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This submission of our master thesis represents two years out of the ordinary. Although being a master student during Covid-19 has been challenging, this period of time has also pushed us to think outside of the box. We are proud to say that we now have completed the Master of Science program: Strategic Marketing Management at BI Norwegian Business School.

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Abstract

Previous research indicates a growing attitude towards buying sustainable products. This has led to an increased focus among several fashion brands to make it easier for their consumers to buy environmentally friendly items. Although consumers claim to be interested in moving towards a more sustainable consumption, their purchase behavior does not always reflect it. Thus, how can we persuade people to make more sustainable choices? This thesis aims to examine the power of nudging and investigate consumers' purchase likelihood attached to the attributes; brand knowledge, sustainability and nudge. Drawing on the nudging theory, attitude-behavior gap, brand knowledge and sustainability literature, this paper questions how we can nudge consumers to buy more sustainable fashion items. By using a full factorial design and analyzing the data through conjoint and cluster analysis, results show that nudge, applied to sustainable items, has a positive effect on purchase likelihood. This is especially true for those consumers not particularly interested in well-known brands. Results, however, provide further evidence of brand as an important heuristic in choice making. Furthermore, the study seems to confirm the presence of the attitude-behavior gap in sustainable consumption. In order to promote environmentally friendly items, companies can rely on nudges as an effective tool.

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1. INTRODUCTION

In the past few years, online retailers have seen search queries regarding sustainable products skyrocketing. According to one of the biggest fashion search platforms Lyst, searches of 2019 including sustainability-related keywords increased 75% year on year (Lyst, 2019). This increasing interest in sustainable products did not go unnoticed, leading several brands to make it easier for their customers to find what they were looking for: sustainable products. Zalando.no, one of the most popular online fashion retailers in Norway according to Statista (Appendix A), and present in over 17 countries, started back in 2016 adding a green label with “sustainability” written on it, in several of their garments. Under product details moreover, customers could read the reasons why the product is sustainable. In 2020, the company went even further, establishing a Sustainability Award in collaboration with the Copenhagen Fashion Week. On top of that, Zalando aims at having 25% or more of their total range consisting of products marked with their sustainability flag by 2023 (Zalando, 2021). Many other companies across the world are taking similar steps, highlighting sustainable products in their offering.

Although previous research indicates a growing attitude toward buying sustainable products (Terlau & Hirsch, 2015; Zalando, 2021; Park & Lin, 2020), consumer purchase behavior does not always reflect it (Zalando, 2021; Terlau & Hirsch; Gleim et al, 2015). Many researchers have highlighted this issue, referring to it as the “Attitude-behavior gap” (Gupta & Ogden, 2006). This phenomenon is often related to different barriers of green consumption, such as individual, collective, situational and social factors (Gleim et al., 2013; Carrington et al., 2010). Focusing on this issue within the fashion industry, Zalando (2021) recently published a report titled: “It Takes Two: How the Industry and Consumers Can Close the Sustainability ‘Attitude-Behavior Gap’ in Fashion.” The report investigates the gap between behavior and attitude and how Zalando can make it easier for customers to embrace sustainability. According to their study, one of the most difficult blocker of buying sustainable products is complexity. The amount of certifications produced to guarantee that products follow specific sustainable standards creates a complexity that in turn might lead to information overload. Another blocker for buying sustainable products is price (Gleim et al., 2013). In the fashion industry, sustainable items are on average more expensive than their fast fashion counterparts. This is justified by the fact that sustainable and socially responsible

companies tend to offer better labor conditions, better quality items that last longer, use organic or other certified fabrics and therefore cannot rely on economies of scale for their production.

With the attitude-behavior gap and the different blockers in mind: *how can we convince people to make more sustainable choices if their interest in sustainability is not reflected in their actions?*

Well, according to behavioral economics people do not always behave rationally. In fact they often avoid deeper evaluations when making decisions. As stated by one of the biggest researchers in persuasion theory, Cialdini (2014) people often rely on heuristics, or so-called mental shortcuts, that allow them to solve problems and make judgments quickly and efficiently. By tapping into these heuristics, people can also be persuaded. Persuasion can act in several different ways. Recently authors developed the concept of “nudge” to indicate a “gentle encouragement” used to persuade people into making better choices. Nudge has been successfully applied to several different contexts and especially by Governments to nudge citizens to make the right choice. This is different from other forms of persuasion as there is no coercion involved.

While existing literature has focused on why customers do not buy sustainable products, we want to take it a step further. In particular, examine how to convince consumers to purchase the more green alternative, with the help of nudging attempts. Also, we are interested to see if some consumers are more susceptible than others to nudging attempts. Focusing on how to support consumers in moving from attitude to action is important for the environment, companies and society as a whole. Our research question is therefore:

RQ1: Can we nudge people into choosing more sustainable clothing options?

Another key element of our research study is brand knowledge. Consumers tend to choose well known brands, especially in low involvement situations. (Keller, 2020). Contingently, we believe that brand, as a heuristics, might compete with sustainability and nudge in some cases, or even strengthen the power of the nudge in others. According to earlier research (Schmidt et al., 2017; Gupta et al., 2012) embedding sustainability into brand attributes might lead to increased brand value or differentiation. Furthermore, consumer brand knowledge is shown to have a

positive effect on consumers' purchase behavior (Bartels & Hoogendam, 2011; Alimen & Cerit, 2010).

This leads us to the next part of our research question:

RQ2: How does brand knowledge affect this choice?

2. LITERATURE REVIEW

The following section will start with a brief overview of how persuasion works and the emergence of nudge as a cost effective persuasion technique. Secondly, a presentation of sustainable fashion and the attitude-behavior gap will follow. The section will end by discussing brand knowledge and how it is an important predictor of choice, to finally arrive at the gap we are trying to fill within the current research.

2.1 PERSUASION THEORY - AN OVERVIEW

Before describing the persuasion strategy we are aiming to implement, it is important to offer a brief overview on persuasion in general. According to one of the several definitions of persuasion developed in psychology, "*Persuasion involves one or more persons who are engaged in the activity of creating, reinforcing, modifying, or extinguishing beliefs, attitudes, intentions, motivations, and/or behaviors within the constraints of a given communication context.*"(Gass et al., 2018, p.88). In the context of marketing, persuasion entails the use of the vast knowledge on human psychology, to develop strategies to market products or services. Persuasion techniques could thus be an effective tool to induce customers to make the most sustainable choice.-

Several authors tried to explain how attitude change works. One of the leading theories is the elaboration likelihood model (ELM) developed by Petty and Cacioppo (1986). The model posits that persuasion occurs through two routes, the central route and the peripheral route. Persuasion within the central route occurs when someone carefully evaluates the information presented to them. This requires people to elaborate on the information received and use their cognitive ability. Persuasion within the peripheral route on the other hand, occurs when people just take cues from messages and make simple inference based on these cues. If the message recipient has the motivation and ability to elaborate the message, then he

will likely follow the central route and dedicate cognitive resources to analyzing the message in more detail. If motivation and ability lack, the person will more likely follow the peripheral route and rely on several other instruments and heuristics to interpret the message. According to one of the most influential authors on persuasion theory, Cialdini (2014), these heuristics include reciprocity, commitment and consistency, social proof, authority, liking, scarcity. White et al. (2019) also identified a similar route to encourage sustainable behavior: social influence as *“Consumers are often impacted by the presence, behaviors, and expectations of others.”* (White et al., 2019, p.24). These routes to promote environmentally friendly behaviors can be implemented in several different ways. Among these, nudge has been identified as a promising tool.

2.1.1 NUDGE

Among the several persuasion tactics, nudge has recently gained popularity as a cost effective tool to shift consumers behavior without coercion. The concept of nudging, was popularized by Thaler & Sunstein in their book *“Nudge: Improving Decisions About Health, Wealth, and Happiness”* (2008) and consists of using positive reinforcement to influence people. According to the authors *“A nudge,..., is any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not.”* (Thaler & Sunstein 2008, p.16). In an interview with the Sydney Business Insights, Prof. Thaler summarized the concept of nudge in *“a nudge is any small feature of the environment that attracts our attention and alters our behavior”* moreover *“a nudge is something you can opt out almost costlessly”* (Halpern & Sunstein, 2017). The concept is also related to that of choice architecture (Thaler & Sunstein, 2008), which is the *“environment in which we choose ”*, and in particular the way in which choices are presented to us. An example of what choice architecture is, was made by Thaler and Sunstein (2003). The authors described a cafeteria where employees were noticed picking up more of the food they found right at the beginning of the food line. The existing choice architecture, i.e. what foods are displayed at the beginning of the food line, can be modified to favor the consumption of more healthy food. Choice architecture

could also be a website page that highlights in bold character “this is the product that most consumers like” and it is well known that “...things that are said to be popular often are like magnets for the human mind” (Halpern & Sunstein, 2017). Phrases like the one mentioned above are deliberately placed by the choice architect in a position that attracts people’s mind in order to achieve a specific goal. Choice architecture is present everywhere.

Nudge is different from other forms of influence because the individual who receives the nudge is in control of his actions since there is no enforcement involved. Despite the nudge, the individual is in charge of their behavior. One of the most cited examples of nudge and choice architecture was implemented at the Schiphol Airport in Amsterdam. Authorities at the airport decided to etch an image of a fly on men’s urinals to influence them to aim at the fly, thus reducing the spillage (Thaler & Sunstein, 2003). The result was a success, spillage was reduced by 80%. In this famous example, the fly was more than a drawing inside an urinal, it nudged.

