275	.064	.612	.541
Label*Young	.260	.581	.116	.447	.655
Label*EC	.236	.276	.093	.854	.394

a. Dependent Variable: PI organic

Table 1: Effects on purchase intention for organic cotton clothing (Multiple Linear Regression Results)

4.3 Effect of Labels on PI

To test **H1** (“Labels of sustainability influence positively the purchase intentions of organic cotton clothing goods”), I needed to examine the effect of Label on Purchase Intention for organic cotton. Hence, I set the dependent variable “PI” that I measure through the question “How likely is that you would purchase T-shirt X”, where X equals each different organic cotton T-shirt (i.e., T-shirt 2 and T-shirt 6). This question was measured on a 5-point Likert scale. The dependent variable is “PI” and the independent variable is “Label” which is a binary variable (0=when no labels appear in the scenario, 1=when labels appear in the scenario). The following bar chart (**Figure 3**) presents the mean purchase intention for organic cotton when there are no labels and when there are. We can see in this bar chart that when labels appear in the scenarios, the organic cotton T-shirts are being chosen more often.

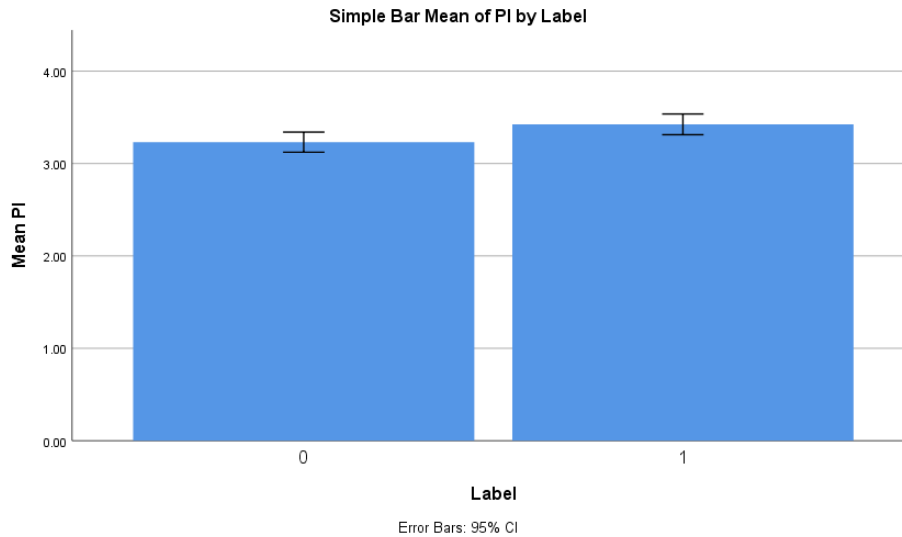


Figure 3: Purchase Intention for organic cotton clothes: Mean Differences for variable "Labels"

However, The results in **Table 1** reveal that contrary to what was expected, "Label" does not have a significant impact on the level of "PI", since $\text{Sig.} = 0.146 > \alpha = 0.05$. That means that **H1** cannot be confirmed based on the specific analysis. Hence, there seems to be no main effect between the dependent variable (PI) and the treatment manipulation (labels). Therefore, I do reject the first hypothesis **H1**: "Labels of sustainability influence positively the purchase intentions of organic-cotton clothing goods." Participants showed that the labels of sustainability affected their purchase intentions for organic cotton clothes but this difference is not statistically significant.

4.4 Effect of number of choices on PI

To test **H2** ("A smaller choice set influences positively the purchase intentions of organic-cotton clothing goods."), I needed to examine the effect of Number of choices on Purchase Intention for organic cotton. To test the H2, between the dependent variable "PI" and the independent variable "Number" which is a binary variable (0=large choice set, 1=small choice set) we need to

check the regression results in **Table 1**. The following chart (**Figure 4**) presents the mean purchase intention for organic cotton when there is a large and small choice set.

