Sustainability as a result of lateral placement of the options in an online configurator



Radboud Universiteit Nijmegen

Master thesis 2018-2019

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Abstract

Objective: The aim of this study was to gain further insights into the effect of nudging a consumer towards the most sustainable (customized) product by displaying the options in an online configurator lateral to the right instead of to the left. Furthermore, this research investigated whether this effect differs for consumers with an abstract or a concrete mindset. The purpose of this research is to stimulate the sales of sustainable products by designing a choice architecture that nudges consumers into the most sustainable option.

Method: 147 Participants filled in the main experiment. A two (low versus high construal level) by two (sustainable option placed at the left versus at the right) between-subject design was used. The product category used in the online configurator were shoes. Several Independent Samples t-tests were conducted to test the proposed hypotheses. An ANCOVA test was conducted to test the effect of several control variables on the choice for the sustainable option of consumers in the online configurator.

Results: The results show that no differences were found between lateral placement of the sustainable option when it was placed to the right versus the left in the online configurator. Furthermore, the manipulation treatment in the main experiment did not succeed, which led to the fact that no differences could be found between the groups that received the manipulation treatment for the low construal level versus the high construal level. The control variable, interest in sustainability, had a significant influence on the choice for the sustainable option.

Conclusion: Lateral placement of the sustainable option to the right versus to the left in an online configurator for shoes did not significantly lead to more consumption of the sustainable option. However, more research needs to be conducted in a more realistic experiment to confirm this. Additionally, further research should build on this research to find significant results between the groups with a different mindset. Furthermore, choice architects should highlight sustainable words while designing a customization tool.

Key words: Nudging, Sustainability, Construal Level Theory, High/Low Construal Level, Mass Customization, Online Configurator, Customization Tool, Choice Architecture.

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1. Introduction

In 2015 the Sustainable Development Goals (SDGs) were defined by the United Nations. This initiative entails a collection of 17 global goals that the world governments must try to reach by 2030 (United Nations, n.d.). Consumers can directly affect some of these goals with their purchase behavior without much effort, especially the following four goals:

- Goal 12: Responsible consumption and production
- Goal 13: Climate action
- Goal 14: Life below water
- Goal 15: life on land



At present the topic of environmental sustainability has become more relevant than ever before. An increasing number of people and companies have started to become aware of climate change, air pollution, toxic waste and the fact that most resources like fossil fuels are finite. This trend is increasing as the consequences are becoming ever more visible around the globe (Bonini, Gorner & Jones, 2010) (Houlihan & Harvey, 2018). These negative consequences on the environment are highlighted in the citation of Elena Manaenkova, Deputy Secretary General of the World Meteorological Organization:

"Every fraction of a degree of warming makes a difference to human health and access to food and fresh water, to the extinction of animals and plants, to the survival of coral reefs and marine life. [...] Every extra bit matters." (Manaenkova, Deputy Secretary-General WMO, 2018).

Especially the last sentence of the citation of Elena Manaenkova, is crucial for the solution of the problems: every extra bit matters. Consumers can provide that extra bit, by consuming more sustainable products. It is however a fact that the market share of green products (i.e. sustainable products) is still very low according to an international study of Unilever from 2017. This is primarily caused by ineffective marketing of green products (Ottman, Stafford & Hartman, 2006) and consumer distrust of green marketing (Bonini & Oppenheim, 2008). Solving these problems are going to be very costly and time consuming.

Because of the low market share of the sustainable products, the European Union has already started with implementing more sustainable products. For example, the EU wants to start banning plastic single-use items such as plastic tableware and cotton buds which have to be fully banned by 2021 and replaced by more sustainable alternatives (European Parliament,

2018). Nevertheless, these attempts can be seen as unethical as the government forces people to change their buying behavior. For example, some disabled people rely on straws to drink their beverages. Metal straws are too inflexible and alternative compostable straws are on average 20 times more expensive than plastic straws (Ho, 2018). The possibility to buy plastic single-use items disappears and as a result people could become to feel patronized.

A better solution for implementing more sustainable products can be seen in nudging. A nudge is a concept used in behavioral science. This alters people's behavior in a predictable way without removing any options or significantly changing their economic incentives (Thaler & Sunstein, 2008). A nudge is a relative cheap alternative to the more traditional tools, like giving economic incentives when a desired choice is made (Benartzi et al., 2017).

Organizations like supermarkets use the nudge theory. Cheap products are placed at the lowest shelf while more expensive products are placed at eyelevel. The consumers are nudged to buy the more expensive products. Cheap products are neither banned and consumers do not receive an economic incentive if they buy the more expensive products. This counts as a mere nudge. Although, this specific nudge is for the supermarkets own gain, to achieve more sales of profit-driven products.

In this way a nudge can also be used as a tool to help to increase the world-wide market share of sustainable products. This could be a more ethical solution instead of only banning the unsustainable options.

Another relevant topic in contrast to the past is the decrease in mass production and the increase of mass customization. Mass customization has replaced or supplemented mass production in ample amounts (Khan & Haasis, 2016). Individuals have their own specific wishes for products, their own personal needs. A lot of times the fulfillments of those needs cannot be achieved by mass production (Hankammer, Hora, Canetta & Sel, 2016).

Mass customization (MC) was first defined as "reaching the same large number of customers [...] as in mass markets of the industrial economy, and simultaneously [treating the customers] individually as in the customized market of pre-industrial economies." (Hankammer & Steiner, 2015 p.505).

MC is already praised by the European Commission as one of the important trends that leads to a more sustainable European economy (Hora et al., 2016) as it can lead to waste reduction. Products are only produced when the customer places an order. As such, only the quantity that is required by the customer is actually produced (Hora et al., 2016). If the nudge theory and MC could be combined this will result in an even more sustainable European economy.

To exploit MC to the fullest a toolkit such as a configurator is needed, which is also a potential design for the choice architecture of a nudge. Such a configurator enables consumers to design and style the product to fit their exact wishes. Currently, a configurator is primarily used as a design tool for the online platform. Customers can indicate their preferences directly to the manufacturer. They are then able to produce the product by using a sophisticated production line, with a price comparable to that of a non-customized item (Keller, 2012).

Imagine going to a shoe store to buy a new pair of sport shoes. Sadly, they do not sell the exact pair you had in mind. There is a pair you like, but the color is not correct. On the internet you find out that there is the option to customize the pair of shoes from the same brand that allows you to choose the different materials of which the shoe is made and the color. Some options are more sustainable than others, but not everyone is aware of this or could it be your top priority. After a little while you put together a shoe which you prefer. The manufacturer then produces the shoes and they are shipped to your house or a local store.

This is a typical example of mass customization. This aspect is important because it allows companies to interact with their customers. Furthermore, companies get more accurate data of their customers and obtain knowledge of current trends. This results in a lot of benefits, also for the manufacturer (Keller, 2012).

Admittedly, it could be the case that the pair you customized is not the most sustainable option. Incorporating the nudge theory in the configurator, more sustainable choices could have been made. A modified design of the configurator leads to a different choice architecture. If this could be rearranged so that the desired choice is the most obvious, the consumer may be nudged to behave in the desired way of the choice architect with little effort (Keller, 2015).

A marketer is given a powerful opportunity to design the choice architecture, which in turn can lead to the sales of more sustainable products. When a marketer is able to nudge the consumer into the direction of the most sustainable option, this can in the long term reduce the negative consequences of the environmental problems.

However, not all consumers look with the same mindset at products. Consumers can think in an abstract or concrete manner about certain products. The difference in behaviorism could lead to another effective design of the configurator. When consumers thinks abstract about a product, they look at the bigger picture and are less focused on the unique details of that product. When a consumer thinks concrete about a certain product, they are more focused at the unique details that a product has (Trope & Liberman, 2010)

The mindset of consumers can be influenced by multiple factors, for example time. Whether a product is focused at fulfilling immediate or future needs, this can lead to a different mindset (Trope & Liberman, 2010). As a consequence, it is possible that having a concrete or abstract mindset needs another design of the choice architecture to be nudged in the direction of the most sustainable option.

The main question remains how a marketer should design a configurator in such a way that the desired (i.e. sustainable) option, is chosen more often by the consumer. It has already been proven in the food industry that the lateral position of a product (e.g. to the right or to the left) affects whether this product is chosen more as well as the quantity of the product (Romero & Biswas. 2016). From a marketing perspective it is also important to find out whether the design of the configuration tool has a different effect on people with an abstract or a concrete mindset. This leads to the following research question:

- What effect does lateral displaying a choice architecture has on the consumption of sustainable products and how does this differ for people with an abstract or concrete mindset?

According to me no previous study has been done about lateral displaying the choice architecture in the field of sustainability with consumers with an abstract or concrete mindset. For that reason, this research will contribute to the existing literature on choice architecture.

This research will try to answer the research question by reviewing existing literature about this topic. The theoretical background will be conducted in the next chapter where the hypotheses will be stated. The third chapter explains the methodology, which involves a detailed account of how the research is conducted. In the fourth chapter the results of this research will be stated. Finally, in the discussion chapter, the results will be discussed and it will provide practical and theoretical implications, critically reflect the scope/limitations of this research and provide ideas on how to continue further research.

2. Theoretical background

This chapter reviews the literature on the topic of this research, that is to say sustainability by lateral placement. The topic of sustainability will be reviewed first. Secondly, the choice architecture in mass customization will be explored. Finally, the design of the choice architecture – lateral displaying the options - will be discussed.

2.1 Sustainable consumption

In this research, sustainability is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations Brundtland Commission, 1987).

Sustainable consumption is paramount to reduce the impact that society has on the environment (Jackson, 2005). It is a topic already discussed many times in literature. Some scholars like De Geus (2003), believe it is necessary for the world to look to the past, consuming wise. Back to a time when people were satisfied with less and lasting products. This requires an adjustment in lifestyle which calls for more thoughtful consumption.

However, according to Wilk (2004) this is near impossible. We as a society are used to a certain lifestyle, and going back to a more basic standard of living would be almost insurmountable. Thus instead of consuming less, consumers should start consume sustainable.

One of the ways to achieve more sustainable consumption, is the greening approach. The greening approach seeks to maximize the adoption of 'green' products. These are products that have a smaller ecological footprint in the production, usage and post-use phase (overall life-cycle) than conventional products (Sheth, Shetia & Srinivas, 2011).

The ecological footprint is a tool that helps to review the required ecological capacity to produce and dispose of that product (Wackernagel & Rees, 1998). At present, the world has a far larger ecological footprint than the earth can handle. This is made painfully clear on Earth Overshoot Day, which last year took place on August 1st. As of that day our global society has consumed all the resources the earth can provide us in a sustainable way each year. This day predates the last every year since 1987. In an ideal situation Earth Overshoot Day should be no earlier than January 1st the next year. To that end sustainability is necessary to reduce the impact on the earth and to ensure there is a future for next generations (Borja & Elliott, 2018).

A considerable amount of companies already promote green consumption, so much so it has even started to become a trend. Nevertheless, as was already stated in the introduction, green products still have a low market share. An international study from 2017 conducted by Unilever in 2016 asked 20,000 adults from five different countries (UK, US, Brazil, India and Turkey) whether their sustainability concerns had an impact on the choice they made in the store and at home. The result was that only 33% of the consumers choose a green product in store, while 78% of the respondents indicated that they preferred a green product over a non-green product.

A lot of scholars wrote about this gap between consumers' attitude towards sustainable products and their actual purchasing behavior. Vermeir & Verbeke (2005) found that consumers perceive a low number of available sustainable products. Therefore, the intention to buy the sustainable products remains low. On the other hand, they also found that some consumers experience social pressure from peers. Therefore, they buy sustainable products is negative. There are two main explanations for that gap. It could be caused by ineffective marketing (Ottman et al., 2006) or consumer distrust of green marketing (Bonini & Oppenheim, 2008).

Ineffective marketing is the result of green marketing myopia. Green marketing myopia is defined when a company focusses too much when producing a green product on improving environmental quality and less on improving customer satisfaction (Ottman et al., 2006). With green marketing myopia, organizations make the mistake of not taking the consumer as the center of approach.

Consumer distrust primarily originates from the fact that consumers trust the results in relation to sustainability if it is derived by scientists and environmental groups, but to lesser account from the government, media, or other organizations. Consumers distrust those parties, because a lot of those claims about green products are misleading or falsely stated (A 2007 study by Terra Choice Environmental Marketing).

Due to marketing inefficiencies and consumers mistrust in the "greenness" of companies, less "green" products are bought. Solutions however can be found in improving marketing programs and reducing consumers mistrust. Yet this is difficult and time consuming. An easier and cheaper solution could thus again be found in nudging. This topic will be further elaborated on in the next subchapter.

2.2 Nudge theory

A nudge is defined as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economics incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid." (Thaler & Sunstein, 2008, p. 6).

A nudge can be more effective than traditional tools, because people are not always rational when making decisions or judgements (Thaler & Sunstein, 2008). In fact, they often make decisions that are not optimal for themselves and for their society. A nudge is part of behavioral science and is part of the libertarian paternalism movement (Thaler & Sunstein, 2008).

For a long time, the use of behavioral science was seen as very unsystematic (Shafir, 2013). The reasons for this was that the mainstream economics believed that consumers always make rational decisions, while the behavioral science focused more on the sides of the humans that are not rational. Their focus was on insights from cognitive and social psychology (Lehner, Mont & Heiskanen, 2016).

The libertarian aspect comes from the fact that when people are nudged they are still able to enact their free will and are able to opt out any undesired options. Thus, they are free to choose out of all the options. The Paternalistic aspect lies in the fact that it is legitimate for the choice architects to nudge people. This is because the choice architects try to influence the behavior of people, and the consequence is that those people live longer, healthier and happier lives (Thaler & Sunstein, 2008).

Nudging is a way to push people in the direction that they otherwise might not have chosen (Thaler & Sunstein, 2008). When a nudge is executed properly, it can contribute to solving many of society's problems (e.g. environment issues), while still guarding the freedom of choice of the people that are being nudged.

When marketers want to influence the behavior of their consumers, they are able to design a choice architecture. There are an abundant of different designs for the choice architecture. Such an architecture can for example vary in the selection of the default option, in the presentation that the order of alternative choices are shown or the choices can be presented in a different manner (Johnson et al., 2012).

The default option is chosen when the decision-maker takes no active steps, it is pre-selected by the choice architect. Decision-makers should actively take steps to change this option into another option. If the decision-maker would restrain from interfering, then the default option is chosen (Johnson et al., 2012), a powerful tool when designing the choice architecture.

The effectiveness of the nudge theory is investigated by many academic researchers in different kinds of fields. Benartzi et al., (2017) investigated whether the government should use nudging or more traditional tools for changing individual behavior in pursuing policy objectives. They concluded that the effect of nudging is often greater for some type of policy objectives, on a cost-adjusted basis, than the more traditional tools. In the food sector a large number of academic researchers e.g. Romero & Biswas (2016), Guthrie & Mancino (2015) and Bucher et al., (2016) investigated the effect of the nudge theory. Their main purpose was to find out whether nudging consumers could lead to healthier food choices. A different design of the choice architecture lead to a different effect on the food sector.