Due to its ease of implementation, nudging has been applied to a variety of contexts and especially by governments, some of which created so-called nudging units (Halpern & Sunstein, 2017). One of the earliest behavioral insights teams, also known as nudging units, was established in the UK in 2010. The unit’s goal was to “...generate and apply behavioral insights to inform policy, improve public services and deliver results for citizens and society.” (BIT, 2022). Among the units’ projects, several were directed towards encouraging people to embrace more sustainable behaviors (UNEP, 2022). They define this kind of nudges as “green nudges”, which are described as “*positive and gentle persuasion to encourage sustainable behavior*”. Among those who implemented green nudges Franssens et al. (2021), carried out a large field experiment where they attempted to nudge commuters to increase public transport use. In this case, the nudge attempt took the form of a free travel card holder to leverage social labeling. In this experiment, commuters were “labeled” as environmentally friendly, because they relied on public transport. This was achieved through the complimentary card holder. The results showed increased public transportation usage among those individuals who received the card holder that labeled them as environmentally friendly.

Additionally, a recent study addressed a similar research question as ours: how to nudge consumers towards sustainable fashion consumption (Lee et al., 2020). First, the authors primed participants using two videos that either described an environmental problem or explained sustainability. Then they integrated green logos, like the GOTS (global organic textile standard) to products' images. Finally, they investigated how the brain reacted to the image with the green logo. The study used a recent technique, relying on the methodology of neuroimaging, employing functional magnetic resonance imaging (fMRI). The priming and subsequent exposure to green logos was found to activate a brain part. This part of the brain led to an increased preference of items showing the green logo. The authors recommended companies to convince consumers to buy more sustainable items "...using subtle and symbolic persuasion tactics, rather than relying on normative narratives that explicitly tell people to "buy green". However, priming is not always possible in an online shopping context. Thus, our contribution relies on the attempt to nudge consumers to make more sustainable choices, without priming them with sustainability information.

2.1.1.1 ETHICAL CONCERNS

Since we decided to use nudging as a tool of persuasion, it is important to address the criticisms that it received. Nudging in fact, has received its fair share of criticism. One of the main criticisms of nudging (Sunstein, 2015) is that people are most likely uncomfortable with an external agent choosing what is best for them. To address the criticisms regarding the ethical appropriateness of nudging, Sunstein (2015) states that ultimately, the decision rests with the individual. As we mentioned above, nudge is very different from coercion and manipulation. The author furthermore elaborates that choice architects should not focus on their opinion on what is best for people, but on what people believe is best for them. Using his own words, nudging should be used to "...*make choosers better off, as judged by themselves.*" (Thaler & Sunstein, 2008). Moreover, Halpern & Sunstein (2017) defends nudging, noting that the paternalistic dimension to nudging that some critics highlighted, does not appropriately reflect what nudging is about. In his words, "*if you have automatic enrollment in a savings plan, ..., then it has a paternalistic feature*" but "as long as there is freedom of choice the standard objections to paternalism are greatly weakened" (Halpern & Sunstein, 2017).

Nevertheless, Sunstein (2014) also mentions that choice architecture is unavoidable and therefore is some form of paternalism. In any instance that requires a choice, a default option has been chosen by someone and presented to choice makers. In the context of our experiment we will act as choice architects. Yet, the nudging attempt implemented will allow the freedom of choice to individuals. We therefore believe that the current, is an ethical implementation of the tool itself.

2.2 SUSTAINABILITY

Several studies addressed the issue of sustainable consumption and especially how to promote it in an effective way. Although people's motivation towards purchasing sustainable products is positive (Morwitz et al., 2007), research shows a consumer behavior issue. As seen in the introduction part of our thesis, the attitude-behavior gap in sustainable consumption has been confirmed by several studies, and has been addressed in several contexts like automotive (Lane & Potter, 2007), fashion (Park & Lin, 2020), food consumption (Vermeier & Verbeke, 2006) and ethical product consumption (Pelsmacker et al., 2006). According to Young et al. (2010) although around 30% of consumers convey their interest in buying ethical food, this only accounts for 5% of the total market share. Hence, there is a lack of understanding and different complexities when it comes to sustainable consumption. These complexities consist of individual, collective, situational and social factors (Gleim et al., 2013; Carrington et al., 2010).

According to Park & Lin (2020) individual factors might affect the purchasing process positively when the consumers believe they can make a difference solving environmental problems. On the other hand, this can become a barrier when the consumers have less beliefs about how their effort can contribute to a "greener world". Recent studies (Geels 2004, 2011; Frantzeskaki et al., 2015) have highlighted the importance of encouraging the youth to engage in collective behaviors. Collective factors is something that has been discussed as a more effective way to create a sense of connectedness, for example through signature campaigns or protest activities (Mori & Tasaki, 2019; Oberschall & Kim, 1996). Here the collective barriers may depend on how your friends, family or neighbors perceive the world and their pro-environmental attitude. This is also in line with social norms which has shown to be an important factor to influence people towards

sustainable purchase buying (Kummen & Remøy, 2021). Lastly, situational factors are context-specific and can involve factors such as price, product availability and the willingness to pay (Norstedt & Sjølinger, 2021). For example, offering a higher price for sustainable products may outcompete the consumer's ethical considerations (Joshi & Rahman, 2015; Vermeir & Verbeke, 2006). This might hinder the consumer to buy more environmentally friendly products.

With all the different barriers; how can we make sustainable products more appealing than others? Not many studies have tried to actively close the attitude-behavior gap or, more in general, to help people make better decisions for themselves and the environment. Among these, Goldstein and Cialdini (2008) leveraged the use of social norms to nudge people to make the most sustainable choice. In this paper, the authors created two different towel reuse cards and then recorded which of the two cards inspired guests to participate in a hotel's conservation program. One card had the industry standard appeal to towel reuse ("*Help save the environment.*") while in the other one the authors used descriptive norms to nudge the hotel guests to reuse their towels ("*Join your fellow guests in helping to save the environment*"). Overall, the idea was to see how social norms influence actual consumption. Results showed that the descriptive norm resulted in a towel reuse rate significantly higher than the industry standard. Our contribution is to apply a similar approach to Cialdini and Goldstein (2008), but in the context of sustainable consumption, instead of sustainable behavior, and in an online setting, instead of a physical one.

2.3 BRAND KNOWLEDGE

Another key element of our research study is brand knowledge. Brand knowledge has two components. The first one is brand awareness, or the ease with which consumers can identify the brand under different circumstances. The second one is brand image referring to favorable, strong and unique associations in our memory (Aaker, 1991; Keller, 2020). As mentioned, we believe that brand, as a heuristics, might compete with sustainability and nudge in some cases or even strengthen the power of the nudge in others. Consumers in fact often base their choices on brand awareness, especially in low involvement situations. In these situations consumers

rely on heuristics to make their decision and “*Sometimes they simply choose the brand with which they are most familiar and aware.*”(Keller, 2020, p.73).

An amount of literature (Keller, 2013; Aaker, 1991; Pitta & Katsanis, 1995; Sheinin, 2000) addresses the question of brand knowledge and brand equity’s importance. Research has shown that for well-established brands it is often easier to introduce new brand extensions and parent brands in comparison to unknown brands (Pitta & Katsanis, 1995; Sheinin, 2000). Furthermore, the strength of the brand is also a crucial element of achieving international success and developing customer relationships. To strengthen a brand's positioning, sustainable products could be an initiative to increase consumers' positive attitudes towards the brand. More and more “non-green” firms have therefore tried to launch their own green product-line extension. This creates a “halo-effect”, often referred to as a cognitive bias (Yenipazarli & Vakharia, 2015). Karjaluoto & Chatterjee (2009) confirmed that green line extensions strengthen consumers' positive brand associations.

Previous research has focused on brand knowledge, brand equity and internal/external factors. Thus, there is still a gap when it comes to the effect of brand knowledge and the combination of the two other attributes; sustainability and nudge. As we will see in the research methodology part of our thesis, during our experiment we chose to expose participants to either unknown or known brands. The known brands that we chose are strongly associated with sport apparel, some are associated with sustainability (ex. Patagonia), while others are not sustainable (ex. Nike). Based on previous research we do expect consumers to favor the well known brands, all other conditions being equal.

2.4 CONTRIBUTION

Several studies focused on the attitude-behavior gap of sustainable consumption. Yet, not many have tried to apply techniques to attempt closing this gap. Compared to existing literature, we are trying to apply persuasion, and in particular nudge. This to persuade people to make more sustainable clothing choices despite the barriers that have been identified in previous studies. Nudge is a cost-effectiveness and relatively easy to implement persuasion technique. Moreover it has been increasingly used in sustainability matters. Thus, we attempt to apply nudge as a

persuasion technique to convince people to buy more sustainable clothing items. In particular, we will use social influence, one of the strongest forces that influence human behavior, to persuade people to make better choices. Among these heuristics, we have brands too. Hence, we want to contribute to the research and examine if the effect of brand knowledge may lead to a stronger or weaker outcome of the nudging attempt. To marketers like us, it is interesting to understand how we can make advertising efforts more successful in shaping consumer's behavior.

3. RESEARCH METHODOLOGY

3.1 OBJECTIVE

The main purpose of this study is to examine the power of nudging. Our objective is therefore to explore how the three different attributes (1) brand knowledge (2) sustainability and (3) nudging can shift consumers' shopping behavior and persuade them to make more sustainable choices. By doing so we aim to answer to these research questions:

RQ1: Can we nudge people into choosing more sustainable clothing options?

RQ2: How does brand knowledge affect this choice?

In the following section we will further elaborate on the chosen research design and describe the data collection process in more detail.