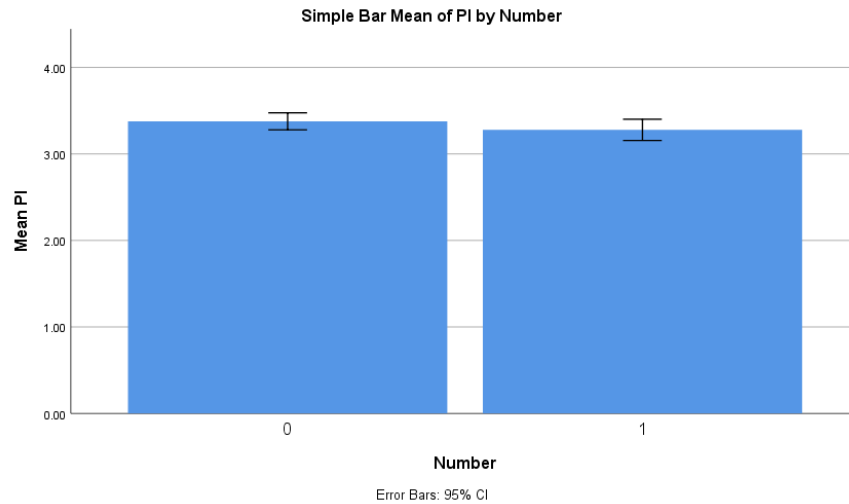


Figure 4:Purchase Intention for organic cotton clothes: Mean Differences for variable "Number"

The results in **Table 1** reveal that contrary to what was hypothesized, "Number" does not have a significant impact on the level of "PI", since $\text{Sig.} = 0.213 > \alpha = 0.05$. That means that **H2** cannot be confirmed based on the specific analysis. Hence, there seems to be no main effect between the dependent variable (PI) and the treatment manipulation (number). Therefore, I do reject the second hypothesis **H2**: "A smaller choice set influences positively the purchase intentions of organic-cotton clothing goods.". Participants showed that the labels of sustainability affected their purchase intentions for organic cotton clothes but this difference is not statistically significant. Participants showed that the smaller choice set did not affect their purchase intentions for organic cotton clothes. To test whether there is a statistically significant difference in the interaction effect of labels*small, I check the linear regression results in **Table 1**. The moderator is the interaction between the two independent variables "Label_Number". The

results show that there is no significant difference between the interaction effect between “Label” and “Number” on the “PI” ($p = 0.678 > \alpha = 0.05$).

4.5 The moderating effect of gender

To assess **H3** (“The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for women than men.”), first I needed to recode the data generated from the question “What is your Gender?” to a different variable. Therefore, I created the variable Female, where the Females were depicted with the value 1 and males with 0. Then I needed to create the variable which would test the moderation effect of Female on the relationship between Labels and Purchase Intention. This is the variable Label_Female (Label * Female). Both variables were included in the multiple linear regression, which results are shown in **Table 1**. The result highlights that the effect of Female on PI is not statistically significant, $\text{Sig.} = 0.180 > \alpha = 0.05$ and neither is the interaction effect, Label_Female, $\text{Sig} = 0.541 > \alpha = 0.05$. The results, in **Table 1**, indicate that – even though directionally, and as hypothesized, it seems that the purchase intention for organic cotton clothes is indeed stronger for women than men (**Figure 5**) – this interaction is not statistically significant. In other words, in this sample, participants and more specifically women, are not affected by the labels when they are purchasing organic cotton clothes. Hence, I reject my third hypothesis **H3**: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for women than men.”

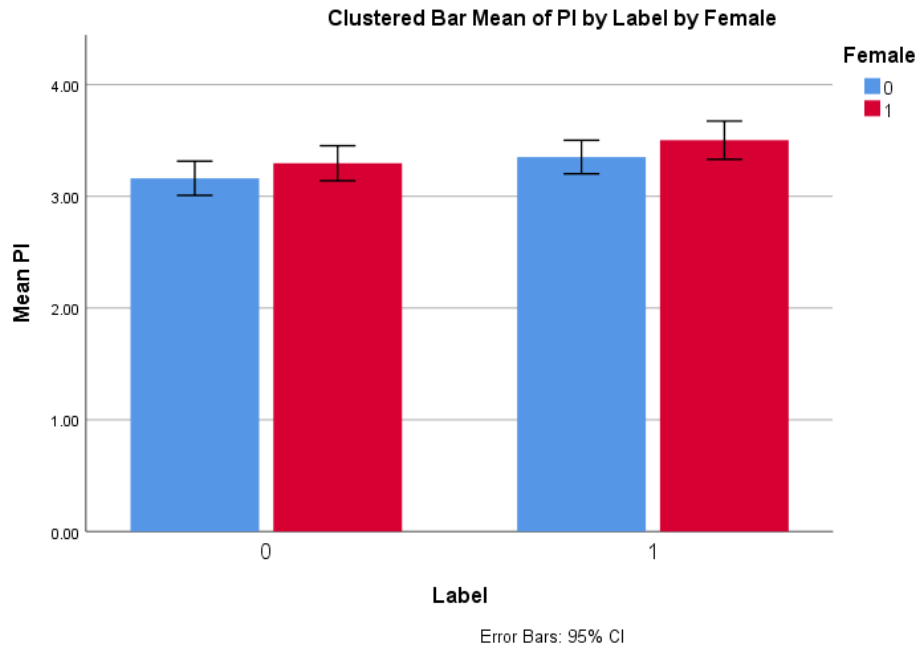


Figure 5: Interaction effect of labels*female on purchase intention for organic cotton