Recently the nudge theory is also used more in the field of sustainability. Hankammer, Kleer & Piller (2018) investigated whether using the sustainable option as the default option in a configurator led to more consumption of the sustainable option. This proved to be the case.

In this research the default option is not taken into account due to the scope limitation. This research focuses on the design of the order of alternative options and the presentation of options. This is elaborated on in more detail in the next subchapter.

2.3 Design of the online configurator

In this research, the choice architecture is examined in combination with a mass customization situation in which the use of internet is of large importance. While designing an online configurator, the architecture is very important for the choice that is made by the decision-makers.

The *number of alternatives* provided in the configurator is essential (Johnson et al., 2012). Two criteria are important when choosing the number of alternatives. First, when a choice architecture consist of more options, the chance of offering a preferred match to the consumer will increase (Johnson et al., 2012). Secondly, when a choice architecture consist of too many options, the consumer can feel a greater cognitive burden. The consumer has additional need for evaluating all the options given in the choice architecture (Johnson et al., 2012).

These two criteria should be in harmony with each other. Typically, the balance is according to Johnson et al., (2012) around four or five non-dominant alternative options. This gives the optimal balance between too many (which leads to the danger of overwhelming the consumers) and too few options (which can lead to context specific preferences). Context specific preferences are caused by the fact that excluding or including an option influences too much what is chosen by the consumer.

In addition to the number of alternatives, the presentation of the options in the configurator is also essential. An optimal structure is necessary to nudge the people in the desired direction of the choice architect. The options in the configurator can for example be displayed vertically (Meier & Robinson, 2004) or horizontally (Romero & Biswas, 2016).

When the configurator is designed vertically, the options that are given as high in the visual space are perceived as positive, whereas the options that are given low in the visual space are perceived as negative. The options high in the visual space are then chosen more (Meier & Robinson, 2004). However, horizontal displays are easier to process by decision-makers than vertical displays because the first matches with the binocular vision field and the dominant direction of eye movement (Deng, Kahn, Unnava & Lee, 2016). This allows for more efficient browsing for information with horizontal placement and leads to an easier processing of alternative options. Displaying the configurator vertically leads to the fact that the consumers cannot scan all options properly at the same time.

Therefore, this research focuses on displaying the configurator horizontally (lateral placement). More specifically this research, focuses mainly on the research of Romero & Biswas (2016). They investigated whether lateral displaying a healthy item to the left versus to the right of an unhealthy item influences both the choice and the volume of consumption by the consumers. They found that lateral displaying the healthy item left, led to more consumption and increased volume of the healthy item then when it was displayed to the right. Their research is based on the body-specificity theory (Casasanto & Chrysikou, 2011). The body-specificity theory states that people link the products that they desire to their dominant side and the undesirable products to their non-dominant side. In general, most individuals mentally associate unhealthy foods as favorable and therefore associate unhealthy food with their dominant side (Romero & Biswas, 2016).

In almost every culture the right side is associated with good and the left side is associated with bad things. For example, Muslims are not allowed to eat or drink with their left hands,

because only Satan uses his left hands for this (Casasanto & Chrysikou, 2011). Even in movies this phenomena can be found. The protagonists typically move from the left to the right side of the screen, while the antagonists move just the other way around (Renee, 2016).

The majority of the world's population is right-handed, approximately 90%. Therefore it can be argued that the majority of the world sees right as positive, because it is congruent with their dominant side.

The choice architecture in the research of Romero & Biswas (2016) is designed by following the natural mental representation of a person. When a mental representation is congruent with the design of the configurator, the ease of processing is better. Mental representation depends on some dimensions, like duration of time, number magnitude and spatial extent (Romero & Biswas, 2016 and Lourenco & Longo, 2010).

Romero & Biswas (2016) focused in their research primarily on the number magnitude. The healthy food option is perceived to be lighter on the stomach and less tasty than the unhealthy food option (Romero & Biswas, 2016). Thus, the number magnitude is smaller for the healthier food option, which is also more in line with the left side (negative). Therefore, putting the unhealthy option on the left is in line with the natural mental representation of a person.

Sustainability cannot be directly linked with number magnitude, but can be with the duration of time. According to Chae & Hoegg (2013), cultures that read from the right to the left, visualize the left-side more as the past and the right-side as the future. When a product is placed congruent with the natural mental representation timing of that product, consumers tend to have a more positive attitude towards that product.

In regard to this topic, a sustainable product is more fixated on improving the future. It is produced with a smaller ecological footprint and thus more aimed on improving the environment on the long term, ensuring a future for society.

In contrast, a non-sustainable product is often focused on improving the current situation and fulfilling the current needs of an individual. For example deciding between two different cars: one is a hybrid and the other is fitted with an internal combustion engine. The traditional car is cheaper to procure than the hybrid, although on the long term the ecological footprint for the traditional car is much higher. The consumer needs to decide whether it will improve their current or future situation.

Sustainable products are still more expensive than conventional products, according to an article from the Food and Agriculture Organization of the United Nations (n.d). Hence they are more focused on fulfilling future instead of current needs. The consequences of buying a sustainable product or not can accordingly have an influence on the present or the future state of a person. This can be related to the construal level theory from Trope & Liberman, 2010. The construal level theory indicates that people can think in an abstract or concrete way about a certain event or object. This will be further elaborated on in the next subchapter.

Furthermore, sustainable products are often seen as a positive thing by consumers, because they are generally concerned and feel a sense of responsibility towards the environment (Joshi & Rahman, 2015). Buying a sustainable product will make them feel better about themselves. According to Romero & Biswas (2016), the configurator would then be in line with the mental representation of the consumer when the sustainable product is placed to the right. This led to the following hypothesis:

H1. The sustainable option is chosen more, when it is laterally displayed to the right.

This research only examined the right side as the dominant side, as approximately 90% of the world is right-handed. However, to control for this, the respondents were asked what their dominant side is. This was included as a control variable.

This research also controlled for the general interest that people have for sustainability. Because of when an individual is already very interested in buying sustainable products, it is logical that they choose the most sustainable option of the alternative options. Furthermore, it is likely that consumers that are more conscious about sustainability, use sustainable information more than consumers with a low conscious of sustainability (Hankammer et al., 2018). Thus, they would be triggered more by words like eco-friendly, re-usable or natural. Lastly, the product involvement in the category from the online configurator (shoes) was added as a control variable. A higher product involvement, could lead to different results.

2.4 Construal Level Theory

This subchapter introduces the hypothesis for the second part of the research question. Thus, how the effect of lateral displaying a choice architecture on the consumption of sustainable products could differ for people with an abstract or concrete mindset?

To compose these hypotheses, the construal level theory was used, which describes the relationship between the psychological distance and whether people think in an abstract or

concrete manner. The psychological distance is subjective, it is the experience that an individual has about how close or far away an object or event is from the self, here and now (Trope & Liberman, 2010). People form abstract mental construal's of distal objects. Mental constructions are made due to predictions, memories and speculations. It is not the same as direct experiences. If an object or event is physically nearby, people think about it with a low-level construal (concrete) and when it is physically far away they think about it with a high-level construal (abstract).

High-level construal is relatively abstract, coherent and a superordinate mental representation when compared with low-level construal (Trope & Liberman, 2010). When a consumer moves from having a low-level construal to having a high-level construal, the object or event under consideration keeps the possession of the central features but it losses the possession of the more unique features. This means that a high-level construal is more abstract and decontextualized (Trope & Liberman, 2010).

This can be explained with an example: A consumer can think about biological free-range eggs with a low-level of construal, but moving to a more high-level construal representation the biological free-range eggs could be seen as just eggs. The biological feature and the free-range feature are omitted, but the central feature is still intact (the fact being an egg). What a consumer perceives as the central and the unique feature is very personal and thus subjective.

Psychological distance is focused on a variety of dimensions: temporal distance, social distance, hypothetical, and spatial distance. The dimension temporal distance is researched the most from all the dimensions. It is quite similar to the dimension of time duration mentioned by Chae & Hoegg (2013). Temporal distance investigated by Liberman & Trope (1998) states that situations in the distant future are construed on a higher level than near future situations (Liberman & Trope, 1998). Events that are closer in time are looked at more concretely than events that are more distant in time. The reason for this is that high-level construal's are more likely to remain the same than low-level construal's as the object or event gets closer by or farther away. High-level construal's are more general, and low-level construal has more details. The more details, the higher the chance that something can change.

As explained before by Chae & Hoegg (2013) state that the left is associated with the past and the right is associated with the future. This indicates when the sustainable option is placed more to the right, it is even placed more in line with the mental representation of people with high-level construal. Because people with high-construal level view events and objects more

in the further distance (future). Meanwhile low-level construal consumers will be less influenced by the effect or not influenced at all, because they view the object or event more closely in time (present). This leads to the following hypotheses:

H2a. A consumer with high-level construal will choose the sustainable option more when it is placed to the right.

H2b. A consumer with low-level construal will choose the sustainable option equal or less when it is placed to the right.

When all hypotheses (H1, H2a and H2b) can be accepted, this will contribute to very important information for marketers. This information is important, as marketers are able to manipulate the construal level of their customers before consumers make a decision in the online configurator. When a marketer can manipulate the construal levels of the consumers into high-level construal, those consumers are more likely to choose the sustainable option when it is placed to the right. Consequently, even more sustainable products are customized by the (high-level construal) consumers.



2.5 Conceptual model

Figure 2 represents the conceptual model of this research. All three hypotheses are assimilated in the model. When the sustainable option is placed to the right in the configurator, this positively influences the consumer's decision to choose the sustainable option. This effect will be stronger for consumer with high-level construal than for consumers with low-level construal. Control variables are added, as those can influence the consumer's choice for the sustainable option.

3. Methodology

This chapter will describe the methodology which was used to test the proposed hypotheses. The goal is to test the conceptual model and to accept or reject the proposed hypotheses. To test the hypothesized relationships, a quantitative method in the form of an experiment was used. In an experimental research specific variables are manipulated, to observe whether this manipulation has an effect on other variables (Field, 2013).

This experiment was organized online for multiple reasons. First off, it was easier to get access to a larger number of participants. Secondly, the findings were better generalizable as a larger number of participants could be obtained. Thirdly, it was less costly and time consuming. This was convenient, as the time scope and budget of this research was limited. Fourth and final, it increased the overall accessibility of this research (Reips, 2002).

For this experiment the participants were divided in four equal groups. These groups were compared in different Independent Samples t-test:

The first group was manipulated with a low construal level and the most sustainable option was shown to the left.

The second group was manipulated with a low construal level and the most sustainable option was shown to the right.

The third group was manipulated with a high construal level and the most sustainable option was shown to the left.

The fourth group was manipulated with a high construal level and the most sustainable option was shown to the right.

To test the hypotheses, the outcome of the four manipulation groups needed to be compared. As for every individual hypothesis only two groups were compared, I made the decision to use Independent Samples t-test. The dependent variable in this test is the 'sustainable choice score', which is the number of times a participant choses the sustainable option.

To test whether the outcome of the hypotheses was still the same when adding the control variables, an ANCOVA (Analysis of Covariates) test was conducted while adding: Age, Gender, Level of education, dominantly left or right handed, Language survey taken, Interest in sustainability and Product involvement.

The online experiment was carried out with a program named Qualtrics, a research software system which can collect data from different participants online. The participants were provided with a link which directed them immediately to the online survey. The choice of using Qualtrics was made due to the fact that it is a convenient software system that was provided by the Radboud University. The data from Qualtrics can directly be accessed with SPSS Statics. SPSS Statics is a statistical computer program that can be used to conduct the Independent Samples t-test and the ANCOVA test.

The pre-tests and the main experiment were first written in English and with a back translation process translated in Dutch. An outside person whom had no knowledge about the original content of the experiment translated the Dutch version back to the English version. Only some small discrepancies were found, and we unanimously decided to change that. This back translation process increased the quality of the translated content and decreases the chance of errors. Only the English version of the pre-tests and the main experiment are shown in appendix 1, 2 and 3. Dutch versions can be obtained by sending an email to tirza.speekenbrink@student.ru.nl.

3.1 Pre-test and data collection

3.1.1 Pre-test

In total two pre-tests were conducted. The first was necessary as it was important that the respondents understood the questions, along with that the questions should ask for information that the participant has. Without, it would have been possible that people might misunderstand the questions in the main experiment or they might misunderstand the main experiment as a whole (Collins, 2003). As this was an online experiment, the participants were not able to ask for any information or directions when they perceived any inaudibility during their participation. Therefore, it was essential that the experiment was well organized and that the concept and questions were understood by the participants. When finished, the participants were asked to give feedback on the questions in the questionnaire.

Additionally, the manipulation treatment of Freitas, Gollwitzer, & Trope (2004) for the level of construal was tested in the first pre-test. This manipulation treatment will be explained in more detail in chapter 3.2. To test this the research from Slepian, Masicampo & Ambady, (2015) was used. That research uses ten items from the Behavioral Identification form (BIF). The participant needed to make a decision out of two types of conceptions for every item. One conception was the abstract answer and the other conception was the concrete answer.

The second pre-test was conducted to ensure that participants had the same opinion and view about the most sustainable option as was intended beforehand. As the sustainability from some options could differ depending on the choice a person makes. In other words, the sustainability of some options were made based on assumptions. For example, a pick-up point is very sustainable as people use their bicycle and/or combine it with a trip to the supermarket (EY, 2014).

The optimal number of participants in a pre-test is approximate 30 according to Perneger, Courvoisier, Hudelson & Gayet-Ageron, (2015), however that specific article also state that it is more common to use around 10 to 15 participants. The two pre-tests had 22 and 33 participants, respectively.

3.1.1 Data collection

For the main experiment, an absolute minimum sample size of 20 participants per group was necessary (Hair, Black, Babin & Anderson, 2014). In total 147 participants filled in the main experiment, which is more than the minimum sample size of 80. This will be elaborated more in chapter 4.

When comparing the means of different groups, homogeneity is an assumption. This said, the variance of the collected outcome variables should be the same in each of these groups (Field, 2013, p.149). To improve the chances this was achieved, the data should have been collected from a homogenous groups. However, due to the time limit of this research and the required sample size it was necessary that also other participants were approached to join the online experiment (a convenience sample).

To test for the assumption of homogeneity of group variances, the Levene's test was used. This tests the null hypothesis that the variances of the groups are the same. If this was insignificant, then variances between the groups are significantly equal and the Independent Samples t-test can be used. However, when the outcome was significant, the variances between the groups were unequal. The Independent Samples t-test also provides data for this case (Hair et al., 2014).

3.2 Manipulating the independent variables

3.2.1 Lateral displaying the sustainable option

Four different experiments were made for the four different groups. Qualtrics randomly assigned a participant in one of the four groups. When a participant was assigned to the first or third group the most sustainable option in the online configurator was displayed at the left.

When a participant was assigned to the second or fourth group, the most sustainable option in the online configurator was displayed at the right.

3.2.2 Construal level

The construal level of the participants were manipulated before they started making decisions online, priming manipulation developed by Freitas et al., 2004 was used for this experiment. This is a traditional method of using *how* versus *why* questions to manipulate the level of construal of the participants. This has demonstrated that considering *why* questions are effective in priming high-level, and considering *how* questions are effective in priming low-level construal's.