3.2 RESEARCH DESIGN

We pursued a quantitative survey-based experiment approach, distributed through Qualtrics Survey Software (Malthorta, 2010). In order to test whether it is possible to nudge consumers to choose sustainable items, we created a 2^3 full-factorial design where the nudge took the form of a product attribute. The other two attributes were brand and sustainability label. The 3 attributes were presented with 2 levels each, resulting in 8 product combinations. Overall the research design included the chosen attributes; (1) brand, (2) sustainable label and (3) nudge with two levels each; (1) known/unknown and (2)(3) yes/no: resulting in 2^3 different combinations of the attributes. We then measured the purchase likelihood of each of the eight compositions with the intent to estimate the inference about the partworths and

analyze how customers choices vary along the change in attribute levels (Malhorta, 2010).

Summarizing the above, we have:

Dependent Variable (DV)

- Purchase likelihood, measured on a 10-point Likert Scale

Independent Variable (IV)

- Brand (Known, Unknown)
- Sustainable label (Yes, No)
- Nudge (Yes, No)

Following, we will describe how each product combination was constructed, an example of which is presented in Fig. 1. For the independent variable brand, the items consisted of known and unknown brands. Which brands that were categorized as known and unknown brands was informally discussed with acquaintances and chosen by us. The different brands assumed to be known were Puma, Patagonia, Jack & Jones, Adidas, Peak, Fila, The North Face. The different brands assumed to be unknown were Icebreaker, 4F, Vaude, Joma, Endurance, Jack Wolfskin, Athleta, Cotton On Body, Dare2Be, Even & Odd and Colombia. For the independent variable sustainable label, half of the items showed a green label in the left corner of the picture saying “sustainable” or “bærekraftig” in Norwegian. This is as mentioned earlier put in place to distinguish the sustainable product from the others. A variable that was not included in the survey was price. We decided not to test the price, assuming that the price would vary together with the sustainability feature of the item. As mentioned, it is justified that sustainable products tend to offer better quality items that last longer and often use organic or other certified fabrics. Thus, it is more realistic that the sustainable products cost more.

The nudging attempt took the form of a phrase written below the clothing items with the goal of convincing the people to choose the target item (Cialdini, 2008). The chosen phrase “Most of our clients love this item” was created following the UN Environment Programme checklist for successful nudges (UNEP et al., 2020). This checklist consists of five different steps discussing the target behavior, context, design, effectiveness of the nudge and reflect & redesign. The chosen phrase was colored green to harmonize the sustainable labels. Research has shown that the

color green can often be associated with calmness, nature and environment (Clarke & Costall, 2015). Below, a more detailed explanation of the steps taken to create the nudge, following the checklist for successful nudges (UNEP et al., 2020). The first step was to choose the target behavior. The target behavior that we wanted to influence was for consumers to choose a sustainable option, among all the different alternatives. The second step was to understand the context and, especially, the barriers to behavior change. One possible barrier to this target behavior could be price, as sustainable items are often more expensive than non-sustainable ones. Price is an obstacle that is unlikely to be removed. Individual preferences could be another barrier. To tackle this barrier the items that were presented to participants, were kept as similar as possible. We only varied sustainability labels (yes or no) brand (unknown or known) and nudge (yes or no). Moving on to the third step, the design of the phrase was created to be short and precise with the goal of catching the participants' attention right away. Moreover, we aimed to elicit social influence. This has in fact been identified as one of the routes to influence sustainable behavior by White et al. (2019). Furthermore, the specific nudge was created to follow the peripheral route, in hope of people simply taking cues from the message choosing the target items (Petty & Cacioppo, 1986).

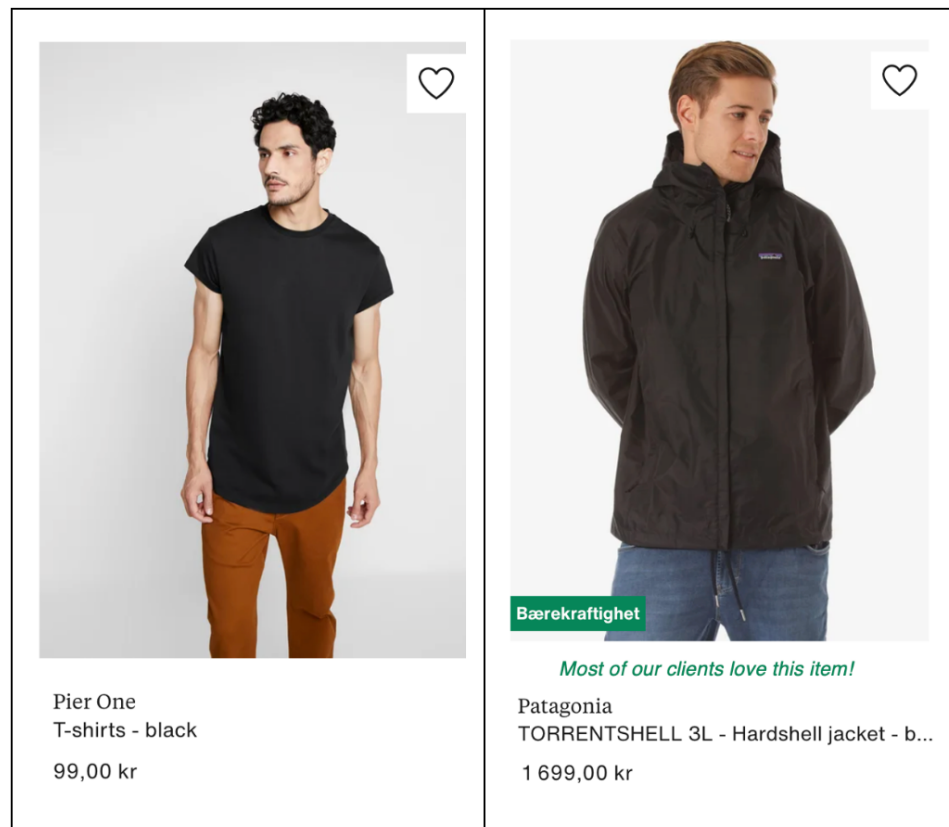


Fig. 1: Example of shopping items - An item with unknown brand, non-sustainable, without nudge on the left, and an item with known brand, sustainable and with the nudge on the right.

To estimate the customers purchase likelihood attached to the different attributes, we performed a conjoint analysis. Conjoint analysis is especially suitable to describe products and to further determine which attribute and attribute levels for each product is more appealing to the target audience (Janssens et al., 2008, p.417). By pursuing conjoint analysis, it also allows us to examine how the customer weighs one item against the others (Janssens et al., 2008). Pursuing a conjoint analysis has both its pros and cons. The pros imply that the respondents get to evaluate the entire product and not only one isolated attribute, and they have to make choices between attribute levels (Malhorta, 2010). This means that the respondents cannot say that all attributes are equally important. The cons entails that the respondents need to process multiple attributes simultaneously (Malhorta, 2010). To minimize the respondent evaluation task, the number of attributes is recommended to be within a limited number (Malhorta, 2010). In this study we are also interested in sorting participants into different groups based on their similarities (Janssens et al., 2008). To explore which attributes that are the most important for customers' purchase likelihood, we performed a cluster analysis. Cluster analysis is especially valuable in understanding to whom the nudging attempt works the best. The advantage of cluster analysis is that it is efficient to predict the performance of the combination of attributes (Malhorta, 2010). A disadvantage is that the analysis has no underlying knowledge of how the consumer actually behaves in reality. The simplicity of this method therefore needs to be recognized (Malhorta, 2010, p.631).

3.3 PARTICIPANTS SAMPLING

By pursuing a quantitative approach with an online survey, one can collect a wide section of participants from all over the country. Moreover, it is convenient, inexpensive and more effective to gather a wide section of participants from all over the country in a relatively short amount of time digitally. The participants we targeted were the typical Norwegian consumers, both females and males, familiar with online shopping. As a sampling technique, we followed a non-probability technique, recruiting the respondents through social media platforms such as Instagram, LinkedIn and Facebook. We also encouraged respondents to share the experiment with their networks and created a virtual snowball effect to reach a broader section of people from different places in Norway (Malhotra, 2010). This

is a typical convenience sampling technique that allowed us to reach a large majority of Norwegian respondents, which we were interested in. This sampling technique has both advantages and disadvantages. The advantages of virtual sampling is that it is easier to gather a large amount of responses. Also, participants tend to trust the researchers since the study is shared through their personal profile (Baltar & Brunet, 2012). The disadvantage is that it might limit the characteristics and demographics, such as gender, age, occupation and income (Baltar & Brunet, 2012). Theoretically, it is important to mention that it is not recommended to make any generalizations from this type of sample (Baltar & Brunet, 2012). However, as this study's purpose is to gather insight and useful data easily and efficiently from all over the country, a convenience sample is accepted and it therefore outweighs the disadvantages (Maholtra, 2010).

4. DATA COLLECTION

In this section we will present the structure of the experiment-based survey. Following, we will discuss the establishment of validity and reliability in quantitative research and how ethical considerations were assured. The section will end with the sample's description.

4.1 QUALTRICS EXPERIMENT/INTERVIEW STRUCTURE

After designing the survey we tested it on a small sample. We then collected their feedback to improve the survey and finally published it. The questionnaire is available in Appendix B. Following, we will present the structure of the survey. All participants were presented with the purpose of the research and had to accept to take part in it. To avoid fatigue and reduce participant mortality, we informed the participants that the survey would only take around five minutes. In addition a progressbar was implemented to show how long it was till the end of the survey. Furthermore, we ensured that the survey was optimized for both the computer, Ipad and mobile. Thereafter all participants got the option to choose their preferred online shopping section; female/male. The participants got directed to the main part of the survey showing the chosen shopping section with eight different training items per category. The different categories were t-shirts, pants/tights and

outerwear. Since we were reaching for a broader population in Norway we made sure to present items that appealed to most people.