4.6 The moderating effect of age

To further investigate whether there is a statistically significant difference between the labels of sustainability and the purchase intention for organic between younger and older audiences, my dependent variable is again “PI”, whereas my independent variables are “Label” (i.e., the dummy variable where 0= no labels, 1= labels), and “Young”, which is also the dummy variable of age (0= old, 1= young). The moderator is the interaction between the two independent variables “Label_Young”. The results in **Table 1**, show that there is no significant difference (at the 5% level) between young and purchase intention for organic cotton, Sig = 0.624 > α = 0.05. Furthermore, the interaction between “Labels” and “Young” has no significant effect (at the 5% level) on the “purchase intention for organic cotton”, Sig = 0.655 > α = 0.05. The results, indicate that – even though directionally, and as hypothesized, - the purchase intention is stronger for younger than older groups (**Figure 6**) – this interaction is not statistically significant. In other words, in this

sample, participants and more specifically younger audiences, are not affected by the labels when they are purchasing organic cotton clothes. Hence, I reject my fourth hypothesis **H4**: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for younger than older.”

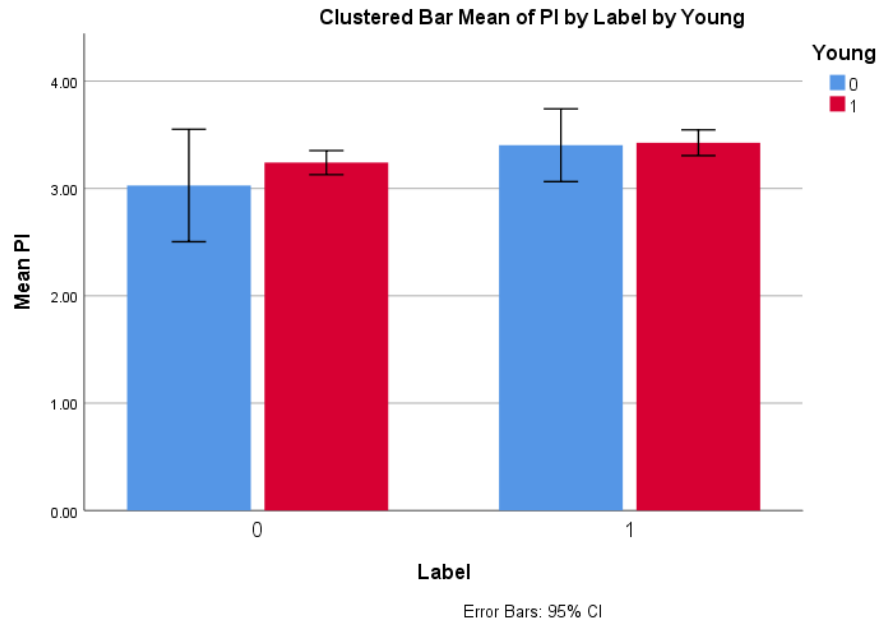


Figure 6: Interaction Effect of Label*Age on the relationship of labels on purchase intention for organic cotton

4.7 The moderating effect of environmental consciousness

To further investigate whether there is a statistically significant difference between the labels of sustainability and the purchase intention for organic between environmentally conscious and not audiences, my dependent variable is again “PI”, whereas my independent variables are “Label” (i.e., the dummy variable where 0= no labels, 1= labels), and “EC”, which I turned into a dummy variable by calculating the mean of the sample and considering as environmentally conscious the ones higher than the mean ($\mu=3.85$) as environmentally conscious compared to the ones with lower scored as the mean (0= non-environmental conscious, 1= environmentally conscious). The

moderator is the interaction between the two independent variables “Label_EC” (Label * EC). The results in **Table 1**, show that there is no significant difference (at the 5% level) between environmental conscious participants and purchase intention for organic cotton, Sig = 0.629 > a= 0.05. Additionally, the interaction between “Label” and “EC” has no significant effect (at the 5% level) on the “PI”, Sig = 0.394 > a= 0.05. Even though, **Figure 7**, indicate that the purchase intention for organic cotton clothes is stronger for environmentally conscious participants when they encounter labels, this interaction is not statistically significant. In other words, in this sample, participants and more specifically the ones that are more environmentally conscious than the others, are not affected by the labels when they are purchasing organic cotton clothes. Hence, I do reject my fifth hypothesis **H5**: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for environmentally conscious consumers.”