The participants in the last two groups (high construal) were primed by considering questions related to *why* they engaged in a specific action (which abstracted the superordinate concerns which motivated a specific behavior). In the first two groups (low construal) they were primed by considering questions related to *how* they accomplished a certain action (specifying superordinate consideration of implementing a specific behavior) (Fujita, Trope, Liberman & Levin-Sagi, 2006).

When participants were assigned to the abstract condition, thus the high-level construal, they were given a specific passage. This passage and following statement is partly obtained from Freitas et al., (2004), only a bit modified to make it more suitable for the product category chosen for the online configurator. This manipulation method will be tested in the first pretest and can be found in appendix 1.

When participants were finished reading this passage, they were given the following statement: "*Improve and maintain health*". They were asked: "*Why do you want to improve and maintain health*?" If they answered for example: "*to have a successful life*". Then they were asked: "*Why do you want to have a successful life*?". They received four follow-up questions. Thus, in total the participant filled in four answers during the manipulation. When finished, they should have been manipulated with a high-level construal.

When participants were assigned to the concrete condition, thus the low-level construal, they were given a different passage, which can also be found in appendix 1. When the participants were finished reading that passage, they were given the following statement: "*Improve and maintain health*". They were asked: "*How do you want to improve and maintain health*?" If they answered for example: "to go as often as possible to the gym?". Then they were are asked:" How do you get as often as possible to the gym?". They received a follow up

question four times. So in total the participant filled in four answers, just like in the first manipulation. Again when finished, they made their decisions in the online configurator.

3.3 Content description.

This experiment created a buying setting for an online configurator. The product category which was used in this experiment were customized shoes. The decision for shoes as a product category was made because footwear is often used in mass customization. Furthermore, a lot of shoe brands (e.g. Nike and Adidas) have started to become interested in making sustainable shoes and packaging. This was useful for this experiment, as shoe brands already have a lot of different materials that they currently use in their shoe lines that differ in the degree of sustainability. Moreover, shoe brands can use the findings of this research to increase the sales of their sustainable shoes.

Three things are in particular important for a customer when customizing a pair of shoes: 1, the aesthetics; 2, the fitting requirements and 3, the functional requirements (Daaboul, Novak, Le Duigou, Da Cunha & Bernard, 2014).

For every decision that the participant made, three number of options were shown. However, Johnsen et al., (2012) explains that in an online configurator the optimal number of alternative options is four or five. However, this is too much to see properly on a mobile device. Therefore, the decision was made to show three. One exception is the choice of color, in that case nine colors were available which made the configurator feel more realistic. Also they were given basic information about each option. Some incentives like reusability, sustainability, natural and eco-friendly were given for the most sustainable option. This increases the chance that people would indeed experience the most sustainable option as the actual sustainable option.

The configurator was designed with decoys next to the genuine options. These are not necessarily sustainable and were only provided to masque the true viable options when it comes to a sustainable choice. It is important that the participant's choice is made in an honest way and represents their actual behavior. They had to customize the shoes by the following steps:

- 1. Upper shoe material (true option)
- 2. Color of the upper shoe material (decoy option)
- 3. Inner shoe material (true option)

- 4. Shoe sole material (true option)
- 5. Shoe lace material (decoy option)
- 6. Shoe lace color (decoy option)
- 7. Packaging (true option)
- 8. Delivery (true option)

Having multiple options, even among the 'true options' decreases the impact of participant bias – which occurs when participants can guess what I am looking for, and therefore they answer or behave in a different way (Farnsworth, 2016). Thus only when the participant choose the most sustainable option, when it was placed to the right, it will count as a successful nudge in this experiment.

After the participants had made their decision in the online configurator, they were asked to answer some questions to determine their general interest in sustainability and their product involvement, as well as their dominant side. This decreases the impact of participant bias. The questionnaire of the experiment is included in Appendix 3. All the images used in the online configurator are stock pictures obtained or composed from *Shutterstock.com*.

3.3.1. True options for the online configurator

The five 'true options' in the customized online configurator are described in this chapter.



True option 1 - Upper shoe material

Option 1 – Artificial leather

Artificial leather, also called synthetic leather is a material designed to substitute or replace leather in clothing, footwear and other uses where a leather-type material is desired. It is marketed under a variety of names including 'leatherette, PU leather or pleather' (Shaeffer, 2003). The main reason why artificial leathers can be seen as the least sustainable option is due to the usage of polyvinyl carbonates (PVC). PVC is derived from petroleum and requires large amounts of energy to produce thus making it reliant on non-renewable resources. During production, byproducts such as dioxins are produced which are toxic to humans and animals. Dioxins remain in the environment for a long time after production and when the

manufactured PVC ends up in a landfill it does not decompose like genuine leather and it can release harmful chemicals into the earth (EPA, n.d).

Option 2 – Bonded leather

Bonded leather, also called blended leather is a material which contains polyurethanes as well as animal hide. It often consist out of a layered structure of a fiber covered with a layer of shredded leather fibers mixed with a polyurethane binder that is finished with a leather-like top structure. It can be viewed as somewhat in the middle between the other two options when it comes to sustainability; it uses leftover leather fibers, has no natural defects and is highly cost efficient and reduces landfill waste. On the downside it is nearly impossible to repair and is nearly not as durable as genuine leather, shortening its potential lifespan and as a result contribute to waste (Combs & Sloan, 2012).

Option 3 – Natural leather (from sustainable sources)

Natural leather is a durable and flexible material obtained from tanning animal hides and skins. The level of sustainability of natural leather depends fully on the production method, it can either be the best or worst out of all three options. For this research a modern production method was chosen which lowers the carbon footprint of the cattle rearing, uses biodegradable chemicals for the tanning process and filters any air pollution from the transformation process. This is indicated to the participants of the experiment by the fact that the natural leather comes from sustainable sources. Natural leather can last for decades when properly maintained, be repaired easily and when ended up on a landfill it can fully biodegrade without releasing dangerous materials in the environment.

True option 2 - Inner shoe material



Option 1 – Microfiber (plastic) lining

Microfiber lining is made from synthetic fibers that have a diameter of less than $10\mu m$, often made from polyesters or polypropylene. The same as most plastics, they share the same negative effects when it comes to sustainability. Made from petroleum, requiring large amounts of energy to synthesize and contributing to plastic waste at the end of their lifecycles the microfiber scores lowest when it comes to sustainability (Nishioi, Ogata & Tsujiyama, 1994).

Option 2 – Textile lining

Textile lining can be made from a variety of materials, primarily natural fibers such as cotton or linen. The main advantage is that it can be sourced from bio-based resources. Cotton industry tends to be quite sustainable when produced in areas where large amounts of water can be used without effecting the local environment or populace. The other main benefit of natural textiles is that the material is 100% biodegradable at the end its lifecycle.

Option 2 – leather (from sustainable sources) lining

Leather lining is different to when it is used as an outer material. The main advantage here is that it can be procured from pieces of leather with less aesthetic features such as pores of other impurities, which otherwise would have gone to waste. Also, less treatment of the leather is needed as the lining tends to stay quite soft during usage. Furthermore, this leather is also retrieved from sustainable sources and uses therefore the same modern production method as explained before in the description for outer shoe material. The final benefit is that leather has a long lifespan making it very durable and is in that case the most sustainable option presented.



Option 1 – Leather soles

Leather which is not obtained from sustainable sources has quite a negative environmental influence. When it is not explicitly stated that the leather is from sustainable sources, one can expect that it is produced by conventional tanneries ($\pm 80\%$). Conventional tanning is a process that uses chromium and produces a highly toxic waste product and requires large amounts of water. This in turn pollutes water sources and this harms the people that rely on those water sources (Edwards, 2016) (Sundar, Ramesh, Rao, Saravanan, Sridharnat & Muralidharan, 2001).

Option 2 -Synthetic soles

Synthetic soles are very common in today's world. Mostly due to the fact that this material is very resilient against chemical and oily residue found on working surfaces. It is also relatively

cheap to produce but has the same downside as found in artificial leather, namely the fact it is made from petroleum, with all negative aspects as stated before. Therefore, this option will be viewed as the least sustainable of the three.

Option 3 – All rubber soles made from natural sources

Shoe soles made from natural rubber are produced from the natural polymer that is found in the latex procured from the rubber tree. The main benefit of rubber is the flexibility and elasticity of the material making it a great material for use in shoe soles. The added benefit is that rubber is procured from a natural, sustainable source and when treated properly can last for decades, reducing waste on the long term. When cultivation happens on a sustainable manner, it can create habitats for various fauna. Also, rubber trees can absorb and store CO2 (Haustermann, n.d.). For these reasons natural rubber will be viewed as the most sustainable option.

True option 4 - Shoe packaging

When the participants were finished designing the shoe, he/she had to choose the way it was packaged. Again three options were provided rated from least to most sustainable. In theory all packaging can be reused to some extent, but some options are more applicable then others.



Option 1 – Luxurious gift box

Some consumers who adore shoes often also care about the way their shoes are packaged and stored. For them, many types of luxurious boxes are designed which have a very aesthetic appeal and provide an extra touch to the shoe overall. It will come as no surprise that option 1 is the least sustainable option. These boxes often combine a large number of materials such as high-density cardboard, paper, plastics, fibers and dyes. These do not only require a substantial amount of resources and energy to be produced, but it will also contribute to the amount of waste over time.

Option 2 – Cardboard box

Most shoes sold around the world are packaged in 'standard' shoe boxes. Of course, there are many types of shoe boxes and the way they are produced, ranging from simple cardboard structures to more expensive dyed and lined variants. For this research a simple cardboard box is chosen. This is the perfect solution for a consumer who cares only about the shoes and wants them delivered in a robust, simple package and does not care about what happens to the box after its arrival. The main benefit of a simple cardboard box is that it can be produced from recycled material and it can be fully recycled again after it served its usefulness. This recycle method is however quite energy intensive. Therefore it will be viewed in the middle of the three options.

Option 3 – Reusable packaging

Over the last few years an increasing number of sustainable and reusable types of packaging have been invented (think of the 'clever little bag' from Puma for instance). Creating a reusable type of packaging is often easier than the industry thinks and can come in many shapes, forms or sizes. For this research a durable woven bag made from cotton is chosen. After the bag served its main purpose, which is protecting the shoes, it can be reused to a number of ways such as bagging groceries. This in turn will lead to less usage of plastic throw-away bags. For this research we will assume this, making it the most sustainable option out of the three.

True option 5. Shipment & delivery

The last step in the configurator was the choice of shipment. Instead of focusing on the aspect of time (how soon the product will be delivered), this research focused on the method of shipment. This is because delivery time would be a great incentive to choose the option with the shortest delivery time.



Option 1 – Personal home delivery

This option, personal home delivery, is often indicated as 'last-mile delivery'. This entails that from a local distribution point a petrol/diesel driven delivery van is dispatched with packages intended to be delivered within a set radius. These vans or trucks only drive short distances

between each delivery and produce a lot of noise and air pollution because of their inefficient driving and frequent stops. It is however the most used delivery method, because of easiness for the recipient. Because of the increased amount of purchases made online that have to be delivered by these trucks, deliveries often come at times when the purchaser is not at home. More and more often the standard option to deliver the package to neighbors is not desired anymore. This leads to the situation when the recipient is not at home and the deliverer takes the package back to the local distribution point, resulting in a wasted trip. Nowadays, people become ever more isolated from their neighbors and buying ever more expensive items online, so it can be a viable argument to only have the package delivered to you in person (Thum, 2016). Nevertheless, this option is by far the least sustainable out of the three.

Option 2 – Home delivery with neighbor option

Option two is basically the same as option one, with the added benefit of when the recipient is not at home the package may be dropped off with neighbors or left in a place somewhere around the house. This results in the fact that essentially every trip made by these 'last-mile' delivery vans at least have no wasted trips. Trips can therefore be planned more efficient without having to take into account whether the recipient is at home or not. Still, this last-mile delivery comes with the downsides as mentioned in option one, making it a still lesssustainable option, but less so then option one.

Option 3 – Delivery to local pickup point

Before a local delivery van or truck is dispatched for the 'last-mile' delivery, a larger truck delivers a bulk of packages to a local distribution point. This first delivery can be made in large volumes during each hour of the day and is therefore a viable way to get the packages from the large distribution center to a local point. Nowadays, these local distribution points are more often combined with a pick-up point often at a convenient location such as a supermarket. This allows the recipient to pick up their packages on the way back from work or at a moment of their choosing. Often this pickup is combined with a movement from A to B that the recipient had to make in any case. This results in no trips wasted or extra trips at all. Therefore option three is seen as the most sustainable of them all.

3.3.2. Decoy options for the online configurator

The three decoy options were, as stated earlier, only configured to present a more realistic configurator. These options were less viable to *'greenification'* then the five options described earlier. The participants were given the following three additional options:



Decoy option 1 and 2 - Outer material color & shoelace color

Participants had to choose any of the nine colors as presented in the palate above. In reality some colors may be slightly more sustainable to produce then others, however that in turn also depends on the material that was used. Therefore, the option color is chosen as a decoy option.

Decoy option 3 - Shoelace material



As for the shoelace the participants were again presented with three options. The three presented here above are very common in today's shoes industry. Because of the way most of these shoelaces are produced, either from scraps/leftover materials, it would be hard to define what option would be the most sustainable. However, the material, especially in combination with color is an important feature of the customized finished shoe. Therefore, shoelaces were presented as a decoy option.

3.4 Control variables

Right or left handed

This control variable was used to test which side is the dominant side of the participant. Because H1 stated: "The sustainable option is chosen more, when it is lateral displayed to the right", is only valid for participants with the right side as their dominant side. Therefore, the experiment controlled for this variable.

Interest in sustainability

It can be expected that when participants were generally interested in sustainability, the decision to choose the most sustainable option will be much more likely. Therefore, this

variable is also added as a control variable. To measure this interest the individual consciousness for sustainable consumption (CfSC) was used. This control variable was measured with a 7-point Likert Scale with 8 questions made by Hankammer et al., (2018), inspired by Balderjahn et al., (2013). The first four questions asked about the person stands for and the last four question about the importance of sustainability for a person. These 8 questions combined measured the interest of people in sustainability.

This concept measured the degree of individual consciousness for the sustainable consumption. A higher level of CfSC presumes a higher level of knowledge about environmental impacts of products (Hankammer et al., 2018).

Product involvement

Product involvement is measured with a 7-point Likert scale with three questions. These questions are obtained from Hankammer et al., (2018) inspired by Zaichkowsky (1985).

Demographics

The participants are asked for their age, gender and level of education.

Language survey taken

Participants were able to choose the language that they preferred for the questionnaire. As explained before, a back-translation process was used to translate the original survey from English to Dutch. However, it is still possible that participants interpreted the questions differently in another language. Therefore, this variable was taken into account as a control variable.

3.5 Research ethics

During this experiment, some decisions were made. This section will describe how the ethics are taken into account during these decisions. This experiment used an online platform instead of a laboratory setting, which can raise three aspects of ethical concerns (Benbunan-Fich, 2017). The first is the absence of user consent to participate in the research, the second is the presence of intentional deception and the last is the lack of protection for the participants.