Participants then had to rate each item based on their likelihood of purchase in a Likert Scale. Through this type of measurement respondents also had the opportunity to give more “neutral” answers. Malhorta (2010) argues that these questions are also easy to understand as well as simple to administer. The three rounds of questions were presented in a 10-point Likert Scale where 1= “I would definitely not buy it” and 10= “I would definitely buy it”. Based on earlier research it is assumed that a higher numerical scale avoids discrimination, opens up for more choices the respondents can choose from and gives the researcher the option for a stronger and more advanced analysis (Malhorta, 2010). To avoid any influential biases we tried to control for all of the different reasons why people may choose an item or the other. We presented items that were very similar in observable features. They all had the color black and were mostly plain except from the brand logo. Prices were also kept quite similar within the two main categories (sustainable and non-sustainable). Due to Zalando’s focus on sustainability we chose to take all photos from their webpages with the desire of creating a close-to-realistic shopping experience. To keep the participants focused, we presented the main part of the study first to ensure that we gathered the most important answers (Brace, 2018).

For the next and last part of the survey, we placed five questions related to demographics and shopping habits. If a participant dropped out here it was fortunately not much information lost. Additionally, we decided to place the demographic questions before the shopping habits to avoid participation biases (Shah, 2019). The three first questions were structured-based questions on a nominal scale related to age, occupation and income. Although the majority of questions in the first part were scaled on a 10-point Likert Scale, the fourth question asked the participants to rank the characteristics’ importance (price, brand, sustainable label, fashion trends and country of origin) on a 5-likert scale where 1= “Unimportant” and 5= “Very important”. A 5-point likert scale is in this case suitable and effective as we could allow for more neutral responses in contrast to the main part. In addition, since this is at the end of the survey it also makes it easier for the respondents to quickly answer. Finally, the last and fifth question was an open question related to other factors the participants might see as important when

shopping for clothing online. We chose to add this as the last question so the participant could express their opinions, add thoughts or comments in hope of getting other valuable and interesting input. The survey ended by thanking the respondents for their contribution.

4.2 ESTABLISHING VALIDITY & RELIABILITY IN QUANTITATIVE RESEARCH

As mentioned earlier, the survey explores online shopping with which the majority of Norwegian people are familiar with. External validity is therefore ensured as the setting is not too specific. In fact, we are focused on reaching a broad and diverse sample through the virtual snowball effect. For the limitation, we identify two threats to external validity. The brand evaluation was based on our own knowledge. By assuming ourselves that brands like Adidas, Patagonia and Nike were examples that could be categorized as popular brands and 4F, Icebreaker and Cotton On Body brands categorized as more unknown. This might be harder to control for external factors and external validity. The second threat might be the difference in experience when it comes to online shopping.

Following, we pursued a scale reliability test for both the purchase likelihood questions and the question related to characteristics. Cronbach's alpha measures internal consistency and is especially valuable when determining the reliability of multiple Likert questions (Janssens et al., 2008). Since we have questions measured on different scales, we ran two separate tests. For the 10-point Likert Scale the test revealed satisfactory levels showing Cronbach's alpha values equal or above .836 (Appendix C). In contrast, the 5-point likert scale revealed unsatisfactory results for levels of scale reliability with Cronbach's alpha values equal or above .268 (Appendix D). This may be due to the fact that the Cronbach alpha reliability test tends to underestimate the internal consistency of scales when there are fewer than ten items or there are not enough questions (Taber, 2018). This is something we had to keep in mind when doing the further analysis.

4.3 ETHICAL CONSIDERATIONS

Concerning the ethical considerations, the BI's "Checklist for use of personal information in a student assignment" was followed to ensure compliance with the

current regulations. Other considerations to mention is that participation was voluntary and we assured participants that all information was kept confidential as well as anonymous. Furthermore, everyone was informed with the purpose of the study and had to accept the participation to be able to move on to the start of the survey. All data from the survey were deleted once our thesis was submitted.

4.4 SAMPLE DESCRIPTION

After three weeks of collecting the data, we gathered 175 responses. From the number of collected responses, 78 were deleted due to incomplete responses and 1 due to not accepting to participate. Moreover, three participants gave the same score to each of the items, thus their answers were considered unreliable and removed. Hence, the final sample (N=92) consisted of 28 from the male section and 64 from the female section, with a preponderance of respondents between the ages of 26-33 (over 47%) and over 40 (almost 23%). This was expected given our convenience sampling method as we are around the same age. The majority of our respondents were recorded as employed, with almost 73% being fully employed and around 15% being partially employed. This indicates that a good amount of people are in the establishment phase of their life. When it comes to income, 28% of our sample earns between 500 000 and 700 000 NOK per year, which represents the median for Norway (SSB, 2022). 28% of our sample earns more than 700 000 NOK per year.

When it comes to the characteristics that participants value when they shop online, price is considered very important by over 35% of respondents, and the item that scores “very important” the most. Nearly 33% of respondents consider the country of origin not important. Moreover, the country of origin is the item that scores “unimportant” the most. Respondents consider sustainability labels as somewhat important (43%), but a good percentage (nearly 28%), consider it neutral. Over 29% of our sample considers current fashion trends somewhat important, although most of the sample considers them neutral to unimportant. Finally, brand is considered somewhat important by almost 49% of respondents.

5. DATA ANALYSIS AND RESULTS

After having collected and polished our data, we began performing a conjoint analysis followed by a cluster analysis. The conjoint analysis served to compute the utility function for each individual, and the cluster analysis to classify these individuals into clusters with similar characteristics.

5.1 CONJOINT ANALYSIS

We presented all individuals with 3 rounds of questions asking them to rate 8 items, then we computed the average score that each individual gave to each of the eight items. The data was subsequently imported on SPSS, where we generated an orthogonal design. The output of the orthogonal design is presented in Fig.4. We then computed the utilities of each factor, as well as the factors' interactions. The utilities have been computed following the design matrix for 2 to the power of 3 factorial design (Appendix E). For each column, to the sum of the scores of the four items with "+" we subtracted the sum of the scores of the four items with "-". The result was then divided by 8, since we took the average of the 4 items and then reported half of that measure, as per convention (Dunn, 2022). The computation has been repeated for all of the subjects (N=92) following the below 2³ factorial design matrix. Sustainability, nudge, and brand are the main effects, while sustainability * nudge (S*N), sustainability * brand (S*B), brand * nudge (B*N) and sustainability * nudge * brand (S*N*B) are the interaction effects.

Card List				
	Card ID	BRAND	SUSTAINABLE	NUDGE
1	1	known	sustainable	nudge
2	2	known	sustainable	no nudge
3	3	known	non sustainable	nudge
4	4	known	non sustainable	no nudge
5	5	unknown	non sustainable	nudge
6	6	unknown	sustainable	no nudge
7	7	unknown	non sustainable	no nudge
8	8	unknown	sustainable	nudge

Fig.4: Orthogonal design

Once we estimated all utilities, or regression coefficients, we averaged them out, resulting in our full model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_{12} X_1 X_2 + \beta_{13} X_1 X_3 + \beta_{23} X_2 X_3 + \beta_{123} X_1 X_2 X_3 + \epsilon$$

that becomes:

$$Y = 4,139 + 0,351 \text{ Brand} + (-0,225) \text{ Sustainability} + (-0,07) \text{ Nudge} + 0,003 B \cdot S + (-0,156) B \cdot N + 0,271 S \cdot N + 0,095 B \cdot S \cdot N + \epsilon$$

The higher utility value indicates preference for that level of the attribute. As we expected, a known brand has a higher utility compared to an unknown one. Moreover, the interaction between known brands and sustainability has a small yet positive utility. This means that if the two factors are both present, the total utility will slightly increase. On the contrary, when known brand and nudge are simultaneously present, the total utility decreases by 0,156. When it comes to sustainability, non-sustainable items have higher utility compared to sustainable ones. This is also not surprising, as we assumed that price varied together with sustainability and we know that price is a barrier to sustainable consumption. The items without the nudge attempt resulted in a slightly higher utility than those with the nudge attempt, contrary to our expectations. Yet, when both the factor sustainability and nudge are present, the overall utility increases by 0,271. This represents the second highest influence on overall preference. Finally, when the three factors are present, the utility increases slightly. The utility of each of the 8 item combinations can be calculated by adding the utility estimate of each of its features. The results are as follows:

Utility Estimate - Main			Utility Estimate - Interaction		Combinations	Total utility
BRAND	unknown	-0,35	B*S	0,003	U(NS)(NN) - unknown, non sustainable, no nudge	4,11
	known	0,35			K(NS)(NN) - known, non sustainable, no nudge	5,30
SUSTAINABLE	non sustainable	0,22	B*N	-0,156	US(NN) - unknown,sustainable, no nudge	3,30
	sustainable	-0,22			KS(NN) - known, sustainable, no nudge	4,13
NUDGE	no nudge	0,07	S*N	0,271	U(NS)N - unknown, non sustainable, nudge	3,92
	nudge	-0,07			K(NS)N - known, non sustainable, nudge	4,12
(Constant)		4,14	B*S*N	0,095	USN - unknown, sustainable, nudge	3,82
					KSN - known, sustainable, nudge	4,41

Fig.5: Utility estimates

The combination that results in the biggest utility is the known, non- sustainable, no nudge one (Fig. 5, green). The one that results in the lowest utility is instead the

unknown, sustainable no nudge one (Fig. 5, red). The factor that has the most influence on the overall preference is the brand, meaning that there is a big difference in preference for products that are or are not from known brands. The sustainability label plays similar roles in determining preference, while the nudge plays an almost insignificant role. The next step was that of using the computed utilities as input for cluster analysis.