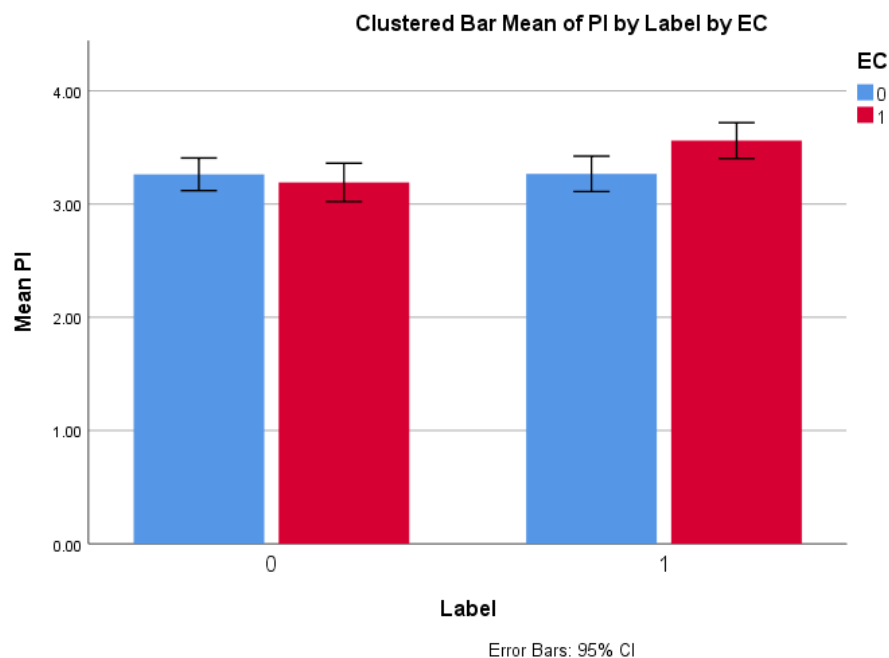


Figure 7: Interaction Effect of Environmental Consciousness on the relationship of labels on purchase intention for organic cotton

Chapter 5: Conclusion

5.1 General discussion

In this final chapter, I discuss the results that I obtain from my research. My central research question is “How can choice architecture tools nudge consumers’ into choosing organic cotton clothes?”. The choice architecture tools I used in this research to test whether they will nudge consumers into sustainable purchases are the “labels of sustainability” and the “number of choices”. To test these two choice architecture tools and how they nudge the fashion consumers on purchasing organic cotton clothes, I performed the experimental survey discussed in Chapter 4, and now I will further discuss the findings from the survey.

Firstly, I found that there is no significant effect between labels (examining scenarios with and without labels) and purchase intention for organic cotton clothes. However, some further details should be highlighted regarding H1 (“Labels of sustainability influence positively the purchase intentions of organic-cotton clothing goods.”). There are several reasons why the results are not significant. Most probable, the participants are ignoring the manipulations stating their willingness to purchase organic cotton clothes so even though the mean is higher for organic cotton T-shirts than polyester T-shirts when labels appear (**Figure 3**), this score is not higher due to the existence of the choice architecture tool “labels” but other reasons such as the model of the T-shirt and/or the color. The fact that the participants are not choosing the organic cotton T-shirts because of the nudging tools can also be explained by the high number in the Unstandardized B for the constant (**Table 1**) ($B=3.206$). This high number shows that there are other reasons for the purchase intention of sustainable t-shirts, such as color or model as I mentioned earlier. To conclude, even though we see that as hypothesized the mean for the

purchase intention is higher for organic cotton clothes when labels appear in the scenario (Figure 3), this difference is not statistically significant so I do reject the H1, stating that the participants in my sample are not affected by labels when they are purchasing.

Previous research has shown that when the number of choices is increasing, people tend to get confused and they choose the simplest answer without considering the details thoroughly (Iyengar & Kamenica, 2007). To contribute to this research I chose to test whether this effect will appear in the fashion industry. However, the interaction effect of labels*number of choices appeared to be non-significant which shows that not only the labels as a choice architecture tool, is not affecting the sustainable purchase intention, but also the small or large choice set is not nudging the consumers to choose the organic cotton clothes. Fashion consumers that encounter larger choice sets compared to small choice sets did not get demotivated and abandon their sustainable purchase intentions. Comparing the means of the participants that answered large choice set scenarios and small choice set scenarios it was clear that the smaller one did not lead to higher purchase intention for sustainable clothes (**Figure 4**). Thus, I do reject the second hypothesis where I state that “A smaller choice set influences positively the purchase intentions of organic cotton clothing goods”. To conclude, it appears that in the sample that answered my survey, the participants are not affected by the choice architecture tools when they are purchasing clothes in an online environment. Contrary to previous literature, the participants in this research showed higher scores for organic cotton clothes when they encounter larger choice sets than smaller (**Figure 4**).