The first aspect was accounted for, as participants voluntarily participated in the online experiment. They were targeted via the snowball technique and via surveyswap (see chapter 4). When the participants chose to participate in the online experiment, they always had the option to opt-out. Their data was only recorded when they had completed the whole experiment.

The second aspect was also accounted for, since the participants were able to contact me via email to obtain the results from this study and are still able to download this research from the Scriptierepository from the Radboud University. During the experiment the participants were not allowed to know the purpose of the experiment, because of the risk that other potential participants became aware of the purpose. This could have led to biased results.

The last aspect is the complete lack of protection for the participants. This is also accounted for, as the data is treated with full anonymity. That is to say, participants did not have to fill in their name, email or other personal information.

The results of this research can be used in a very ethical way for both the population of the world and a lot of organizations. When all hypotheses can be accepted, this would mean that the design of the choice architecture can be used to increase the sales of sustainable products. A higher market share of sustainable products is necessary to ensure a future for next generation. At the moment the market share of sustainable products is too low, due to inefficient marketing and consumers distrust. Additionally, when H2a/b can be accepted, choice architecture can manipulate the mindset of the consumers to optimize the choice architecture. Manipulation of consumers can be seen as unethical, however this serves a greater good eventually (a better and healthier environment for everyone).

4. Results

This chapter presents the results of the experiments for this study. First of all, the results of the pre-tests will be given. Secondly, an overview of the analyzed data is given, to confirm or reject the proposed hypotheses. Lastly, the control variables were tested. This last section was not conducted to answer the hypotheses directly, as I believe that is was interesting to test whether the control variables had a significant influence on the results. This could positively influence the implications of this research.

4.1 Pre-test

Before having collected the participants for the main experiment, two pre-tests were conducted.

4.1.1 Pre-test: Manipulation check

A total of 22 people filled in the first pre-test whom were mostly my acquaintances. Half received the manipulation for low-construal and the other half for high-construal. In the last block of the questionnaire, participants were asked to comment on the questions. A few indicated that a 7-point Likert scale was hard to navigate on a mobile device. To ensure that enough participants would fill in the main experiment, I decided to reduce the Likert scale in the main experiment to a 5-point scale.

Furthermore, some indicated that two blocks were too much alike, even stating that they felt like they filled in the same set of questions twice. These were the two blocks that contained the questions for controlling for the interest for sustainability of the participants. The first block about the statement: *I buy a product only if I believe it...* and the other block asked about the statement: *How important is it for you personally that a product.* Due to this observation and that the main experiment was already quite long, I decided to delete the second block of questions. I found one block sufficient to control for the degree of interest for sustainability.

Additionally, it was found unpleasant that there was no 'previous button'. Participants indicated they sometimes wanted to see the previous question or answer. Therefore, this was added in the main experiment.

The other main purpose of this pre-test was to test the manipulation method for the construal level. The manipulation check originates from Slepian, Masicampo & Ambady, (2015) inspired by Vallacher & Wegner, (1987). That research used ten items from the Behavioral Identification form (BIF). The participant needed to make a decision from two types of

different conceptions for every item. The concrete option was recoded with a value of 1, and the abstract option with a value of 2. Thus, when the mean of the average BIF scores of the participants manipulated with low-construal level was significantly closer to 1, the manipulation had succeeded. Similar, when the mean of the average BIF scores of the participants manipulated with high-construal level was significantly closer to 2, it had also succeeded. Looking at the mean scores of the two groups (M=1.50, SE=.083 and M=1.75, SE=.056), the second group tended a bit more into a high-construal level score whilst the first group was exactly in between.

Levene's test was found insignificant (F=.865, p=.363). This indicated that the group variances were equal. Furthermore, the dependent variable (average BIF score of the participants) was normally distributed (see figure 3 in appendix 4.1). Therefore, it was valid to conduct an Independent Samples t-test. This choice was made because that test is used when ''two experimental conditions and different participants were assigned to each condition'' (Field, 2013, p. 364). The independent variable (the grouping variable) were the two groups manipulated with a different construal level.

The Independent Samples t-test was significant p=.020, indicating that there were indeed significant differences between the two different groups, thus between the two levels of construal. In conclusion the group which was manipulated with a low construal level, answered in the questionnaire significantly more concrete than the group which was manipulated with a high construal level. Therefore, the manipulation for the construal level of the participants in the pre-test was successful. Consequently, no further changes were made for the main experiment concerning the manipulation method.

4.1.2 Pre-test: sustainability

A second pre-test was conducted to test what option for every aspect of customizing the shoe was seen by the participants as the most sustainable option. The options were laterally placed at random in the configurator to decrease the chance of biased responses. I gathered the participants for this pre-test again in my direct environment as well via surveyswap. I noticed in the first pre-test that gathering respondents only in my direct environment would not be sufficient. Surveyswap is a website were researchers fill in each other's surveys to gain more participants. In total 33 participants filled in the second pre-test. I will provide below the percentage of the participants who choose the sustainable options. A complete overview of the results of this pre-test can be found in appendix 4.2.

- For the first aspect: Outer Shoe material, option 3 (leather from sustainable sources) was seen as the most sustainable option. In total 24 participants chose this option (72.7%).
- For the second aspect: Inner Shoe material, option 1 (leather from sustainable sources) was seen as the most sustainable option. In total 20 participants chose this option (60.6%).
- For the third aspect: Shoe Sole material, option 1 (all natural rubber) was seen as the most sustainable option. In total 23 participants chose this option (69.7%).
- For the fourth aspect: Packaging method, option 3 (re-usable packaging) was seen as the most sustainable option. In total 26 participants chose this option (78.8%).
- For the last aspect: Shipping method, option 1 (pick-up point (2km radius)) was seen as the most sustainable option. In total 25 participants chose this option (75.8%).

These results were all in line with chapter three. Thus, all the options that were seen as most sustainable by me, were also considered as most sustainable by most of the participants. Therefore, no changes had to be made in the lay-out or in the choice of language in the customization tool.

4.2 Main experiment

This subchapter will describe the results of the main experiment of this research. In total 214 people clicked on the link to start the experiment. Of these, 153 finished the experiment. Data from six participants were deleted, as their answers on the *how* and *why* questions were considered unusable. The participants that took a long time for their questionnaire were not deleted, as it was possible that participants clicked on the Qualtrics link to see what the questionnaire was about and then continued at a later time. I heard from several participants that they did this. In total 147 valid results were used in the main experiment. The link of the experiment was distributed and to gather more participants, I used the snowball technique in combination with the website of Surveyswap.

4.2.1 Manipulation check

For the main experiment, the participants were divided in four groups as described in chapter 3. The groups were slightly unequal in sample size, as some participants clicked on the link but not finished it. However, the difference in group sizes was not extreme (see table 7 in appendix 5). Moreover, Levene's test was used to test the equality of variance between the groups. The Independent Sample t-test and the ANCOVA test (Analysis of Covariance) had

options to control for inequality of variance and was therefore not seen as a problem. The data of the participants of the main experiment can be found in table 7 in appendix 5.

The method for the manipulation check was the same as used in the pre-test. Looking at the mean scores of the groups whom received the different manipulation treatment (M=1.51, SE=.024 and M=1.53, SE=.019), the second group was a bit more manipulated with a high-level construal. However, this difference in mean scores was a lot smaller than before in the pre-test. To test whether this small difference was significant, an Independent Samples t-test was used with as dependent variable the average manipulation level of the participants and as independent variable the two groups (group 1: LC left and LC right and group 2: HC left and HC right). Levene's test was significant (F=1.057, p=.306), which indicated equal group variances. Furthermore, the dependent variable (average BIF score) was normally distributed (See figure 3 in appendix 4.1). This indicated that it was allowed to conduct an Independent Samples t-test. The test was insignificant with p=.656. This means that the two groups did not differ significantly in the choices they made for their average BIF scores. Thus, the manipulation of the construal level in the main experiment was deemed unsuccessful.

4.2.2 Testing the hypotheses

To test the first hypothesis whether the most sustainable option was indeed chosen more often on the right than on the left position, two separate tables (8 and 9) are formed in appendix 5.

4.2.2.1 Hypothesis 1.

In total 77 participants filled in the online configurator when the most sustainable option was placed on the left. The other 70 filled in the customization tool when it was placed on the right.

H1. The sustainable option is chosen more, when it is laterally displayed to the right.

To confirm or reject this hypothesis, no distinction was made between the two construal levels (High and low-construal level) as this was a general hypothesis. Therefore, there were only two groups for this hypothesis: groups 1 (LC, left) and 3 (HC, left) formed a new group 1. Groups 2 (LC, right) and 4 (HC, right) formed a new group 2.

First of all, the choices that the participants had made in the configurator were recoded. When the participant chose the sustainable option this was coded as a 1, and when the participant chose a non-sustainable option this was coded with a 0. These scores were summed up for all five true options (outer, inner and sole material, packaging method plus shipment and delivery), and not so for the decoy options. When the sustainable option was placed to the left, participants chose this option on average 2.51 times. When the sustainable option was placed to the right, the participants chose it on average 2.24 times (M=2.51, SE=.132 and M=2.24, SE=.147). An Independent Samples t-test was necessary to ensure that this difference was significant.

To have conducted such a test, some assumptions had to be met again. No outliers were found in the dataset. Furthermore, the dependent variable (choice for the sustainable option) was normally distributed, as already tested before in the manipulation check (see figure 4, appendix 5). Levene's test was insignificant (F=.252, p=.617), which indicated equal group variances. So, the assumption concerning equal variance across groups was also met. Therefore, the data was suitable for conducting a t-test. The t-test was insignificant with a value of p=.183 (see table 10 in appendix 5). So, it cannot be stated that the sustainable option was chosen more when it was placed on the right side. Hypothesis 1 can therefore be rejected.

4.2.2.2 Hypotheses 2a & 2b

The second two hypotheses could not be fully tested, since the manipulation for high and lowlevel construal had failed. Therefore, this result should be read with some caution. However, these tests were conducted as basis for further research and to rule out no differences between the groups were found. Further research could replicate these tests when their groups are correctly manipulated with a different construal level. The second original hypothesis was divided into two parts. The first part focused on the two groups whom received the manipulation treatment for the high construal level and the second for the low construal level.

H2a. A consumer with high-level construal will choose the sustainable option more when it is placed to the right.

H2b. A consumer with low-level construal will choose the sustainable option equal or less when it is placed to the right.

First, an Independent Samples t-test was conducted for the two groups (sustainable option placed right vs. left) whom received the manipulation for the high construal level. This was necessary to test the first part of the hypothesis (H2a.). The dependent variable was the choice for the sustainable option of the participants. Secondly, an Independent Samples t-test was conducted for the two groups (sustainable option placed right vs. left) whom received the manipulation for the low construal level.
For the first Independent Samples t-test, Levene's test was insignificant (p=.071) indicating that equal variances were assumed. Furthermore, the dependent variable was again normally distributed as tested before. On average the participants that received the manipulation for the high-level construal chose the sustainable option more when it was placed to the left (M=2.48, SE=.164), than when the sustainable option was placed to the right (M=1.92, SE=.234). However, the t-test was not significant with an alpha level of 5%, although with an alpha level of 10%, the effect was significant. However, with an alpha level of 10% the chance of a type one error is higher. The significance level of the t-test is p=.051. Therefore, it could be stated that with an alpha level of 10% the participants manipulated with a high construal level chose the most sustainable option more when it was placed to the left. Thus, H2a can be rejected with an alpha level of 10%.

For the second Independent Samples t-test Levene's test was significant (p=.047). Therefore, equal variances were not assumed. On average, participants whom were manipulated with a low construal level chose the sustainable option when it was placed to the right more (M=2.59, SE=0.159), than when it was placed to the left (M=2.54, SE=0.211). However, this result was insignificant with a value of p=0.859. Therefore, H2b is also rejected.

4.2.2.3 Extra test

As the previous hypotheses were all rejected, I found it interesting to see whether there was a significant difference between the two groups whom received the different manipulation treatment in relation to their choice for the most sustainable option. This test was purely conducted as an example for further research which can reply and amplify this. Since the manipulation treatment did not succeed in this research, any potential differences between groups were likely caused by other factors.

When it came to investing these differences, two new Independent Samples t-tests were conducted for the two groups (HC level and LC level) when the sustainable option was placed to the right and another Independent Samples t-test was conducted for the two groups (HC level and LC level) when the sustainable option was placed to the left.

But first the assumptions had to be checked again. Levene's test was significant (p=0,018) for the first test. Therefore, equal variances were not assumed. The Independent Samples t-test also provided data when equal variances are not assumed, which was the case for this test. On average, participants in the group that received the manipulation for the low construal level chose the sustainable option when placed to the right more (M=2.59, SE=0.159), than the

group whom received the manipulation for the high construal level (M=1.92, SE=0.234). This difference was significant with t(68)=2,378, p=0.021. This was converted into the correlation coefficient using the equation: $r = \sqrt{\frac{t^2}{t^2 + df}}$. Converting this t-value into the r-value becomes $\sqrt{\frac{2.378^2}{2.378^2+68}}$ =0.28. This is around 0.3, which indicated a medium effect (Field, 2013, p.376). From this r-value, Cohen's d was calculated. The equation used to calculate Cohen's d is: $d = \frac{M1-M2}{SP \ Pooled} \gg \frac{2.59-1.92}{1.188} = 0.56$. This indicated a medium to large effect size (Field, 2013, p.80). This meant that when the most sustainable option was placed to the right, the participants whom received the manipulation for the low construal level increasingly chose the sustainable option with 0.56 standard deviations more than the participants that received the manipulated for the high construal level. This indicated that the participants that received the *how questions* chose the sustainable option more when it was placed to the right than the participants whom received the why questions. This was not in line with was expected beforehand, as it was expected that consumers whom received the why questions in the manipulation would have chosen the sustainable option more when it was placed to the right. That the results were in contrast of the hypotheses is highly likely to be on account on the failed manipulation treatment.

The second Independent Samples t-test was conducted for the two groups (that received manipulation treatment for HC and LC level) when the sustainable option was placed to the left. But again, the assumptions were checked; Levene's test was insignificant (p=0.117) for this second test. Therefore, equal variances were assumed. On average, participants that were manipulated with a low construal level chose the sustainable option when placed to the left more (M=2.54, SE=0.211), than those manipulated with a high construal level (M=2.48, SE=0.164). This difference was however insignificant with *t*(75)=0.247 p=0.805. Therefore, the effect size was not calculated. Because this difference was insignificant, it could be stated that there were no significant difference in the choice for the sustainable option between the groups whom received the different manipulation treatments when the sustainable option was placed to the left.

4.2.3 Control variables

In total, there were seven control variables (age, gender, level of education, left or right handed, survey language, interest in sustainability and product involvement). Two control variables (interest in sustainability and product involvement) were composed out of multiple items. To compose the two latent variables, a factor analysis was the right test. A factor analysis was used because that analysis was necessary *'to construct a questionnaire to measure an underlying variable and to reduce a data set to a more manageable size while retaining as much of the original information as possible''* (Field, 2013, p.666). More specifically, a common factor analysis was used, because that test *'attempt to achieve parsimony by explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory constructs''* (Field, 2013, p.667). Furthermore, this explanatory factor analysis was used, to test whether the items indeed group together in a specific factor. These composed factors were used as a covariate in the ANCOVA.