5.2 CLUSTER ANALYSIS

To perform the cluster analysis we firstly look at the dendrogram (Appendix F), which suggests either two or four solutions. We decided to move forward with two solutions to get a more detailed look at the differences between participants. We began by performing a hierarchical clustering and then used the cluster centers as inputs for a K-mean clustering. As we can see from the cluster centers (Fig.6), the groups are quite similar across several dimensions, but they do differ in others. When it comes to cluster size (Appendix G), they are almost equally sized, except for cluster 3 that is slightly bigger.

	Final Cluster Centers			
	Cluster			
	1	2	3	4
GENDER	1	1	1	1
Brand (subtracted K to U)	.140350877	.879032258	-.158333333	.253787879
Sustainability (subtracted S to NS)	-.504385965	-.271505376	-.379166667	.223484848
Nudge (subtracted N to NN)	.021929825	-.244623656	.041666667	-.003787879
B*S	-.096491228	-.169354839	.108333333	.234848485
B*N	-.131578947	-.163978495	-.154166667	-.166666667
S*N	.140350877	.217381820	.395833333	.347209323
B*S*N	.043859649	.067204301	.204166667	.079545455
Age	3	3	4	4
Occupation	2	1	1	1
Income	2	4	5	5
Price	4	4	5	4
Fashion trends	3	4	2	2
Country of origin	2	3	1	4

Fig.6: Final cluster centers

Regression coefficients	Cluster			
	1	2	3	4
Brand	0,140	0,879	-0,158	0,254
Sustainability	-0,504	-0,272	-0,379	0,223
Nudge	0,022	-0,245	0,042	-0,004
B*S	-0,096	-0,169	0,108	0,235
B*N	-0,132	-0,164	-0,154	-0,167
S*N	0,140	0,217	0,396	0,347
B*S*N	0,044	0,067	0,204	0,080
Beta 0	4,066	4,272	3,788	4,333
Combinations				
U(NS)(NN) - unknown, non sustainable, no nudge	4,276	3,725	4,429	4,196
K(NS)(NN) - known, non sustainable, no nudge	5,101	6,285	4,613	4,726
US(NN) - unknown,sustainable, no nudge	3,268	3,221	3,071	3,638
KS(NN) - known, sustainable, no nudge	3,531	4,834	2,871	4,789
U(NS)N - unknown, non sustainable, nudge	4,390	3,264	4,438	3,986
K(NS)N - known, non sustainable, nudge	4,603	5,033	3,596	3,691
USN - unknown, sustainable, nudge	3,768	3,360	3,846	4,499
KSN - known, sustainable, nudge	3,680	4,586	3,846	5,302

Fig.7: Utilities of each combination for each cluster

Cluster 1 (Fig.8) is mainly composed of females in the age group 26-33, part-time employed and with an income between 100 000 and 300 000. For this cluster, the country of origin of clothing items is not important, fashion trends are indifferent, but price is important. Brand has a positive impact on utility, while the sustainability label and the nudge both have a negative impact on utility. Looking at the interactions (Fig.6), B*S and B*N both have a negative effect on utility while S*N and the three-factor interaction a positive one. The combination that yields the highest utility (Fig.7) for cluster one is the one composed by a known brand, non-sustainable item without the nudge attempt. On the contrary, the combination that yields the lowest utility for cluster 1 is the one made up of an unknown brand, sustainable item without the nudge attempt. To notice is that the second highest utility is given by the combination composed by a known brand, non-sustainable item with the nudge attempt. Looking at the change in utility (Appendix H) when moving from a no nudge to a nudge condition, we can see the most positive increase when the brand is unknown and the item is sustainable. When the brand is known and the item is non-sustainable however, adding the nudge will decrease the total utility.

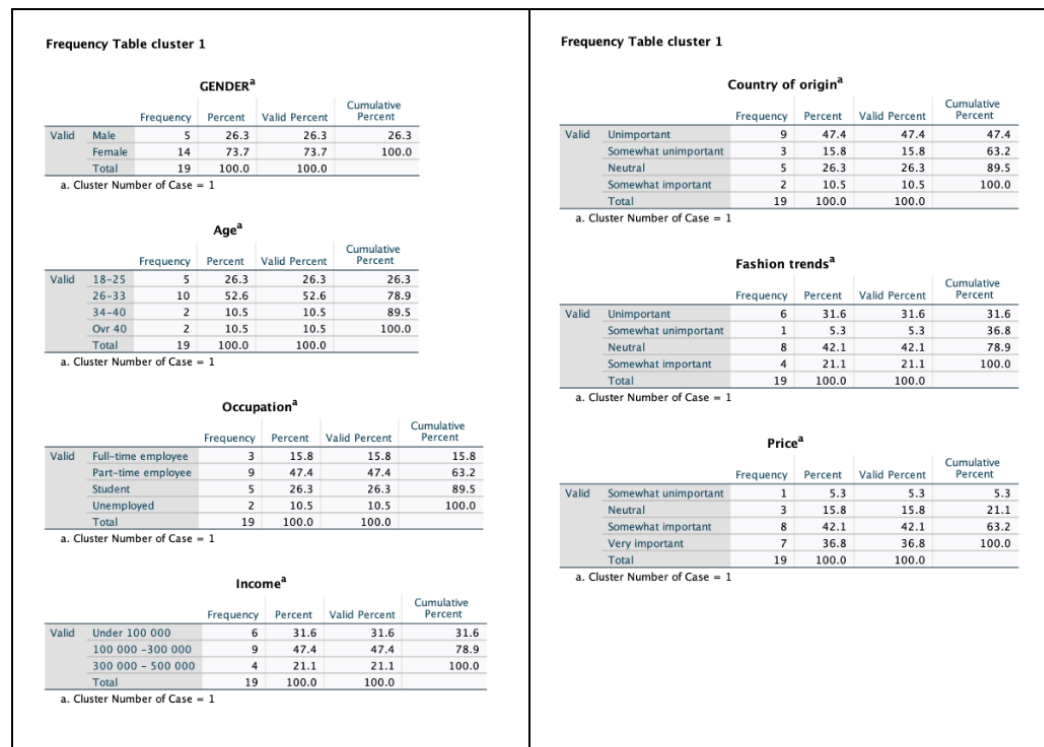


Fig. 8: Cluster 1, descriptive statistics

Cluster 2 (Fig.9) is again mainly composed of females in the age range 26-33, but mainly full-time employed and with a higher income that ranges between 500 000 and 700 000. Country of origin is almost equally split between neutral and somewhat important, fashion trends are considered somewhat important and price is important. Brand has a positive effect on utility, while the sustainability label and the nudge both have a negative effect on utility. Looking at the interactions (Fig.6), B*S and B*N both have a negative effect on utility while S*N and the three-factor interaction a positive one. Similarly to cluster one, the combination that yields the highest utility (Fig.7) in this cluster is the one composed by a known brand, non-sustainable item without the nudge attempt. On the contrary, the combination that yields the lowest utility for cluster 2 is the one made up of an unknown brand, sustainable item without the nudge attempt. Similarly, the second highest utility is given by the combination composed by a known brand, non-sustainable item with the nudge attempt. Looking at the change in utility (Appendix I) when adding the nudge, we can see that when the brand is either known or unknown and the item is sustainable, having the nudge attempt will decrease the total utility. This suggests that this cluster is not very receptive to the nudge attempt.