Moreover, I suggested three moderating effects on the relationship between labels and purchase intention for organic cotton clothes. More specifically, I proposed as moderator the gender of

the participant and I hypothesized that females are influenced by the labels when they are purchasing clothes than males (H3: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for women than men.”). The analysis provides us with results that support that, the interaction of Label*Female is not statistically significantly different. Thus, this leads to the conclusion that participants equally perceive the labels of sustainability while purchasing online, no matter if they are females or males.

Furthermore, I examined the role of age and how this factor influences how young and old people perceive labels when they are purchasing clothes. The results indicate that the presence of labels does not affect the willingness to purchase for younger groups. As I hypothesized, younger audiences indeed choose more often the sustainable products (**Figure 6**) but this difference is not statistically significant (**Table 1**). Thus, I do reject the H4 where I state that: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for young than old”.

Last but not least, one of the most interesting findings of this research is the idea that environmentally conscious consumers are not influenced by labels when they are purchasing than other audiences that are not so concerned about the environment. Previous research has explored the idea that the environmental consciousness of consumers is a highly important determinant of sustainable purchases (Joshi & Rahman, 2015). To contribute to the previous studies, it is this gap that I try to address with my thesis, offering a first step on how this consciousness affects the purchase intention for organic cotton clothes. The analysis I performed rejects my hypothesis (H5: “The effect of labels of sustainability on purchase intentions of organic cotton clothing is higher for environmentally conscious consumers”).

Through the online experiment I performed, I show that participants contrary to what was expected, are not affected by labels on their purchase intentions for organic cotton clothes when they are highly environmentally conscious. This means that the people that are concerned about the environment more than others, are not more likely to purchase sustainable products when they encounter labels on the products. The sample of this research, is not highly environmentally conscious as it is depicted in the **Exhibit 7**, this could also explain the fact that environmental consciousness is not a significant moderator on the relationship between labels of sustainability and purchase intention. This is explained by the nationality of the participants as well, since as depicted in **Exhibit 6**, the majority of the sample are Greek people and in Greece the environmental concerns are not highly spread among the individuals. Furthermore, as it was mentioned in previous studies, fashion consumers that hold environmentally-oriented views, do not always transfer their intentions to purchase sustainable products. This is called “values-action gap” and it could also explain why they did not choose the organic cotton options in this specific research (Moisander & Markkula, 2012); (Carrington et al., 2010); (Eckhardt et al., 2010).

5.2 Academic and Managerial Implications

Heinzle and Wüstenhagen (2012) explored the idea that eco-labels can be a very powerful tool to increase sustainable behaviours and communicate important information with the consumer. To contribute to this literature, I examined how labels of sustainability can affect the sustainable behaviours of organic cotton clothes. Contrary to the previous literature and to my hypothesis (**H1**), I found that labels of sustainability have no significant impact on fashion consumers on purchasing sustainable clothes. In fact, the purchase intention for organic cotton clothes, is affected by other factors such as the appearance of the clothes, the color, and several other

factors rather than the fact that the piece of clothing is made from organic cotton and this is indicated by a label. People probably prefer to choose clothes based on factors that are not ecologically oriented and this is the main issue that makes the fashion industry contributing so intensively to the environmental problems (Shephard & Pookulangara, 2013).

Sheena S. Iyengar (2007) examined how choice overload affects individuals using a gambling experiment where participants needed to choose one over an amount of options. The outcomes depicted that the people who experienced more options, preferred the simpler and less risky choice even though there were choices that made more sense in the choice set. On contrary, participants that encountered less choices understood which option would be more profitable for them. To contribute to this literature, I used as a choice architecture tool the number of choices on my experiment and the results showed that the participants did not get influenced by the available choices and also, contrary to the previous literature and to what was hypothesized **(H2)** they chose the organic cotton options more often in the bigger choice sets than the smaller **(Figure 4)**.

The first two hypotheses of my research contributed to the existing researches on the influence of choice architecture tools on the purchase intentions for sustainable options and I found that contrary to my hypotheses, the consumers are not influenced by labels and the number of choices when they purchase organic cotton clothes. These findings have a high managerial relevance, as we can see that in the e-commerce platforms, it is not easy to influence fashion consumers in purchasing responsibly using nudging techniques and the marketing managers of the fashion websites need to choose different methods to promote their sustainable clothes. Also, this is a significant finding for firms selling sustainable clothes online, as it can provide high

managerial relevance for e-commerce and marketing managers and help them understand that most probable the existence of labels and the number of options are not the most significant indicators for an effective construction of their web shops.