4.2.3.1 Assumptions factor analysis.

To conduct a common factor analysis, a few assumption were met beforehand. First off, the data set contained no outliers. Secondly, an adequate sample size of 10-15 participants per item was required (Field, 2013). There were 7 items in total, which meant a required sample size between 70-105 participants. This dataset consisted of a sample size of 147 participants, which was sufficient. Furthermore, the items consisted out of interval variables, which was necessary for conducting a common factor analysis. VIF values were checked to test for multicollinearity among the variables. Values below 10 were acceptable (Field, 2013). This was the case for all the items, thus no multicollinearity was detected (see table 11 in appendix 5).

A Kaiser-Meyer-Olkin (KMO) above 0.5 and a significant Bartlett's Test of Sphericity indicated as well that the data set was suitable for conducting a factor analysis. KMO=.805 and Bartlett's Test of Sphericity was p=.000. As was expected, two factors were composed. No cross loadings or missing's were found. As a rotation method, the orthogonal rotation method (Varimax) was used. This was necessary in order to interpret the results more effective. The choice for Varimax was made as correlation between the factors was not expected beforehand. A factor loading was preferable when it was above 0.7. This was the case for all the factors, as shown in table 12 in appendix 5. Factor 1 was the composed control variable: interest in sustainability and factor 2 was the composed control variable: product involvement.

The internal consistency of the items were tested with the Cronbach's α . A value above .7 indicated a reliable scale (Field, 2013). The test showed that for the first component: *Interest in sustainability* Cronbach's α was .929. This was above .7, which indicated that these four items indeed measured the concept of interest in sustainability and that the internal

consistencies of these items were very high. For the second component: *Product Involvement* Cronbach's α was .768. This was still above .7, therefore the internal consistency of these three items were also high. The results of the reliability test are shown table 13 in appendix 5.

That said, the Cronbach's α of the first component slightly increased if one item would be deleted. When the item ...*Is made from recycled materials* was deleted, Cronbach's α would increase to .946. However, if one item from the four items in total was deleted, a large amount of crucial information was lost. As Cronbach's α was already far above the critical value of .7, I decided not to. For the second component: product involvement, Cronbach's α would not have increased if any items were deleted. The two new factors were composed out of the items and were added separately as a new variable in the ANCOVA analysis to test whether the control variables had a significant influence on the choice of the sustainable option.

4.2.3.2. Testing the control variables

Only the control variables that were continuously scaled could be added as covariates in the ANCOVA test. In total there were two control variables continuously scaled (Interest in sustainability and product involvement). The other five control variables were added as independent variables as they were categorically scaled. To conduct an ANCOVA, two important assumptions were checked beforehand: 1. Independence of the covariate and the treatment effect; and 2. Homogeneity of regression slopes (Field, 2013). To test for the assumption of independence of covariates, Field (2013) suggested that the experimental groups should not significantly differ on the covariate before running the one-way ANOVA.

The one-way ANOVA is similar as the Independent Samples t-test when it is conducted for only two groups. When there would have been more than two groups being tested at the same time, only then would the one-way ANOVA be different from a t-test. Therefore I decided to test this assumption using Independent Samples t-test, as that test was used in most of the results of this study.

I expected that there were no significant differences between the two groups regarding the covariates, because on average the means of both covariates for the different groups were very similar, as the participants were randomly assigned to one group. To check this assumption in more depth, two Independent Samples t-test were conducted with the different covariates each time as the dependent variable. The experimental groups used for this t-test were the two groups (one group where the sustainable option was placed to the right and the other group where the sustainable option was placed to the left). In the results for the covariates no

distinction was made between high and low-construal level, as that manipulation had failed and H2a/b was rejected. See table 14 in appendix 5 for the results. None of the covariates were significant; therefore this assumption was met for both covariates.

To test the second assumption: Homogeneity of regression slopes, a new model was specified that included the interaction between both the covariates and the independent variable (choice for sustainable option). The main effects were also included to make sure that the interaction term was tested while controlling for the main effects. If this interaction effect was insignificant, then the assumption of homogeneity of regression slopes was met (Field, 2013). All the interaction effects were found insignificant (see table 15 in appendix 5) and it was therefore allowed to use both covariates in the ANCOVA model.

The other control variables were categorically scaled. Only the control variable: level of education needed to be recoded before adding this control variable as independent variable in the ANCOVA. Additionally, three people filled in that their level of education was not included in the questionnaire and answered the option "other". The data of these three participants were deleted for this control variable, as I did not know their level of education. Therefore, three missing's were reported for this control variable.

In table 16 in Appendix 5 the results of the ANCOVA are shown. Taking everything into account, only the control variable *interest in sustainability* was significantly related to the choice for the sustainable option, F(1, 97) = 4.978, p=.028. This indicated that this control variable significantly predicted the dependent variable (choice for the sustainable option). In conclusion, a person who has more interest in sustainability is likely to choose the more sustainable option over the less sustainable options.

However, the covariate *product involvement* and the other control variables were not significant. This indicated that those other control variables did not significantly influence the choice for the sustainable option in the customization tool.

5. Conclusion, discussion & implications

This chapter will first provide an answer to the research question plus an overview of the most important results of this research. Secondly, a discussion will take place elaborating on possible explanations for the results and tries to form links between the theory and the results. Finally, practical and theoretical implications and the limitations together with recommendations for further research will be stated.

5.1. Conclusion

The aim of this research was to gain further insights into the effect of nudging a consumer towards the most sustainable product by displaying the most sustainable option laterally to the right instead of to the left which was based on the research of Romero & Biswas (2016). A theoretical framework was developed in chapter 2 to explain the relationship between lateral placement of the options in a choice architecture and the consumption of sustainable options. Moreover, a link was made with the construal level theory from Trope & Liberman (2010) to differentiate between people with an abstract or a concrete mindset. This theoretical framework concluded with two proposed hypotheses and a conceptual model. The hypotheses and the conceptual model were tested in an online experiment, more specifically in an online customization tool for shoes.

Hypotheses	Rejected/Accepted
H1. The sustainable option is chosen more, when it is	Rejected
laterally displayed to the right.	
H2a. A consumer with high-level construal will choose the	Rejected
sustainable option more when it is placed to the right.	
H2b. A consumer with low-level construal will choose the	Rejected
sustainable option equal or less when it is placed to the	
right.	

Table 1 Conclusion hypotheses

The main findings of this study show that there were no differences found between the choice for the sustainable option when it is laterally placed to the right instead of the left. The mean scores for the sustainable choice between the two groups (1: the sustainable option left & 2: the sustainable option right) did not significantly differ from each other. Therefore H1 cannot be confirmed.

As explained before in chapter 4.2.2.2, hypotheses 2a/b cannot be fully tested. It is expected that the mindsets of the different groups were similar, as the BIF scores were almost equal and no significant differences between the groups were found. Therefore, we should keep in mind that the results for this hypothesis is just an indication. The purpose of this test was to entice further research. Nonetheless, while testing H2a it can be stated that with an alpha level of 10%, participants whom received the manipulation treatment for the high construal level choose the sustainable option significantly more when it was placed to the left. This is however exactly the opposite of what the hypothesis proposed. Therefore, this hypothesis is also rejected. Hypothesis 2b is also rejected, as no differences were found for a participant whom received the manipulation treatment for low-level construal and their decision for the sustainable choice when it was placed at the right versus the left.

Besides the proposed hypotheses, an extra test was conducted to find significant differences between the two groups whom received the manipulation treatment for the high-and lowconstrual level and their choice for the sustainable option when it was laterally displayed at the right vs. the left. This extra test was conducted, as none of the proposed hypothesis could be accepted. Moreover, further research can replicate this extra test when their manipulation treatment succeeds. However, any potential differences between the groups in this study can be caused by other factors. The discussion section elaborates more on this.

Participants whom received the manipulation treatment for the high-level construal choose the sustainable option more when it was laterally placed to the right than the participants whom received the treatment for the low-level construal. The effect size was 0.56, which indicates a medium effect (Field, 2013). Additionally, no significant differences were found between the two groups in their decision for choosing the sustainable option when it was displayed to the right. This results indicates that the participants whom filled in the *how* questions choose the sustainable option more when it was displayed to the right, than the participants who filled in the *why* questions. Furthermore, the control variables were also tested. Only the variable *interest in sustainability* had a significant influence on the results. That is to say, that a person whom has more interest in sustainability would choose the sustainable option more often than someone who has not.

This conclusion will end with an answer on the research question of this study: *What effect does lateral displaying a choice architecture has on the consumption of sustainable products and how does this differ for people with an abstract or concrete mindset?*

Laterally placing the most sustainable option in the online configurator to the right did not lead to the effect that the sustainable option is chosen more, than when it was laterally placed to the left. However this conclusion is only valid for the product category 'shoes'. Moreover, no differences could be found in the choice for the most sustainable option for people with an abstract or concrete mindset, as I expect that the people in the different groups were of the same mindset. Some significant differences between the groups with different manipulation treatments were found, however these differences are likely caused by other factors. These tests were conducted to help further research replicate this study. Furthermore, a person who is involved in sustainability will choose the most sustainable option more than someone who is not.

5.2 Discussion

This sub-chapter will discuss the results in more depth. Furthermore, the limitations of this study will be discussed and the influence of these limitations on the results. The discussion will be distinguished in two different sections: First, the limitations of the chosen sample and the design of the experiment will be discussed, and second, a discussion on the insignificant results will be given in more detail.

5.2.1 Experimental design

The manipulation treatment used for the construal level was developed by Freitas et al., (2004) which is widely tested by many scholars (e.g. Fujita et al., 2006). Therefore, it could be assumed that this manipulation treatment was indeed successful. Because the passage was changed slightly to make it more suitable for the experiment, the manipulation treatment had to be checked. Therefore, the pre-test was conducted in which the manipulation had succeeded, but in the main experiment it failed. This had a lot of consequences for the conclusion of this research. Different reasons for this failed manipulation treatment can be found.

The participants for both the pre-test and main experiment were sourced on a different manner. Those from the pre-test were retrieved from my acquaintances while participants for the main experiment were also gathered via surveyswap. This was necessary as it was very important an adequate sample size was achieved in a relative short amount of time. However, the side-effect of surveyswap is that a lot of people fill in as many surveys in a certain amount of time, to gain as much credits as possible. A sufficient amount of credits would lead to the fact that other people also fill in your survey (the 'swap' part of surveyswap). However, if the participants did not read the passage carefully or if they did not filled in the answers on the

how and *why* questions seriously, they are not correctly manipulated with a specific mindset. Therefore, I believe that the manipulation treatment failed in the main experiment, as the participants were possibly not very seriously involved with the experiment. As a result of the failed manipulation, the hypotheses could not be properly tested. In section 5.4, some suggestions will be given on how to increase the chance of a successful manipulation treatment in further research.

5.2.2 Nudging into more sustainable products

As the manipulation has failed, it is quite dubious to discuss the results of this study in more depth. Nevertheless, this section will discuss potential explanations for the insignificant results.

The main result of this study, is that it has not been proven that consumers chose the sustainable option more when it was placed to the right instead of to the left in the online configurator. This is not in line with the research of Romero & Biswas (2016). Three aspects are different between this research and their research however. The aim of this research was to increase the choice for sustainable options, it used shoes as a product group and uses mass customization.

It was expected that people linked the most sustainable option to the right side (i.e. positive), as sustainable products are experienced as positive. When the sustainable option was placed at the right side, it would be in line with their mental representation and according to the theory explained in chapter 2 the option would have been chosen more - this did not happen. A reason could be that people still avoid green products due to their ineffective marketing (Ottman et al., 2006). They distrust claims about green products, because they believe that most of the time they are misleading or falsely stated, a 2007 study by Terra Choice Environmental Marketing points out. Resulting in people not linking the sustainable products to their dominant side as they distrust the sustainable information given in the configurator. This could be a reason for the insignificant differences between lateral placing the sustainable option to left vs. right.

Furthermore, the result can also be caused by the chosen product group and the mass customization setting. As mentioned by Franke, Schreier & Kaiser, 2010, three factors are important when designing a customized product: *Preference fit achieved by self-designed products (benefits), design effort necessary (costs)* and the *''I Designed It Myself''* effect. Since nearly every decision in the customization tool was limited to three options, participants

could feel that the perfect option was not included in these three (thus no preference fit). This could have made them indifferent about an option, which led to a random choice as they needed to make a decision, otherwise Qualtrics did not let them continue to the next decision. Realistically when consumers design a pair of shoes in a configurator, they receive their actual composed product in the end of the process. This research lacks the *''I Designed It Myself''* effect. Since two out of three factors were already excluded in this experiment, participants could feel a lack of involvement.

Despite the fact, that the results indicate that ''participants whom received the manipulation treatment for the high-level construal choose the sustainable option more when it was laterally displayed to the right than the participants whom received the manipulation treatment for the low-level construal'' this cannot be stated, as I expect that both groups were in the same mindset. The BIF scores of both groups were very similar with no significant differences found. Therefore, I believe that this this result is based on a type 1 error mistake. Thus, assuming there were significant differences between the groups, while in fact there were none (Field, 2013). This is the only valid explanation in my opinion, as beside the different manipulation treatment there were no differences in the design or in the execution of the experiments for both groups.

The only valid significant result, is the influence of interest in sustainability on the choice for the sustainable option. Again, people who are more interested in sustainability choose the sustainable option more often. This result was in line with the theory of Hankammer (2018), since that research state that when people have more interest for sustainability, they are more triggered by information on the subject than people that have less interest. Since, almost every sustainable option (except for the pick-up point) had sustainable information in their option (words like: sustainable, natural and reusable), this result was expected beforehand.

5.3 Implications

5.3.1 Theoretical implications

The way this study could contribute to the field of nudging and construal level theory in an MC-setting, is by combining these two concepts for the first time. To my knowledge no earlier study has focused on this aspect. Especially the link with the construal level was unique, as past studies had only investigated the nudge theory and different designs for the choice architectures (Romero & Biswas, 2016 and Meier & Robinson, 2004). This study proposed that consumers with different construal levels should have a different lateral design of the choice architecture for gaining more sustainable consumption. However, due to the failed manipulation treatment this could not be proven. This study examined the manipulation treatment. Since that manipulation treatment did not effectively gave the participants in the main experiment a certain mindset. From this result, I can only conclude that it is quite difficult to manipulate the construal level of consumers in an online experiment. Chapter 5.4 will therefore provide recommendations for further research to increase the chance of the manipulation succeeding.

Furthermore, Hankammer et al., 2018 investigated that consumers with a higher level of individual CfSC (more interested in sustainability), will choose the sustainable option more often. This study confirms this, as it is indeed proven that consumers with more interest in sustainability will choose the sustainable option more in a MC setting.