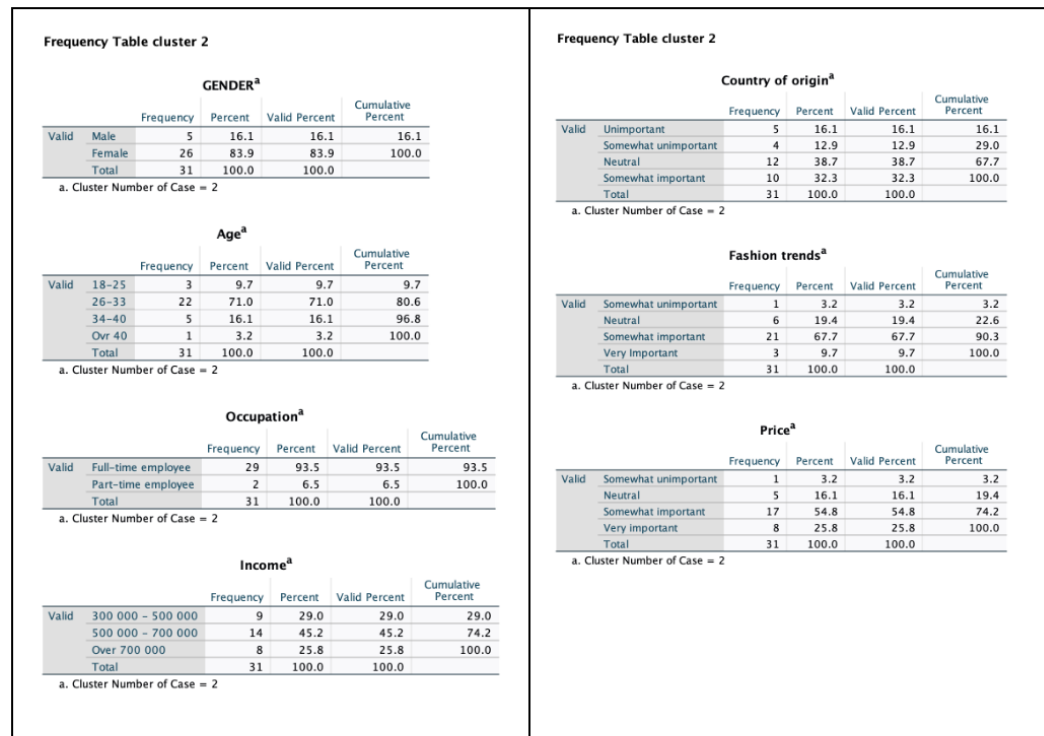


Fig. 9: Cluster 2, descriptive statistics

Cluster 3 (Fig.10) is equally split between females and males and age ranges between 26 and over 40. Cluster members work full time and have an income from 500 000 and above 700 000. The country of origin of clothing items is unimportant and so are fashion trends. Price however is very important. Brand and the sustainability label both have a negative impact on utility, while the nudge a positive one. The interaction (Fig.6) between brand and sustainability has a positive impact on utility and so does the interaction between sustainability and nudge as well as the three-factor interaction. The combination that yields the highest utility (Fig.7) for cluster three is the one composed by a known brand, non-sustainable item without the nudge attempt. On the contrary, the combination that yields the lowest utility for cluster 3 is the one made up of a known brand, non-sustainable item without the nudge attempt. To notice is that the second highest utility is given by the combination composed by an unknown brand, non-sustainable item with the nudge attempt. Finally, we can see a significant positive change in utility when the brand is either known or unknown and the item is sustainable. This suggests that the nudge attempt works better on sustainable items. Looking at the change in utility (Appendix J) when the brand is known and the item sustainable, adding the nudge will significantly increase the total utility. When the brand is known and the item non-sustainable however, adding the nudge will significantly decrease the utility.

This indicates that this cluster is receptive to the nudge especially when the item is sustainable.

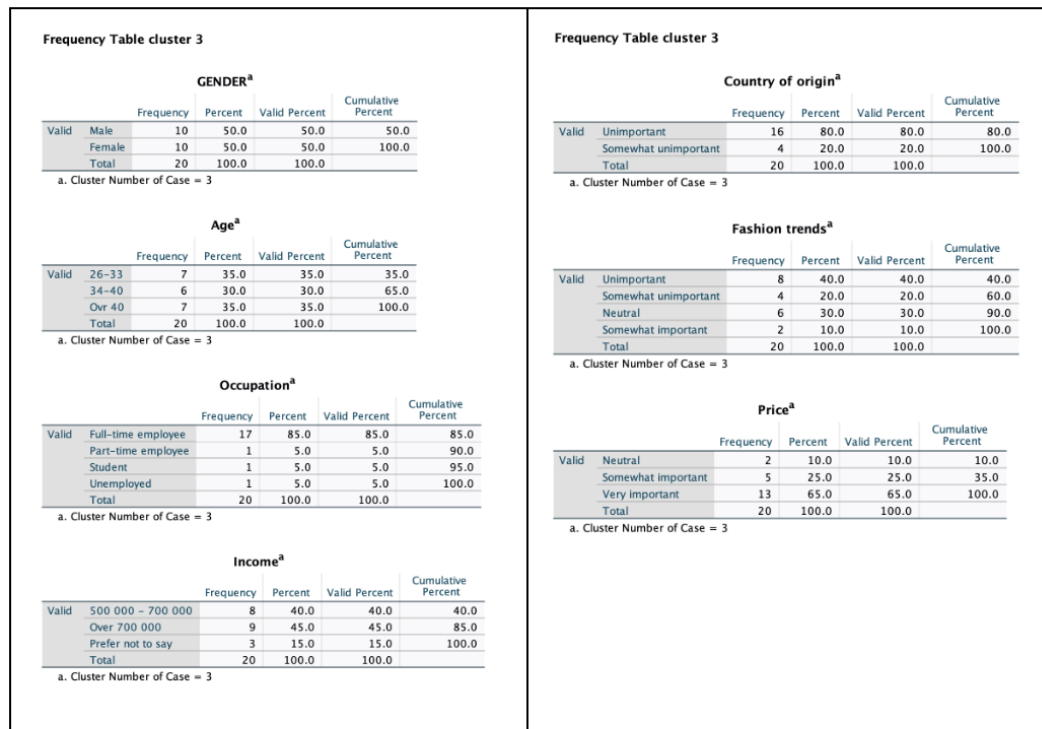


Fig. 10: Cluster 3, descriptive statistics

Cluster 4 (Fig.11) is composed mainly by women over 40, who work full time and earn above 700 000. The country of origin of clothing items is considered somewhat important and fashion trends unimportant. Price is instead considered important. Both brand and sustainability labels have a positive utility while the nudge has a slight negative one. Looking at the interactions (Fig.6), B*N has a negative impact on utility while B*S, S*N and the three-factor interaction a positive one. The combination that yields the highest utility (Fig. 7) for cluster four is the one composed by a known brand, sustainable item with the nudge attempt. Similarly to cluster one and two, the combination that yields the lowest utility for cluster four is the one composed of an unknown brand, sustainable item without the nudge attempt. Looking at the change in utility (Appendix K) when adding the nudge, all other conditions being equal, we can see that cluster 4 acts similarly to cluster 3. The cluster seems in fact more receptive to the nudge when the item is sustainable.

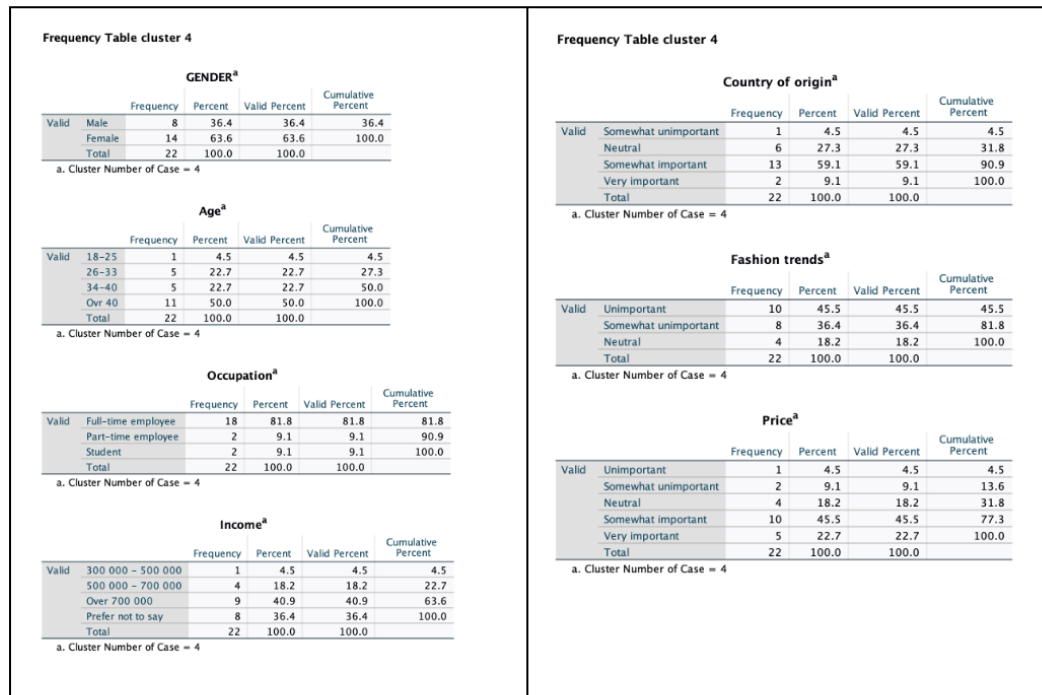


Fig. 11: Cluster 4, descriptive statistics

Among the common features of these 4 clusters, we can see that they all have positive utilities for the interaction term *Sustainability*Nudge* (Fig.6). Looking at the four clusters across brand and nudge utility in the scatter plot (Fig.12), we can see that they differ when it comes to it. Cluster 1 is characterized by low average nudge utility and low average brand utility. Cluster 2 is characterized by low average nudge utility and high average brand utility. Cluster 3 is characterized by medium average nudge utility and low average brand utility. Cluster 4 is characterized by very low average nudge utility and medium brand utility. A visual representation of it can be seen below. Finally, we need to note that according to the ANOVA table (Fig.13), the dimensions gender, nudge, B*N, S*N, and B*S*N, are not a good base for the formation of clusters. These dimensions in fact all have a $p_value > 0.5$.