Birtwistle & Morgan (2009) depicted the idea that young females do not consider the environmental costs of their purchases due to ignorance. My research contributed to this study as I found that in the fashion industry the same behavior takes place. As shown in the results of my research, contrary to what was hypothesized (**H3, H4**), females and younger audiences, did not get affected by the choice architecture tools on their willingness to purchase organic cotton which is aligned to what Birtwistle & Morgan (2009) had explored. Many firms use choice architecture methods, like labeling, to gain extra attention to their sustainable clothes and they can take into consideration that the effect of labels on purchase intentions is not different for women and men, younger and older groups. Taking this finding into consideration marketing managers can make more informed targeting of their customers when they create marketing strategies to promote sustainability in fashion.

Joshi & Rahman (2015) explored the idea that one of the most important elements that leads to sustainable purchases is the environmental consciousness of the individuals. To contribute to this study, I hypothesized that similar behavior happens in the fashion industry and more specifically in organic cotton clothing purchase intentions. However, contrary to previous literature and to what was hypothesized, the finding of my research showed that environmentally conscious consumers did not reflect their intentions to sustainable purchases. Environmentally conscious consumers will not get nudged from the choice architecture tools on their willingness to purchase organic cotton clothes than consumers that are not so concerned about the environment and

this could partially be explained by the “values-action gap”, where consumers regardless their environmental consciousness they do not translate their sustainable intentions to sustainable purchases. This result can be very intuitive for marketing managers as well. Brands and e-commerce platforms selling online can take into account the fact that the degree to which an individual is concerned about the environment is not influencing their sustainable purchases and they can make more informed decisions on how to promote the sustainable products. This can help marketing managers understand that even the environmentally-oriented consumers might not translate their intention to purchases and there is still a lot of space for informative marketing campaigns to push them into turning to sustainable purchasing behaviors.

5.3 Limitations and further research

As far as I know, this research is the first one concerning the choice architecture tools “labels” and “number of choices” effect on the purchase intention of organic cotton clothes. Therefore, it includes several limitations. However, there are many opportunities for further explorations on this subject as well. Firstly, in order to gather my data, I used an online experiment survey as a method. This method is easy to gather participants and it is convenient for them as they can take it where they feel more comfortable (e.g, at their home) without feeling pressure of the presence of someone else conducting the survey. However, using this method it is not possible to control for external factors such as whether the participant is paying the needed attention and how carefully they are filling the survey. Hence, it would be interesting to conduct this experimental survey in a laboratory experiment to control some of the external factors that might influence the results.

Secondly, there is the limitation that I used a random group of participants without any restrictions. This led to having a lot of participants from Greece. People who live in Greece do not have a high perception of environmental concerns and sustainability. More specifically, the mean of the sample regarding environmental consciousness is 0.49 and the standard deviation 0.501 (**Exhibit 10**). This shows that less than the 50% of the participants in the survey are environmentally conscious. Thus, the effect of environmental consciousness on willingness to buy could be different due to lack of variation. Hence, I would suggest in future research to have a more broad sample in terms of nationality to make sure all the different cultures are captured. The culture of people might influence their perception of environmental issues and change the results. Another limitation is the fact that 93.1% of the participants were in the “young” audience group and this makes the age as a moderator less valid. Future researchers could focus on a variety of ages in their sample to test their differences more thoroughly, like for instance a sample around 60% younger and 40% older groups would be more valid to show how the age moderates the effects of labels on purchase intentions for organic cotton clothes.

Lastly, the R square of my sample is quite low ($R^2 = 0.038$) which means that the model indicates that the predictor variables still give information regarding the response even when the data points are far away from the regression line. This means that another type of analysis method could also be a fit for this sample such as non-linear regression analysis. This method fits better a model where there are also non-linear relationships between the dependent and the independent variables. Also, gender and age as moderators did not affect the interaction between the labels and the purchase intentions for organic cotton. Therefore, another

moderator could be used in future research to examine the relationship between the labels and purchase intentions such as the income of the participants.