Finally, it has not been proven that the lateral position of the sustainable option influenced the choice for the sustainable option. Thus, consumers in a MC configurator were not effectively nudged in the most sustainable option when it was laterally placed at the right (their dominant side) vs. the left (their non-dominant side). This was expected beforehand based on the study of Romero & Biswas (2016) and Chae & Hoegg (2013). In other words, this research did not find evidence that people link sustainable products to their 'good' side (dominant side). Explanations for this will be given in chapter 5.4. Nevertheless, this study provides a good starting position to investigate in more detail the design for a MC configurator to promote sustainable products and the effect of the mindset of the consumers on that design. Due to the limited scope and budget, this study was not able to investigate the proposed hypotheses to the fullest, but the recommendations for future research could be really important to investigate this topic even further.

5.3.2 Practical implications

The goal of this study was to provide positive contributions for managers and organizations to increase the sales of sustainable products, as they are given the power to influence the choice architecture of a configurator. It was disproven that consumers chose the sustainable option in designing a pair of shoes more when it was placed to the right instead of the left, so this will not yet be advised to managers as further research regarding online configurators is needed.

The only significant result is that participants that had more interest in sustainability chose that option more frequent, as they were triggered more by words like natural and reusable. Therefore, it is advised when managers design the choice architecture, the most sustainable option should include clear information about the sustainability of the product and contain specific words. This can contribute to an increase in the sales of the most sustainable product.

Moreover, (local) governments should focus more on making sure that consumers are getting more involved in sustainability. This would increase the sales of the most sustainable product even more. As stated in chapter 2, consumers trust information about sustainability more when it comes from parties like environmental groups or scientists. Those groups should receive more funds from the government to promote the importance of sustainability and increase the attention for sustainability among consumers. This would lead to a society where even more consumers are getting triggered by sustainable words in configurators and thus more people would get nudged into the most sustainable option.

Furthermore, it was not proven that the demographics of consumers (age, gender or education level) and the dominant handed side of consumers have a significant influence on the choice for the sustainable option. Therefore, it will not be advised to choice architects to make a distinction when designing the online configurator for consumers with different demographics or for consumers with a different dominant side.

Finally, since this experiment did not have a real website (explained more detailed in subchapter 5.4), participants could have felt a lack of involvement as the configurator in this experiment did not look all to realistic. To test this theory in more detail, further research can include a web designer and/or a manufacturer. However, managers can also test this theory in a real life setting. When designing the choice architecture, managers could place the most sustainable option on the right for one year and switch the year after. They could analyze their results and provide more concrete practical implications.

5.4 Limitations & Further research

As both proposed hypotheses are rejected, it is necessary to conduct further research in this field. Further research can build on this research to find significant results with two aspects taken into account. First, participants did not choose the most sustainable option when it was placed to the right, probably caused by the consumers distrust. Further research should include a control variable that controls for consumers distrust in sustainable products, since this could be the reason that consumers do not link the sustainable option to their dominant side. Secondly, it is important to find out why the manipulation treatment has failed.

The main difference from this research and the study of Biswas & Romero (2016), is that the latter study only used participants recruited through an online (MTurk) panel and students observed in a controlled lab setting. The participants in the panel participated for monetary compensation and students in exchange for course credits. This platform is completely different from surveyswap, since the participants are much more serious since they receive some type of incentive after participation has been checked out. The other half of the participants are students in a controlled lab setting. This can be monitored by the researcher and decreases the chance of biased results. Therefore, I suggest that further research should repeat my experiment with participants retrieved via MTurk or participants whom can be observed in a controlled lab setting.

Furthermore, Cho & Fiorito (2009) found that consumers only actively engage in online customization when they perceive that the website is designed well enough for purchasing a customized apparel. The online experiment of my research did not had a website, let alone that the website was also competent and useful. Therefore, it is possible that the participants felt a lack of involvement, since the configurator did not look like a real website. For this reason, further research should make it look and feel more like a real website. Hankammer et al., 2018 for example, also investigated the effect of nudging and sustainability for a customized product. However, they used a realistic web-based product configurator. Moreover, they worked together with a large European manufacturer of TVs and used prices in their research. Therefore, I suggest that further research should contact a web designer or producer.

To make the configurator more realistic, prices should also be included in the configurator. Hankammer et al., (2018) state that for product configurators, it very complicated to look only at the sustainable starting position of a product. In a product configurator other dimensions like the price, the functionality and the aesthetics are also very important for a consumer to make a decision. Especially because sustainable products are still more expensive than conventional products, as explained in the introduction. This could be an incentive for consumers to choose another option. As for that reason, it is important to involve prices in the configurator. Prices of the different options can be obtained, by contacting a shoe (product) manufacturer.

A lack of involvement can also be caused by an overwhelmed feeling of the participant. People perceive a customization tool often as a very complex task, which cost a lot of effort for the user (Huffman & Kahn, 1998). The default option can be used as a solution for this complexity. A lot of MC companies use the default option in their customization tool, to decrease the perceived complexity and to increase the utility of the tool (Dellaert & Stremersch, 2005). This current study did not use the default option and therefore the participants had to make a decision for every aspect of the shoe (8 in total). They could have been overwhelmed by the amount of choices they had to make. Too many can cause harm to the psychological and emotional well-being of a person, this is called the paradox of choice (Schwartz, 2004). Therefore I suggest, that further research should include the effect of the default option in the online configurator.

Furthermore, I heard from a few participants in my close environment who filled in the main experiments that they found the pictures in the online configurator quite small. They engaged in the main experiment on their mobile device and that screen is relatively small to see three options laterally. I made the choice to not ask the participants for feedback in the first pre-test about the visibility of the pictures in the online questionnaire, as I found them visible enough and the pre-tests were already quite long. However, in hindsight it would have been better to ask the participants for feedback. This could have been the reason that participants did not link the sustainable option on the right side as the 'good' option, because the pictures were too small. Therefore, I suggest that further research should restrain from executing the questionnaire on mobile devices.

Finally, it is important for further research that the manipulation treatment for the mindset succeeds. This study used the manipulation method from Freitas et al., 2004. Other manipulation methods can be used from Fujita et al., (2006) or Liberman, Trope, McCrea & Sherman (2007). The study from Fujita et al., (2006) presents different words to the participants. Participant assigned in the low-construal level, should answer the question '*an*

example of [word] is...'. Participants assigned in the high-construal level, should answer *'' [Word] is an example off...''* The study from Liberman et al., 2007 manipulates participants by providing them with four different situations. Participants assigned in the low-construal level should describe for every situation *''why''* that person is performing that action. Participants assigned in the high-construal level should describe for every situation *''why''* that person is performing that action. Participants assigned in the high-construal level should describe for every situation *''how''* a person would perform that action. I suggest that further research should test the different manipulation treatments in the pre-test, as these are next to Freitas et al., 2004, other well-known manipulation methods for the construal level. The manipulation treatment which provides the best results should be used in their main experiment.

6. References

- Balderjahn, I., Buerke, A., Kirchgeorg, M., Peyer, M., Seegebarth, B., & Wiedmann, K. P. (2013). Consciousness for sustainable consumption: scale development and new insights in the economic dimension of consumers' sustainability. *AMS review*, 3(4), 181-192.
- Benartzi, S., Beshears, J., Milkman, K. L., Sunstein, C. R., Thaler, R. H., Shankar, M., & Galing, S. (2017). Should governments invest more in nudging? *Psychological science*, 28(8), 1041-1055.
- Benbunan-Fich, R. (2017). The ethics of online research with unsuspecting users: From A/B testing to C/D experimentation. *Research Ethics*, *13*(3-4), 200-218.
- Bonini, S. M., & Oppenheim, J. M. (2008). Helping 'green'products grow. *The McKinsey Quarterly*, 3(2), 1-8.
- Bonini, S. M., Gorner, S., Jones, A. (2010). How companies manage sustainability. Retrieved from https://www.mckinsey.com/busifmness-functions/sustainability/ourinsights/how-companies-manage-sustainability-mckinsey-global-survey-results on 25-03-19.
- Borja, A., & Elliott, M. (2018). There is no Planet B: A healthy Earth requires greater parity between space and marine research. *Marine Pollution Bulletin*, *130*(1), 28-30.
- Bucher, T., Collins, C., Rollo, M. E., McCaffrey, T. A., De Vlieger, N., Van der Bend, D. & Perez-Cueto, F. J. (2016). Nudging consumers towards healthier choices: a systematic review of positional influences on food choice. *British Journal of Nutrition*, 115(12), 2252-2263.
- Casasanto, D., & Chrysikou, E. G. (2011). When left is "right" motor fluency shapes abstract concepts. *Psychological science*, 22(4), 419-422.
- Chae, B., & Hoegg, J. (2013). The future looks "right": Effects of the horizontal location of advertising images on product attitude. *Journal of Consumer Research*, 40(2), 223-238.
- Cho, H., & Fiorito, S. S. (2009). Acceptance of online customization for apparel shopping. International Journal of Retail & Distribution Management, 37(5), 389-407.

- Collins, D. (2003). Pretesting survey instruments: an overview of cognitive methods. *Quality of life research*, *12*(3), 229-238.
- Combs, H. E., & Sloan, C. (2012). New guides will affect marketing of bonded leather. Retrieved from http://www.furnituretoday.com/article/370142-new-guides-will-affectmarketing-of-bonded-leather on 18-03-19.
- Daaboul, J., Novak, B., Le Duigou, J., Da Cunha, C., & Bernard, A. (2014). To mass customize or not to mass customize? The Alpina case. *International Conference on Integrated Design and Manufacturing in Mechanical Engineering-IDMME*.
- De Geus, M. (2003). The End of Overconsumption: Towards a Lifestyle of Moderation and Self-Restraint. Utrecht, The Netherlands: International Books.
- Dellaert, B. G. C., & Stremersch, S. (2005). Marketing Mass-Customized Products: Striking a Balance between Utility and Complexity. *Journal of Marketing Research*, 42(2), 219– 227.
- Deng, X., Kahn, B. E., Unnava, H. R., & Lee, H. (2016). A "wide" variety: Effects of horizontal versus vertical display on assortment processing, perceived variety, and choice. *Journal of Marketing Research*, 53(5), 682-698.
- Edwards, S. (2016). The Environmental Impacts of Leather. Retrieved from http://www.tortoiseandladygrey.com/2016/05/02/environmental-impacts-leatherfashion/ on 22-5-19.
- EPA. (n.d). Learn about Dioxin. Retrieved from https://www.epa.gov/dioxin/learn-aboutdioxin on 18-03-19.
- European Parliament (EP). (2018, 24 October). Plastic Oceans: MEPs back EU ban on throwaway plastics by 2021. Retrieved from http://www.europarl.europa.eu/news/en/press-room/20181018IPR16524/plasticoceans-meps-back-eu-ban-on-throwaway-plastics-by-2021 Plastic Oceans: MEPs back EU ban on throwaway plastics by 2021 on 18-02-19.
- EY. (2014). The green mile? Over de duurzaamheid van de 'last mile' in de Nederlandse ecommerce. Retrieved from https://www.bjmgerard.nl/wpcontent/uploads/2015/05/EY-onderzoek-green-mile-duurzaamheid.pdf on 22-5-19.

- Farnsworth, B. (2016). *What is participant Bias? (And how to defeat it)*. Retrieved from https://imotions.com/blog/participant-bias/ on 08-03-19.
- Field, A. (2013). Discovering statistics using IBM SPSS statistics. (4e ed.). Los Angeles, United States: Sage Publications.
- Food and Agriculture Organization of the United Nations (FAO) (n.d.). Organic Agriculture. Retrieved from http://www.fao.org/organicag/oa-faq/oa-faq5/en/ on 26-03-19.
- Franke, N., Schreier, M., & Kaiser, U. (2010). The "I designed it myself" effect in mass customization. *Management science*, *56*(1), 125-140.
- Freitas, A. L., Gollwitzer, P., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of experimental social psychology*, 40(6), 739-752.
- Fujita, K., Henderson, D.M., Eng, J., Trope, Y., & Liberman, N. (2006). Spatial distance and mental construal of social events. *Psychology Bulletin*, 21(1), 525-538.
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and selfcontrol. *Journal of personality and social psychology*, 90(3), 351.
- Guthrie, J., Mancino, L., & Lin, C. T. J. (2015). Nudging consumers toward better food choices: policy approaches to changing food consumption behaviors. *Psychology & Marketing*, 32(5), 501-511.
- Hair, J.F., Black, W. C., Babin, B.J., & Anderson, R.E. (2014). *Multivariate Data Analysis*.Essex, United Kingdom: Pearson.
- Hankammer, S., & Steiner, F. (2015). Leveraging the sustainability potential of mass customization through product service systems in the consumer electronics industry. *Procedia CIRP*, *30*, 504-509.
- Hankammer, S., Hora, M., Canetta, L., & Sel, S. K. (2016). User-Interface Design for Individualization Services to enhance sustainable consumption and production. *Procedia CIRP*, 47, 448-453.

- Hankammer, S., Kleer, R., & Piller, F. T. (2018). Mass Customization and Sustainable Consumption: Nudging Consumers towards more Sustainable Choices. In Academy of Management Proceedings, 2018(1), 1-35.
- Haustermann, M. (n.d.). Sustainable Rubber. Retrieved from https://www.businessbiodiversity.eu/en/natural-rubber on 22-5-19.
- Ho, V. (2018). People need them: the trouble with the movement to ban plastic straws. Retrieved from https://www.theguardian.com/us-news/2018/aug/25/plastic-straw-bancalifornia-people-with-disabilities on 24-03-19.
- Hora, M., Hankammer, S., Canetta, L., Sel, S. K., Gomez, S., & Gahrens, S. (2016).
 Designing business models for sustainable mass customization: a framework proposal. *International Journal of Industrial and Systems Engineering*, 7(4), 143-152.
- Houlihan, M., & Harvey, B. (2018). It's official: Customers prefer sustainable companies. Retrieved from https://www.entrepreneur.com/article/324001 on 25-03-19.
- Huffman, C., & Kahn, B. E. (1998). Variety for sale: Mass customization or mass confusion? *Journal of Retailing*, 74(4): 491–513.
- Jackson, T. (2005). Live better by consuming less?: is there a "double dividend" in sustainable consumption?. *Journal of Industrial Ecology*, *9*(1-2), 19-36.
- Johnson, E. J., Shu, S. B., Dellaert, B. G., Fox, C., Goldstein, D. G., Häubl, G., & Wansink, B. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters*, 23(2), 487-504.
- Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic management review*, *3*(1-2), 128-143.
- Keller, C., Markert, F., & Bucher, T. (2015). Nudging product choices: The effect of position change on snack bar choice. *Food Quality and Preference*, 41(1), 41-43.
- Keller, K. L., Apéria, T., & Georgson, M. (2012). Strategic brand management: A European perspective. (2e Ed.). London, United Kingdom: Pearson Education Limited.
- Khan, A., & Haasis, H. D. (2016). Producer–buyer interaction under mass customization: analysis through automotive industry. *Logistics Research*, 9(1), 17.