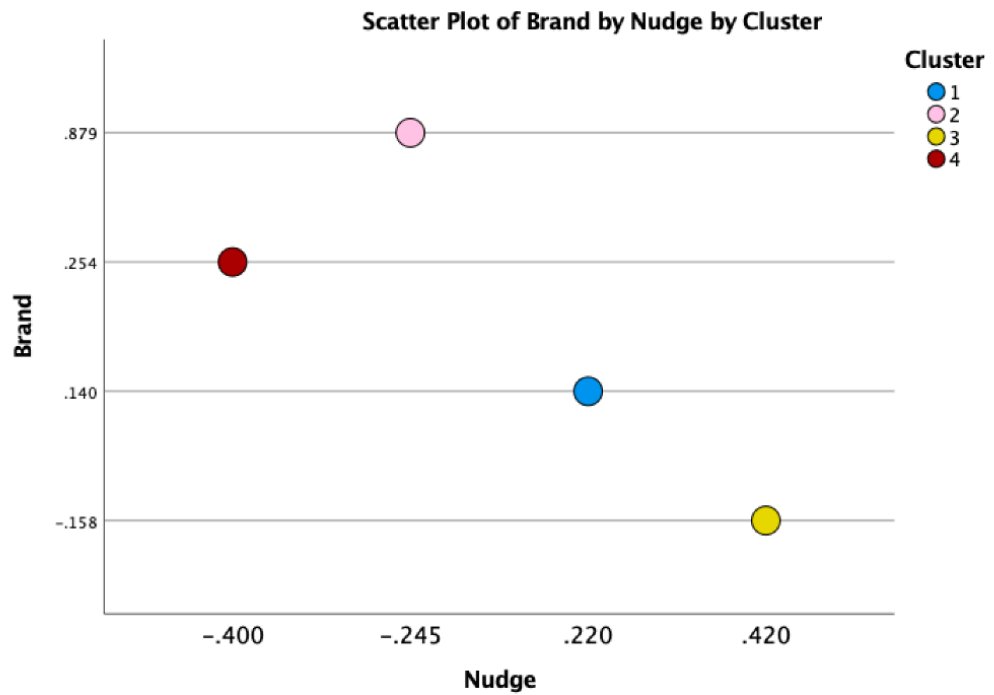


Fig. 12: Scatter plot of brand by nudge

ANOVA						
	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
GENDER	.503	3	.204	88	2.464	.068
Brand (subtracted K to U)	4.961	3	.267	88	18.569	<.001
Sustainability (subtracted S to NS)	2.150	3	.679	88	3.167	.028
Nudge (subtracted N to NN)	.484	3	.187	88	2.582	.058
B*S	.838	3	.177	88	4.746	.004
B*N	.005	3	.148	88	.036	.991
S*N	.284	3	.242	88	1.174	.324
B*S*N	.106	3	.178	88	.594	.620
Age	7.675	3	.678	88	11.312	<.001
Occupation	6.643	3	.415	88	15.997	<.001
Income	40.544	3	.595	88	68.186	<.001
Price	2.411	3	.728	88	3.312	.024
Fashion trends	22.922	3	.808	88	28.372	<.001
Country of origin	25.285	3	.785	88	32.225	<.001

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Fig. 13: ANOVA table

5.3 NUDGE FOCUS

It appears that the nudge attempt was successful at least for two clusters, and for all of them, to different degrees, when combined with sustainable items. In general, the nudge attempt did not appear to significantly increase utility. Combining the nudge with the sustainable items instead, seems to have a positive effect of purchase likelihood. There is a specific group of people for whom this was particularly true,

and that it cluster 3. This group seems in fact to rely more on the nudge attempt instead of brand, as a heuristic for choice making. The interaction between nudge and sustainability, moreover, was the strongest among the four clusters, indicating preference for these attribute levels. Considering that price for this cluster is very important, it appears that the nudge aided in overcoming price as a blocker to sustainable consumption. Although price was considered important, the positive utility of the interaction term sustainability*nudge (Fig.6) indicates that this cluster still preferred sustainable items. Thus, with the nudging attempt they opted for the more expensive items. Cluster 4 was also quite receptive to the nudge attempt, as we can see from (Fig.7), the combination that yields the highest utility is the known brand, sustainable item with the nudge attempt. Moreover, we can see positive changes in utility when adding the nudge, when the items are sustainable (Appendix K). Overall, the nudging attempt worked better on two of the four clusters. This shows that consumers react differently.

5.4 EVIDENCE OF ATTITUDE-BEHAVIOR GAP

From a descriptive perspective, we noticed that several individuals who rated the importance of sustainability labels as “somewhat important” or “very important” ended up with a negative utility of the sustainability label. Among the 51 individuals who reported the sustainability feature important, as many as 24 (47%) have a computed negative utility for the factor “sustainability”. This seems to indicate that at least some of the survey participants experienced the so-called attitude behavior-gap, discussed in the introduction part of the thesis. We decided to take this observation one step further, and performed a cluster analysis (following the same procedure as before) based on the dimensions of observed and reported importance of the sustainability feature of clothing items. As we can see by the scatterplot (Fig.14), there is indeed a group of people who defined the sustainability label as somewhat important. Yet, the computed utility of the factor sustainability was negative. The number of individuals belonging to this cluster is 24 (Appendix L), which is slightly bigger than those who acted consistently with respect to their values (cluster 1, 21 individuals).

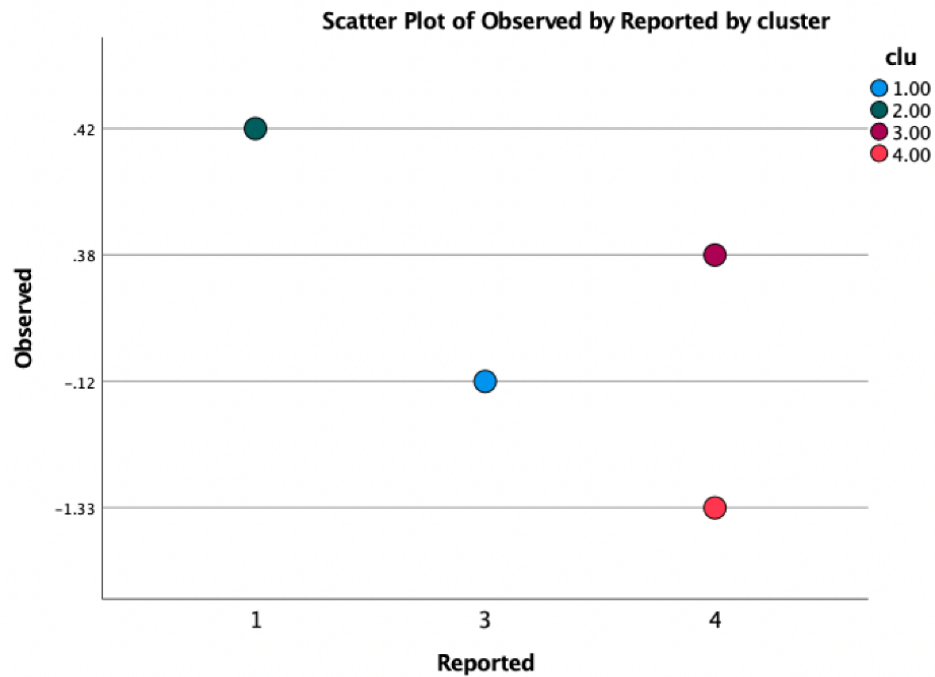


Fig. 14: Scatter plot of reported vs. observed sustainability

6. DISCUSSION AND IMPLICATIONS

This master thesis has explored the power of nudging applied to sustainable consumption and the effect of brand knowledge on product choice. Drawing on earlier research, this study attempts to close the attitude-behavior gap of sustainable consumption with the help of nudging. The following research questions have been addressed:

Can we nudge people into choosing more sustainable clothing options? (RQ1)
How does brand knowledge affect this choice? (RQ2)

In general, the nudge attempt on its own yielded a slightly negative effect on utility. Yet, when nudge is present together with the sustainability label, the overall utility increases. This was further confirmed when looking at the change in utility when adding the nudge to sustainable items, compared to the situation without the nudge. For three clusters (1, 3 and 4), the nudge resulted in an increase in utility. For cluster 2 instead, this was true only in the unknown brand condition. It appears therefore that the nudge attempt worked as intended. When looking at clusters across the dimension brand and nudge, we were able to identify that 3 clusters valued brand over nudge while one nudge over brand. This suggests that at least for a portion of

our respondents, nudge was superior to brand knowledge as a heuristic for choice in low involvement situations. The study moreover seems to confirm the presence of the attitude-behavior gap in sustainable consumption. A good portion of our respondents (26%) in fact declared to value sustainability labels. However, the observed utility of sustainability labels was negative. This study provides further evidence of brand as an important heuristic in choice making. Brand is in fact the factor with the highest utility score and the one that has the most influence on the overall preference. It appears that at least in low involvement situations, like our survey, people view brands as a good source of information and a shortcut to choice making (Keller, 2020). Not surprisingly, sustainability labels have a negative utility but this is likely due to our assumption that price varied together with the sustainability attribute. We know in fact from previous research that price is one of the main blockers to sustainable consumption (Gleim et al., 2013). This opens up to further research opportunities that we will discuss in the next section.

As for the managerial implications, this thesis suggests to use nudging as a possible persuasion tool to increase peoples purchase likelihood of sustainable items. Nudging is shown to be easy to implement and cost-effective. Implementing nudging as a persuasion technique, may increase marketers success in their advertising effort of sustainable items. Companies like Zalando, that aim at having 25% of their total range composed of sustainable items, can use nudge to support the sale of such items. Also, marketers should focus on targeting the ones that are more receptive to nudging. Nudge attempts in fact do not work equally on everyone and personal characteristics can make people more or less susceptible to persuasion attempts. Furthermore, this study confirms the importance of brand knowledge and contributes to the fact that brand is an important factor in choice making. Marketers should therefore prioritize brand awareness and brand image to achieve stronger brand knowledge.

7. LIMITATIONS AND FUTURE RESEARCH

Even though this study was successful in implementing nudge as a strategy to promote sustainable consumption, there could be several improvements that may enhance the results. Furthermore, there are various opportunities to be made in connection with future research.