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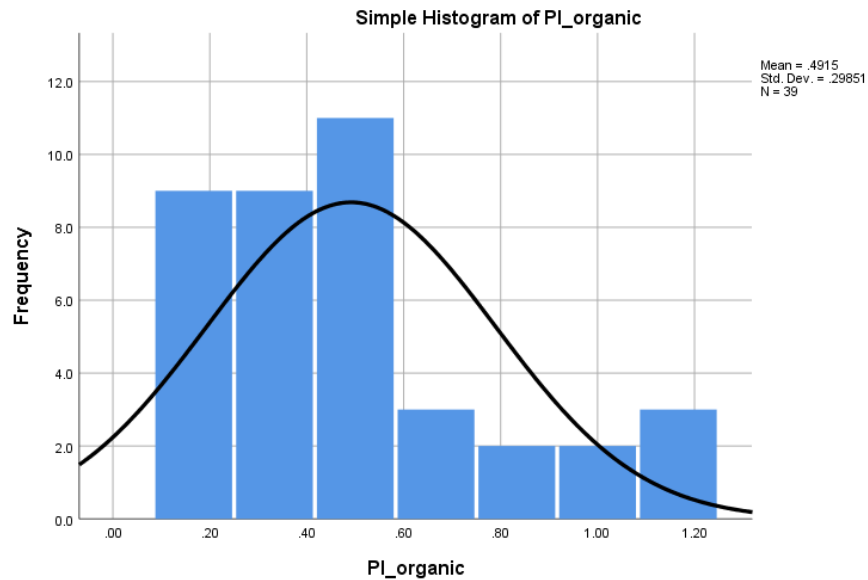
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Appendices

Exhibit 1: Pre-test Normality and Linear Regression Results



Coefficients^a

Model		Unstandardized		Standardized		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	.220	.267			.826	.415
	EC	.204	.132	.331		1.540	.134
	Female	.063	.132	.103		.478	.636
	Young	.214	.254	.115		.842	.407
	Number	-.257	.127	-.433		-2.021	.052
	Label_Female	.092	.166	.152		.555	.583
	Label_Young	.369	.176	.609		2.101	.044
	Label_EC	-.307	.164	-.507		-1.873	.071
	Label_Number	-.280	.160	-.462		-1.749	.090

a. Dependent Variable: PI_organic

Excluded Variables^a

Model	Beta In	t	Sig.	Partial Correlation	Collinearity
					Statistics
					Tolerance
1	Label	. ^b	.	.	.000

a. Dependent Variable: PI_organic

b. Predictors in the Model: (Constant), Label_Number, EC, Young, Female, Label_Young, Number, Label_EC, Label_Female

Exhibit 2: Scenario Frequencies

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Scenario_1	72	2.33	5.00	3.2986	.57049
Scenario_2	65	2.33	5.00	3.4667	.59599
Scenario_3	67	1.00	5.00	3.1592	.72092
Scenario_4	72	1.67	5.00	3.3889	.73158
Valid N (listwise)	0				

Exhibit 3: Gender Frequencies

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	138	49.8	49.8	49.8
	Female	139	50.2	50.2	100.0
	Total	277	100.0	100.0	

Exhibit 4: Age Frequencies

What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	<18	1	.4	.4	.4
	18-40	258	93.1	93.1	93.5
	40-60	17	6.1	6.1	99.6
	>60	1	.4	.4	100.0
	Total	277	100.0	100.0	

Exhibit 5: Education Frequencies

What is your highest level of education attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	31	11.2	11.2	11.2
	Bachelor's Degree	119	43.0	43.0	54.2
	Master's Degree	103	37.2	37.2	91.3
	PhD	4	1.4	1.4	92.8
	Other	20	7.2	7.2	100.0
	Total	277	100.0	100.0	

Exhibit 6: Nationality Frequencies

What is your nationality?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dutch	15	5.4	5.4	5.4
	Other European Country	33	11.9	11.9	17.3
	Non-European Country	12	4.3	4.3	21.7
	Greek	217	78.3	78.3	100.0
	Total	277	100.0	100.0	

Exhibit 7: Environmental Consciousness Frequencies

EC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	142	51.3	51.3	51.3
	1	135	48.7	48.7	100.0
Total		277	100.0	100.0	