- Lehner, M., Mont, O., & Heiskanen, E. (2016). Nudging–A promising tool for sustainable consumption behaviour? *Journal of Cleaner Production*, *134*(1), 166-177.
- Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions: A test of temporal construal theory. *Journal of personality and social psychology*, 75(1), 5-18.
- Liberman, N., Trope, Y., McCrea, S.M., & Sherman, S.J. (2007). The effect of level of construal on the temporal distance of activity enactment. *Journal of Experimental Social Psychology*, 43,143-149.
- Meier, B. P., & Robinson, M. D. (2004). Why the sunny side is up: Associations between affect and vertical position. *Psychological science*, *15*(4), 243-247.
- Nishioi, H., Ogata, S., & Tsujiyama, Y. (1994). *Microfibers-generating fibers and a woven or non-woven fabric of microfibers*. Washington, DC, United States: Patent and Trademark Office.
- Ottman, J. A., Stafford, E. R., & Hartman, C. L. (2006). Avoiding green marketing myopia: Ways to improve consumer appeal for environmentally preferable Products. *Environment: Science and Policy for Sustainable Development*, 48(5), 22-36.
- Perneger, T. V., Courvoisier, D. S., Hudelson, P. M., & Gayet-Ageron, A. (2015). Sample size for pre-tests of questionnaires. *Quality of Life Research*, 24(1), 147-151.
- Plastic Soup Foundation. (2018, 27 August). Plastic waste releases greenhouse gases. Retrieved from https://www.plasticsoupfoundation.org/en/2018/08/plastic-waste-releases-greenhouse-gases/ on 05-01-2019.
- Reips, U. D. (2002). Internet-based psychological experimenting: Five dos and five don'ts. *Social science computer review*, 20(3), 241-249.
- Renee, V. (2016). Left or right? Why a Character's Lateral movement On-Screen Matters in Film. Retrieved from https://nofilmschool.com/2016/02/left-or-right-why-characterslateral-movement-screen-matters-film on 02-02-19.

Romero M., and Biswas, D. (2016). "Healthy-Left, Unhealthy-Right: Can Displaying Healthy Items to the Left (versus Right) of Unhealthy Items Nudge Healthier Choices?" *Journal of Consumer Research*, 43(1), 103-112.

Schwartz, B. (2004). *The paradox of choice: Why more is less*. New York, United States: Harper Collins Publishers Inc.

- Shaeffer, C. (2003). Sew Any Fabric: A Quick Reference to Fabrics from A to Z. (1ste ed.). Wisconsin, United States: Krause publications.
- Shafir, E. (2013). *The Behavioral Foundations of Public Policy*. Princeton, United States: Princeton University Press.
- Sheth, J. N., Sethia, N. K., & Srinivas, S. (2011). Mindful consumption: a customer-centric approach to sustainability. *Journal of the Academy of Marketing Science*, *39*(1), 21-39.
- Shutterstock.com (n.d.). Stockpictures. Retrieved from Shutterstock.com.
- Slepian, M. L., Masicampo, E. J., & Ambady, N. (2015). Cognition from on high and down low: Verticality and construal level. *Journal of Personality and Social Psychology*, 108(1), 1-17.
- Sundar, V. J., Ramesh, R., Rao, P. S., Saravanan, P., Sridharnath, B., & Muralidharan, C. (2001). Water management in leather industry. *Journal of Scientific & Industrial research*. 60(1), 443-450.
- Terra Choice. (2007). The 'Six Sins of Greenwashing retrieved from http://sinsofgreenwashing.com/index6b90.pdf on 15-02-19.
- Thaler, R. H. and Sunstein, C. R. (2008). *Nudge. Improving Decisions About Health, Wealth and Happiness* (1ste Ed.). London, United Kingdom: Penguin Putnam incorporation.
- Thum, J. (2016). The sustainability of E-Commerce Delivery. Retrieved from https://www.powerretail.com.au/opinion/sustainability-e-commerce-delivery/ on 18-03-19.
- Trope, Y. and Liberman, N. (2010). "Construal-Level Theory of Psychological Distance," *Psychological Review*, *117* (2), 440-463.

- Unilever. (2017). *Report shows a third of consumers prefer sustainable brands*. Retrieved from https://www.unilever.com/news/press-releases/2017/report-shows-a-third-of-consumers-prefer-sustainable-brands.html on 11-03-19.
- United Nations. (n.d.). About the sustainable development goals. Retrieved from https://www.un.org/sustainabledevelopment/sustainable-development-goals/ on 24-03-19.
- United Nations. (n.d.). Sustainable development. Retrieved from http://www.un.org/en/ga/president/65/issues/sustdev.shtml on 05-01-19.
- Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological review*, *94*(1), 3.
- Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude–behavioral intention" gap. *Journal of Agricultural and Environmental ethics*, 19(2), 169-194.
- Wackernagel, M., & Rees, W. (1998). Our ecological footprint: reducing human impact on the earth (Vol. 9). Gabriola Island, Canada: New Society Publishers.
- Wilk, R. (2004). Questionable assumptions about sustainable consumption. *The ecological economics of consumption*, 17-31.
- WMO. (2018). WMO climate statement: past 4 years warmest on record. Retrieved from https://public.wmo.int/en/media/press-release/wmo-climate-statement-past-4-yearswarmest-record on 05-01-19.
- Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of consumer research*, *12*(3), 341-352.

Appendix

Appendix 1. Pre-test 1. Manipulation check (English version)

Block 1. Introduction Dear Participant,

Thank you for taking the time to fill in this questionnaire. Your answers will be used for my master thesis in the field of Marketing at the Radboud University. I am interested in your thoughts and opinions. Thus, there are no wrong or right answers.

Please take your time to fill in all the questions, this will approximately take 5-7 minutes. Your answers will be treated with confidentiality and in an anonymous way. You can choose above in the right corner, whether you want to fill in the questionnaire in English or in Dutch.

With kind regards,

Tirza Speekenbrink

Block 2. Demographics

- ➢ What is your age?
- ➤ What is your gender?
- Female
- Male
- Other
- ➤ What is your level of education?
- High-school
- University education
- Higher professional education
- Secondary vocational education
- Other

Page break-

Construal level manipulation

The participant is manipulated with either a high-construal level manipulation **or** a low-construal level manipulation.

Block 3. High-construal level manipulation

Please carefully read the following passage. When finished, please proceed to the questions.

For everything we do, there is always a reason why we do it. We can trace the causes of our behavior back to the goals that we have in life. For example, when you go to the shopping mall. Why are you doing this? Perhaps because you don't like your old clothes. Why don't you like your old clothes anymore? Perhaps because it isn't fashionable? Why is this not fashionable anymore? Why do you need clothes that are fashionable? Do you want people to like your clothes? Why do you want that? This thought exercise is intended to focus your attention on why you do the things you do.

In this section you are asked to answer why you want to improve and maintain your health. After you answered this question, you will receive a follow-up question about your given answer. Thus, for example if you answer: I want to improve and maintain health because I want to reach the age of 100, the follow-up question is: Why do you want to reach the age of 100?

In total you will get three follow-up questions. It is very important that you answer the questions one by one.

Take your time and answer as complete as possible.



▶ Q4. Why?

▶ Q3. Why?

 \triangleright Q2. Why?

> Q1. Why do you want to improve and maintain health?

Statement: "Improve and maintain health"

- Page break-

Block 4. Low-construal level manipulation

Please carefully read the following passage. When finished, please proceed to the questions.

For everything we do, there is always a reason how we do it. We can trace the causes of our behavior back to the goals that we have in life. For example you want to find happiness in your life. How do you find that? Perhaps shopping makes you happy. How does that make you happy? Perhaps it gives you more confidence. But how does that give you more confidence? This thought exercise is intended to focus your attention on how you do the things you do.

- Page break-

In this section you are asked to answer why you want to improve and maintain your health. After you answered this question, you will receive a follow-up question about your given answer. Thus, for example if you answer: I want to improve and maintain health by exercising more often, the follow-up question is: How do you want to exercise more often?

In total you will get three follow-up questions. It is very important that you answer the questions one by one.

Take your time and answer as complete as possible.

Page break-



Statement: "Improve and maintain health"

> Q1. How do you want to improve and maintain health?

 \triangleright Q2. How?

▶ Q3. How?

▶ Q4. How?

- Page break-

Block 5. Manipulation check

In the following section, you have to make a choice between two different types of behavior for every situation. I would like you to choose the type of behavior you think fits the situation best. Remember there are no wrong or right answers and for every situation, you can only choose one option.

Situation 1: Picking an apple

- Getting something to eat
- Pulling an apple off a branch

Situation 2: Painting a room

- Applying brush strokes
- Making the room look fresh

Situation 3 Locking a door

- Putting a key in the lock
- Securing the house

Situation 4: Greeting someone

- Saying hello
- Showing friendliness

Situation 5: Traveling by car

- Following a map
- Seeing countryside

Situation 6: Voting

- Influencing the election
- Making a ballot

Situation 7: Filling out a personality test

- Answering questions
- Revealing what you're like

Situation 8: Taking a test

- Showing one's knowledge
- Answering questions

Situation 9: Talking to a child

- Teaching a child something
- Using simple words

Situation 10: Resisting temptation

- Saying "no"
- Showing moral courage

Page break-

Block 6. Control for interest in sustainability

In the following section you receive different statements. Answer whether you agree or disagree with this statement.

I buy a product only if I believe it...

 \succ ... is made from recycled materials.

Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

> ...can be disposed of in an environmentally friendly manner.

Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

> ... is packed in an environmentally friendly manner.

Strongly agree	Agree Sor	newhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	disagree 0	0	0	0

> ... is produced in an environmentally friendly manner.

Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

- Page break-

How important is it for you personally that a product...

\succ ... is made from recycled materials.

Strongly agree	Agree Sor	newhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

> ...can be disposed of in an environmentally friendly manner.

Strongly agree	Agree So	omewhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	disagree 0	0	0	0

> ... is packed in an environmentally friendly manner.

Strongly agree	Agree Sor	newhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

> ... is produced in an environmentally friendly manner

Strongly agree	Agree	Somewhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

- Page break -

Block 7. Control for product involvement

➢ I am interested in new shoes.

Strongly agree	Agree	Somewhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

➢ I would like to learn more about new shoes.

Strongly agree	Agree So	mewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

➢ I have a broad knowledge about shoes.

Strongly agree	Agree So	mewhat agree	Neither agree nor	Somewhat disagree	Disagree	Strongly disagree
0	0	0	0	0	0	0

- Page break -

Block 8. Ending questions

For the last question, it would be very useful if you would take the time to fill in some feedback about the questionnaire you just filled in. For example, were the questions clear to you? Were there any words used in the questionnaire that are unfamiliar to you?

- Page break -

Thank you for your participation! If you are interested in the results and the exact purpose of this questionnaire, you can read my thesis after it is finished in July this year. You can contact me on tirza.speekenbrink@student.ru.nl. Press on the red arrow at the right bottom and your answer will be recorded.

With kind regards,

Tirza Speekenbrink

Appendix 2. Pre-test 2. Sustainability check (English version)

Block 1. Introduction

Dear Participant,

Thank you for taking the time to fill in this questionnaire. Your answers will be used for my master thesis in the field of Marketing at the Radboud University. I am interested in your opinion. Thus, there are no wrong or right answers.

Please take your time to fill in this short questionnaire, this will approximately take 2 minutes. Your answers will be treated with confidentiality and in an anonymous way.

In the right top corner you can change the language to either Dutch or keep it in English.

With kind regards,

Tirza Speekenbrink

- Page break -

Block 2. Sustainability check

You will see five different aspects to design a shoe. Every aspect consists out of 3 options. Your task is to give an indication which option you think is the most **sustainable.**

Page break -

Decision 1. Outer Shoe material



> Which option do you think is the **most sustainable** option?

- Option 1
- Option 2
- Option 3

- Page break -

Decision 2. Inner Shoe material



- > Which option do you think is the **most sustainable** option?
- Option 1
- Option 2
- Option 3

Page break -

Decision 4. Packaging method



- > Which option do you think is the **most sustainable** option?
- Option 1
- Option 2
- Option 3



Decision 5. Shipping method



➤ What is your age?

• Page break –

Thank you for your participation! If you are interested in the results and the exact purpose of this questionnaire, you can read my thesis after it is finished in July this year. You can contact me via tirza.speekenbrink@student.ru.nl.

Please click the arrow at the bottom right and your answer will be recorded.

With kind regards,

Tirza Speekenbrink

Appendix 3. Main experiment (English version)

Dear Participant,

Thank you for taking the time to fill in this questionnaire. Your answers will be used for my master thesis in the field of Marketing at the Radboud University. I am interested in your thoughts and opinion. Thus, there are no wrong or right answers.

Please take your time to fill in all the questions, this will approximately take 8-10 minutes. Your answers will be treated with confidentiality and in an anonymous way. In the right top corner you can change the language to either Dutch or keep it in English.

With kind regards,

Tirza Speekenbrink

- Page break-

Block 1. Demographics

- ➤ What is your age?
- ➢ What is your gender?
- Female
- Male
- Other
- ➤ What is your level of education?
- High-school
- University education
- Higher professional education
- Secondary vocational education
- Other

Page break-

Construal level manipulation

The participant is manipulated with either a high-construal level manipulation **or** a low-construal level manipulation.

Block 2. High-construal level manipulation

Please carefully read the following passage. After you have read the passage, continue to the questions.

For everything we do, there is always a reason why we do it. We can trace the causes of our behavior back to the goals that we have in life. For example, when you go to the shopping mall. Why are you doing this? Perhaps because you don't like your old clothes anymore. Why don't you like your old clothes anymore? Perhaps because it isn't fashionable anymore. Why is this not fashionable anymore? Why do you need clothes that are fashionable? Do you want people to like your clothes? Why do you want that? This thought exercise is intended to focus your attention on why you do the things you do.

- Page break-

In this section you will be asked to answer why you want to improve and maintain your health. After you've answered this question, you will receive a follow-up question about your given answer. For example if you answer: I want to improve and maintain health because I want to reach the age of 100, the follow-up question is: Why do you want to reach the age of 100?

In total you will get three follow-up questions to make your answers more specific. It is very important that you answer the questions one by one. Please take your time and answer as complete as possible.



Statement: "Improve and maintain health"

➢ Q4. Why?
➢ Q3. Why?
> Q2. Why?
Q1. Why do you want to improve and maintain your health?

Block 3. Low-construal level manipulation

Please carefully read the following passage. After you have read the passage, continue to the questions.

For everything we do, there is always a reason how we do it. We can trace the causes of our behavior back to the goals that we have in life. For example you want to find happiness in your life. How do you find that? Perhaps shopping makes you happy. How does that make you happy? Perhaps it gives you more confidence. But how does that give you more confidence? This thought exercise is intended to focus your attention on how you do the things you do.

- Page break-

In this section you are asked to answer how you want to improve and maintain health. After you've answered this question, you will receive a follow-up question about your given answer. For example if you answer: I want to improve and maintain health by exercising more often, the follow-up question is: How do you want to exercise more often?

In total you will get three follow-up questions to make your answers more specific. It is very important that you answer the questions one by one.

Please take your time and answer as complete as possible.

Page break-


Statement: "Improve and maintain health"

> Q1. How do you want to improve and maintain your health?

- ▶ Q2. How?
- ▶ Q3. How?
- ▶ Q4. How?

- Page break-

Online configurator

It depends on the assigned group of the participant, whether the most sustainable option is placed at the right side or at the left side.

Block 4. Most sustainable option is left.