Exhibit 8: Normality of the sample

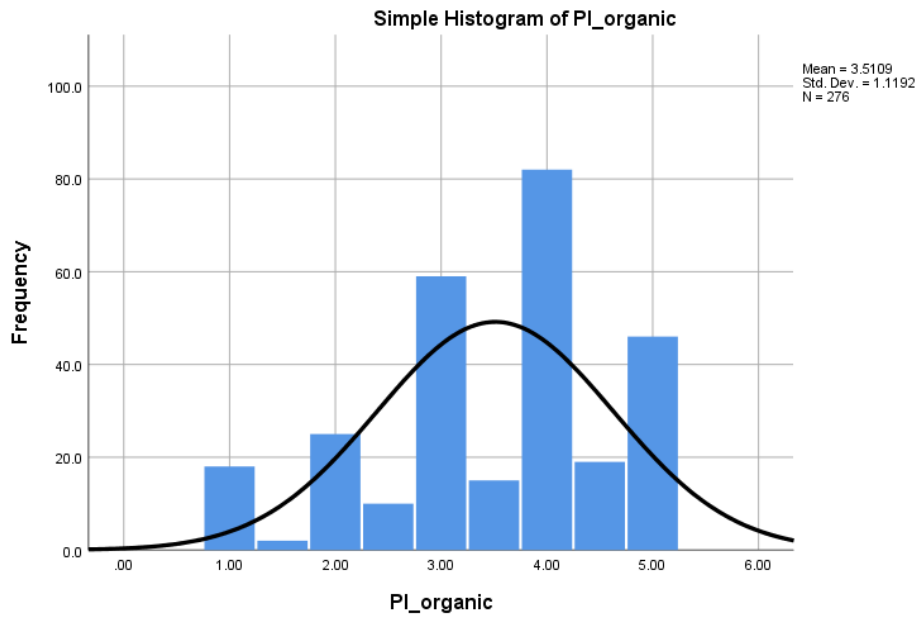


Exhibit 9: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.195 ^a	.038	.005	1.11618

a. Predictors: (Constant), Label_EC, Number, Young, Female, Label, EC, Label_Female, Label_Number, Label_Young

Exhibit 10: Mean of Environmental Consciousness (EC)

Report

EC

Mean	N	Std. Deviation
.49	277	.501

Survey Appendix

1. Introduction

Dear Participant,

Thank you in advance for taking part in this survey. My name is Maria Kafaropoulou, and this survey is part of my thesis research for my master's in Marketing at the Erasmus University of Rotterdam.

Participation in this experimental survey is anonymous, and the data acquired will be used solely for academic purposes.

It should take up to 4 minutes to complete the survey.

If you have any questions, feel free to contact me at my email 574008mk@eur.nl.

I understand the above and agree to participate in this survey.

- Yes
- No

2. Demographics

What is your gender?

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

What is your age?

- <18
- 18-40
- 40-60
- >60

What is your highest level of education attained?

- High School
- Bachelor's Degree
- Master's Degree
- PhD
- Other

What is your nationality?

- Dutch
- Greek
- Other European Country
- Non-European Country
- Other

3. Instructions

In the next steps, a hypothetical scenario will be presented. Imagine that you are inside an online website and want to purchase a T-shirt, and the following options appear in front of you.

You will need to think which T-shirt you would choose if you wanted to purchase it for yourself or for a friend and rate how likely it is that you would buy each T-shirt.

Please see the options carefully and answer honestly. Keep in mind that there are no right or wrong answers.

I understand:

- Yes
- No

4. Scenario #1 (Large Choice Set without Labels of Sustainability)

How likely is it that you would purchase these T-shirts?



T-shirt 1: Dark Green Polyester T-shirt



T-shirt 2: Blue Organic Cotton T-shirt



T-shirt 3: Burgundy Polyester T-shirt



T-shirt 4: Light Blue Polyester T-shirt



T-shirt 5: Grey Polyester T-shirt



T-shirt 6: Black Organic Cotton T-shirt

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would purchase the T-shirt 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Scenario #2 (Large Choice Set with Labels of Sustainability)

How likely is it that you would purchase these T-shirts?



	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would purchase the T-shirt 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Scenario #3 (Small Choice Set without Labels of Sustainability)

How likely is it that you would purchase these T-shirts?



T-shirt 1: Dark Green Polyester T-shirt



T-shirt 2: Blue Organic Cotton T-shirt



T-shirt 3: Burgundy Polyester T-shirt

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would purchase the T-shirt 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Scenario #4 (Small Choice Set with Labels of Sustainability)

How likely is it that you would purchase these T-shirts?



T-shirt 1: Dark Green Polyester T-shirt



T-shirt 2: Blue Organic Cotton T-shirt



T-shirt 3: Burgundy Polyester T-shirt

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would purchase the T-shirt 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would purchase the T-shirt 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Environmental Consciousness Measurement (NEP)

How strongly do you agree or disagree to the following statements?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The number of people the earth can support is limited and we are approaching it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The balance of nature is very delicate and easily upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People can modify the natural environment to support their needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mankind was created to rule over the rest of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When humans interfere with nature it often produces disastrous consequences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animals and plants exist to fulfill the needs of people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To maintain a healthy economy we will have to develop a "steady state" economy where industrial growth is controlled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans must live in harmony with nature in order to survive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The earth is like a spaceship with only limited room and resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human needs do not adapt to the natural environment because they can remake it to suit their needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are limits to growth beyond which our industrialized society cannot expand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People harm the environment severely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>