Over the next couple of minutes you will be a customer in the virtual shop: 'Shoes for all'. Your task is to customize a pair of shoes to your liking. For every aspect (8 in total), you are asked to make a selection between several options. When you are finished in the virtual shop 'Shoes for all', you will be asked to fill in some final questions.

Page break-

Decision 1. Outer Shoe Material



Page break-





> What **Outer Shoe color** do you prefer for your shoes?

- 0 Option 1
- 0 Option 2
- 0 Option 3
- 0 Option 4
- 0 Option 5
- 0 Option 6
- 0 Option 7
- 0 Option 8
- 0 Option 9

Page break-

Decision 3. Inner Shoe Material



Option 1	Option 2	Option 3
0	0	0

- Page break-





> What **shoe lace material** do you prefer for your shoes?

Option 1	Option 2	Option 3
0	0	0

Page break-

Decision 5. Shoe lace color



> What **Shoe Lace color** would you prefer for your shoes?

- 0 Option 1
- 0 Option 2
- 0 Option 3
- 0 Option 4
- 0 Option 5
- 0 Option 6
- 0 Option 7
- 0 Option 8
- 0 Option 9





Page break-

Decision 8. Shipment and Delivery



Block 5. Most sustainable option is right.

Over the next couple of minutes you will be a customer in the virtual shop: 'Shoes for all'. Your task is to customize a pair of shoes to your liking. For every aspect (8 in total), you are asked to make a selection between several options.

When you are finished in the virtual shop 'Shoes for all', you will be asked to fill in some final questions.

Page break-

Decision 1. Outer Shoe Material



- Page break-





> What **Outer Shoe color** do you prefer for your shoes?

- 0 Option 1
- 0 Option 2
- 0 Option 3
- 0 Option 4
- 0 Option 5
- 0 Option 6
- 0 Option 7
- 0 Option 8
- 0 Option 9

Page break-

Decision 3. Inner Shoe Material



- Page break-



> What shoe lace material do you prefer for your shoes?

Option 1	Option 2	Option 3
0	0	0
	- Page brea	k-





➢ What Shoe Lace color would you prefer for your shoes?

- 0 Option 1
- 0 Option 2
- 0 Option 3
- 0 Option 4
- 0 Option 5
- 0 Option 6
- 0 Option 7
- 0 Option 8

0 Option 9

- Page break-



Option 1	Option 2	Option 3
0	0	0

- Page break-

Decision 8. Shipment and Delivery



> What **shipment and delivery method** do you prefer for your shoes?

Option 1	Option 2	Option 3
0	0	0
-		
	- Page break-	

Block 6. Manipulation check

In the following section, you are asked to make a choice between two different types of interpretation for every situation. I would like you to choose the interpretation you think the situation fits best. Remember there are no wrong or right answers and for every situation, however you can only choose one option.

- Page break-
- Situation 1: Picking an apple
- Getting something to eat
- Pulling an apple off a branch
- Situation 2: Painting a room
- Applying brush strokes
- Making the room look fresh

Situation 3 Locking a door

- Putting a key in the lock
- Securing the house

Situation 4: Greeting someone

- Saying hello
- Showing friendliness

Situation 5: Traveling by car

- Following a map
- Seeing countryside

Situation 6: Voting

- Influencing the election
- Making a ballot

> Situation 7: Filling out a personality test

- Answering questions
- Revealing what you're like

Situation 8: Taking a test

- Showing one's knowledge
- Answering question

Situation 9: Talking to a child

- Teaching a child something
- Using simple words

Situation 10: Resisting temptation

- Saying "no"
- Showing moral courage

- Page break-

Block 7. Controlling for sustainability

In the following section you receive different statements. Answer whether you agree or disagree with this statement.

Page break-

I buy a product only if I believe it...

➤ ...is made from recycled materials.

Strongly agree	Somewhat agree	Neither agree nor	Somewhat disagree	Strongly disagree
		disagree		
0	0	0	0	0

➤ ...can be disposed of in an environmentally friendly manner.

Strongly agree	Somewhat agree	Neither agree nor	Somewhat disagree	Strongly disagree
		disagree		
0	0	0	0	0

> ... is packed in an environmentally friendly manner.

Strongly agree	Somewhat agree	Neither agree nor	Somewhat disagree	Strongly disagree
		disagree		
0	0	0	0	0

> ... is produced in an environmentally friendly manner.

Strongly agree	Somewhat agree	Neither agree nor	Somewhat disagree	Strongly disagree
		disagree		
0	0	0	0	0

Page break-

Block 8. Controlling for product involvement

In the following section you receive different statements. Answer whether you agree or disagree with this statement.

		 Page bre 	eak-	
➤ I am in	nterested in new shoes			
Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
0	0	0	0	0
► I woul	d like to learn more at	pout new shoes.		
Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
0	0	0	0	0
I have a broad knowledge about shoes.				
Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
0	0	0	0	0

- Page break-

Block 9. Ending questions

Are you dominantly left or right-handed?

- Left-handed
- Right-handed

- Page break-

Thank you for your participation! If you are interested in the results and the exact purpose of this questionnaire, you can read my thesis after it is finished in July this year. You can contact me via tirza.speekenbrink@student.ru.nl.

Please click the arrow at the bottom right and your answer will be recorded.

With kind regards,

Tirza Speekenbrink

Appendix 4. Results Pre-tests



Appendix 4.1 Results Pre-test 1. Manipulation check

Figure 3. Normal distribution dependent variable pretest 1.

Appendix 4.2 Results Pre-test 2. Sustainability of the options

Shipping method	Frequency	Valid	Cumulative
		Percent	Percent
Pick-up point (2km	25	75.8	75.8
radius)			
Home delivery (May	5	15.2	90.9
be left with			
neighbors)			
Home delivery (Only	3	9.1	100.0
personal delivery)			

Table 2. Shipping method

Packaging method	Frequency	Valid	Cumulative
		Percent	Percent
Luxurious gift box	2	6.1	6.1
Cardboard box	5	15.2	21.2
Re-usable packaging	26	78.8	100.0
Total	33	100.0	

Table 3. Packaging method

Shoe sole material	Frequency	Valid	Cumulative
		Percent	Percent
All natural rubber	23	69.7	69.7
Synthetic	2	6.1	75.8
Leather	8	24.2	100.0
Total	33	100.0	

Table 4. Shoe sole material

Inner shoe material	Frequency	Valid	Cumulative
		Percent	Percent
Leather from	20	60.6	60.6
sustainable sources			
Textile	9	27.3	87.9
Microfiber (Plastic)	4	12.1	100.0
Total	33	100.0	

Table 5. Inner Shoe material

Outer shoe material	Frequency	Valid	Cumulative
		Percent	Percent
Artificial leather	7	21.2	21.2
Bonded leather	2	6.1	27.3
Leather from	24	72.7	100.0
sustainable sources			
Total	33	100.0	

Table 6. Outer Shoe material

Appendix 5. Results main experiment

	Group 1	Group 2	Group 3	Group 4	Total	%
	LC →Left	LC→Right	$\mathrm{HC} \rightarrow \mathrm{Left}$	HC →		
				Right		
Total Participants	37	34	40	36	147	100
Age						
Range	19-71	18-69	20-69	16-61	-	-
Mean	37.38	32.68	33.85	32.06	-	-
Gender						
Male	20 (54%)	16 (47.1%)	14 (35%)	18 (50%)	68	46.3
Female	17 (46%)	18 (52.9%)	26 (65%)	18 (50%)	79	53.7
Other	0	0	0	0	0	0
Highest education						
High-school	5 (13.5%)	2 (5.9%)	2 (5%)	8 (22.2%)	17	11.6
University education	15 (40.6%)	20 (58.8%)	15 (37.5%)	16 (44.4%)	66	44.9
Higher professional	11 (29.7)	4 (11.8%)	14 (35%)	5 (13.9%)	34	23.1
education						
Secondary vocational	4 (10.8%)	7 (20.6%)	9 (22.5%)	7 (19.4%)	27	18.4
education						
Other	2 (5.4%)	1 (2.9%)	0 (0%)	0 (0%)	3	2
Language Survey						
taken						
English	11 (29.7%)	9 (26.5%)	9 (22.5)	8 (22.2%)	37	25.2
Dutch	26 (70.3%)	25 (73.5%)	31 (77.5%)	28 (77.8%)	110	74.8
Dominant-side						
Left-handed	8 (21.6%)	4 (8.8%)	5 (12.5%)	2 (5.6%)	19	12.9
Right-handed	28 (75.7%)	29 (85.3%)	33 (82.5%)	33 (91.7%)	123	83.7
Both	1 (2.7%)	1 (2.9%)	2 (5%)	1 (2.8%)	5	3.4

Table 7. demographics



Figure 4. Normal distribution dependent variable main experiment.

	Group 2 Low construal and sustainable option is shown to the right.	Group 4 High construal and sustainable option is shown to the right.	Total	%
Total Participants	34	36	70	100
Q1. Outer Shoe Material				
Option 1. Artificial leather	9 (26.5%)	6 (16.7%)	15	21.4
Option 2. Bonded leather	3 (8.8%)	13 (36.1%)	16	22.9
Option 3. Leather from	22 (64.7%)	17 (47.2%)	39	55.7
sustainable sources				
Q2. Inner Shoe Material				
Option 1. Microfiber (Plastic)	1 (2.9%)	4 (11.1%)	5	7.1
Option 2. Textile	16 (47.1%)	21 (58.3%)	37	52.9
Option 3. Leather from	17 (50.0%)	11 (30.6%)	28	40
sustainable sources				
Q3. Shoe Sole Material				
Option 1. Leather	10 (29.4%)	10 (27.8%)	20	28.6
Option 2. Synthetic	4 (11.8%)	12 (33.3%)	16	22.9
Option 3. All natural rubber	20 (58.8%)	14 (38.9%)	34	48.6
Q4. Packaging Method				
Option 1. Luxurious gift box	6 (17.6%)	6 (16.7%)	12	17.1
Option 2. Cardboard box	12 (35.3%)	16 (44.4%)	28	40
Option 3. Re-usable	16 (47.1%)	14 (38.9%)	30	42.9
packaging				
Q5. Shipment & Delivery				
Option 1. Home delivery (Only	5 (14.7%)	3 (8.3%)	8	11.4
personal delivery)				
Option 2. Home delivery (May	16 (47.1%)	20 (55.6%)	36	51.4
be left with neighbors)				
Option 3. Pick-up point (2km	13 (38.2%)	13 (36.1%)	26	37.2
radius)				

Table 8. Sustainable option placed to the right.

	Group 1 Low construal and sustainable option is shown to the left.	Group 3 High construal and sustainable option is shown to the left.	Total	%
Total Participants	37	40	77	100
Q1. Outer Shoe Material				
Option 1. Leather from	22 (59.5%)	23 (57.5%)	45	58.4
sustainable sources				
Option 2. Bonded leather	5 (13.5%)	11 (27.5%)	16	20.8
Option 3. Artificial leather	10 (27.0%)	6 (15.0%)	16	20.8
Q2. Inner Shoe Material				
Option 1. Leather from	17 (45.9%)	17 (42.5%)	34	44.2
sustainable sources				
Option 2. Textile	16 (43.2%)	21 (52.5%)	37	48.0
Option 3. Microfiber (Plastic)	4 (10.8%)	2 (5.0%)	6	7.8
Q3. Shoe Sole Material				
Option 1. All natural rubber	19 (51.4%)	23 (57.5%)	42	54.5
Option 2. Synthetic	7 (18.9%)	4 (10.0%)	11	14.3
Option 3. Leather	11 (29.7%)	13 (32.5%)	24	31.2
Q4. Packaging Method				
Option 1. Re-usable	23 (62.2%)	25 (62.5%)	48	62.3
packaging				
Option 2. Cardboard box	11 (29.7%)	11 (27.5%)	22	28.6
Option 3. Luxurious gift box	3 (8.1%)	4 (10.0%)	7	9.1
Q5. Shipment & Delivery				
Option 1. Pick-up point (2km	13 (35.1%)	11 (27.5%)	24	31.2
radius)				
Option 2. Home delivery (May	17 (45.9%	25 (62.5%)	42	54.5
be left with neighbors)				
Option 3. Home delivery (Only	7 (18.9%)	4 (10.0%)	11	14.3
personal delivery)				

Table 9. Sustainable option placed to the left.

	Mean	Std.	Std.	Ν
		Deviation	Error	
			Mean	
Sustainable	2,51	1,154	.132	77
option is				
chosen left				
Sustainable	2,24	1,233	.147	70
option is				
chosen				
right				
Total	-	-	-	147

Table 10. T-test hypothesis 1.

Itm	Tol.	VIF	Itm	Tol.	VIF
can be disposed of in an	.203	4.92	is made from recycled	.46	.217
environmentally friendly manner		9	materials	0	5
is packed in an	.185	5.39	I am interested in new	.60	1.64
environmentally friendly manner		6	shoes	9	1
is produced in an	.217	4.60	I have a broad knowledge	.66	1.51
environmentally friendly manner		0	about shoes	2	0
I would like to learn more about	.600	1.66			
new shoes		7			

Table 11. Testing for multicollinearity

	Factor	
	1. Interest in sustainability	2. Product involvement
I am interested in new shoes.	092	.738
I would like to learn more	.079	.761
about new shoes		
I have a broad knowledge	.008	.679
about shoes.		
is made from recycled	.736	.096
materials.		
can be disposed of in an	.935	053
environmentally friendly		
manner.		
is packed in an	.933	037
environmentally friendly		
manner.		
is produced in an	.899	033
environmentally friendly		
manner		
Extraction method:	Principal Axis Factoring	
Rotation method: Varimax		

Table 12. Common factor analysis

Factor	# items belonging each factor	Cronbach's α
Interest in sustainability	4	0,929
Product Involvement	3	0,768

Table 13. Cronbach's α

		Ν	Mean	Levene's	t	Sig (2-	Std.
				test		tailed)	Error
							Difference
Factor score	Group 1. Sustainable	77	2.93	.910	102	.919	.175
Interest in	option is placed left.			(Equal			
sustainability	Group 2. Sustainable	70	2.95	variances			
	option is placed right			assumed)			
Factor score	Group 1. Sustainable	77	3.05	0.598	.564	.573	.151
Product	option is placed left.			(Equal			
involvement	Group 2. Sustainable	70	2.97	variances			
	option is placed right			assumed)			

Table 14. Testing for Independence of the covariate and the treatment effect

Interaction effect	Type III Σ	df	Mean	F	Sig.
	Squares		square		
Group_Left_Right	.043	1	.043	.030	.863
*Product_Involvement_Common_Factor					
Group_Left_Right *	.202	1	.202	.150	.669
Interest_Sustainbility_Common_Factor					

Table 15. Testing for homogeneity of regression slopes

Source	Type ΙΙΙ Σ	df	F	Sig.
	Squares			
Age	56.031	1	1,281	.664
Gender	3.160	1	.885	.138
Education	9.402	3	2.215	.091
Factor score	7.043	1	4.978	.028
Interest in sustainability				
Factor score	.229	1	.162	.688
Product involvement				
Dominantly	.441	2	.156	.856
Left or Right handed				
Language of taken survey	1.151	1	1.071	.303

Table 16. ANCOVA results