7.1 LIMITATIONS

For the limitations it is important to mention that despite the fact that we tried to make the survey as realistic as possible, people did not have to spend their real money. Thus, decreasing consumers' degree of involvement. Also, this survey only tested nudging through one specific phrase; *“Most of our clients love this item!”*. With the phrase appealing to social influence, there are still several routes to shift consumers' behavior that may be explored. According to White et al. (2019), other phrases could have been created and tested to appeal to different factors. For example, to encourage people to be consistent with their own values, or express tangibility by making the sustainable outcome more concrete. To appeal to the individual self, the phrase could have been *“Choosing items that meet this criteria is a small but meaningful way to support causes you care about.”* (Zalando, 2022). In order to make the choice more tangible, the phrase could have been *“Products like this require up to 90% less water than conventional farming.”* Moreover, as the nudging phrase was colored in green with the attempt to create associations connected to the environment, this may also lead to consumers' misperception of the brand's environmental impact for the non-sustainable products.

An additional limitation of this study is that, although we collected a good amount of answers, unfortunately a lot of the responses occurred to be incomplete. This might be due to the quality of the survey, whereas people experienced it as time consuming. By presenting eight different choices with three different categories of items may have caused too much effort for some participants. As a result, we removed a big amount of participants from the final data, reducing the possible outcome. Another issue we identified was the quality of the images in Qualtrics. As Qualtrics has limited functions when it comes to presenting images, the pictures of the items were not fully optimized. This might have limited people's reaction to our nudging attempt. A final important part to highlight is the use of a convenience sample. When collecting data through social media several biases might occur. Although we manage to get a broad section of age and gender, this sample is not representative or accurate enough (Malhorta, 2010).

7.2 FUTURE RESEARCH

For future research we recommend using an eye tracking webcam to catch the respondent's attention in more detail. Thus, getting a better data analysis of where their focus is on customers choice making. In addition, we believe a pre-and post-test of questions involving participants' online shopping behavior, in addition to answering how familiar they are with each brand might lead to improvements. To avoid the bad quality of the pictures we would also recommend pursuing a close-to-real shopping experience by presenting an actual web page such as Zalando. Then the incomplete responses may decrease. Additionally, it would be interesting to test other types of items. For example, more occasional clothing items, or items from different industries like interior design items, food delivery services such as ODA, Foodora, as well as other online services. In addition, as this research only focuses on Norwegian people, it would be valuable to obtain a larger section of other nationalities to improve the generalizability. Finally, a potential future research would be to add price to the other presented attributes. As earlier research has tested the price barrier of buying sustainable products, a manipulation of pricing would be interesting to investigate. What if all prices were similar or if price varies across all items? This might reshape the purchase likelihood. Lastly, since a lot of participants commented on quality as an important factor when shopping for clothing in general, this would also be interesting for future research.

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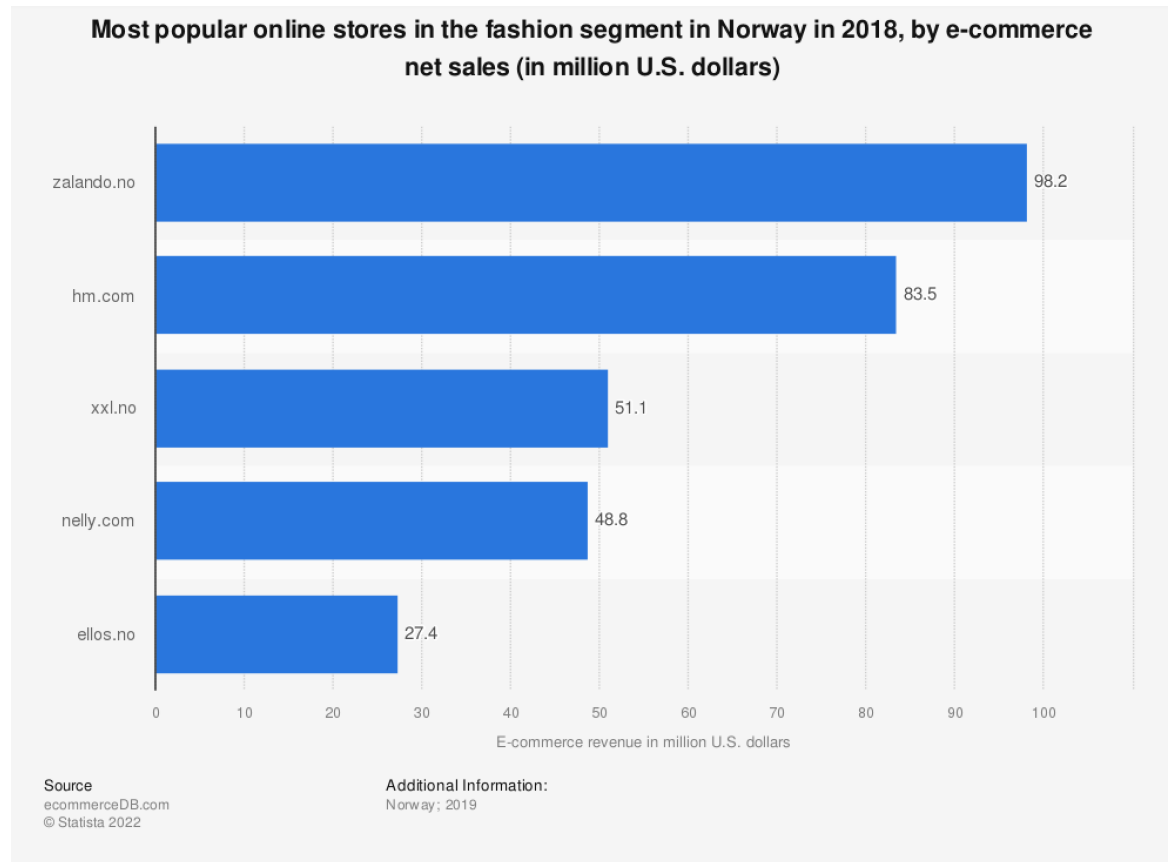
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APPENDIX

APPENDIX A: STATISTA



APPENDIX B: QUALTRICS SURVEY

BI HANDELSHØYSKOLEN

As part of our Master thesis, we are investigating the online shopping behaviour of consumers in Norway and we would really appreciate it if you could partake in this survey that will take around (5) minutes. The survey consists of a simple task that involves rating a few clothing items based on your likelihood of purchase. Please answer truthfully as there is no right or wrong answer.

All information will be kept confidential and you will not be associated with any research findings.

If you have any questions regarding the survey, or you are interested in the research results you can reach us out at:

Elena Padovan: elenapadovan@gmail.com
Katrine Østensen: katrine_95_@hotmail.com

We truly appreciate your contribution!

Elena and Katrine

By clicking yes, you accept to take part in the experiment

Yes
 No

0% 100%

→

Survey Powered By [Qualtrics](#)

BI HANDELSHØYSKOLEN

To show you items more consistent with your shopping habits, we would like to know in which section do you usually shop for training clothes?

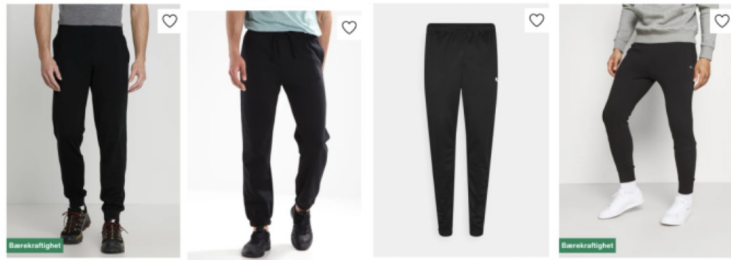
Male section
 Female section

0% 100%

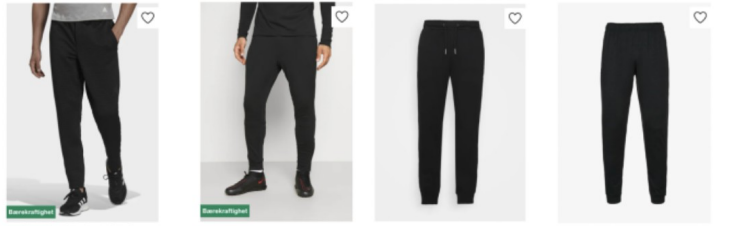
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Survey Powered By [Qualtrics](#)

Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

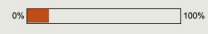


Most of our clients love this item!
 Icebreaker SHIFTER PANTS - Joggebukse - black 1 395,00 kr
 4F Joggebukse - black 349,00 kr
 Puma TEAMRISE TRAINING PANTS - Joggebuk... 249,00 kr
 Patagonia PLANET - Joggebukse - black 1 395,00 kr



Most of our clients love this item!
 Patagonia NINE TRAILS 1 395,00 kr
 Vaude SCOP1 - Bukse - black 1 395,00 kr
 Fila SALIANO PANTS - Joggebukse - black 449,00 kr
 Joma Joggebukse - black 249,00 kr

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
Icebreaker SHIFTER PANTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fila SALIANO PANTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Puma TEAMRISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia NINE TRAILS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4F Joggebukse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vaude SCOP1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia PLANET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Joma Joggebukse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

Peak Performance ALLUM LIGHT SLEEVE - T-skjorte til trenin...
449,00 kr

Pier One T-shirts - black
99,00 kr

Jack & Jones JJENOATEE CREW NECK NOOS - T-shirt...
129,00 kr

Endurance KULON PERFORMANCE TEE - T-skjorte L...
249,00 kr

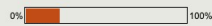
Icebreaker SPHERE II - T-shirts - BLACK
679,00 kr

pinqponq UNISEX - T-shirts - peat black
449,00 kr

Peak Performance ORIGINAL TEE - T-shirts med print - black
399,00 kr

The North Face TEE - T-shirts med print - black
399,00 kr

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
Peak Performance ALLUM LIGHT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Icebreaker SPHERE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peak Performance ORIGINAL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pier One t-shirt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jack & Jones JJENOATEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endurance KULON PERFORMANCE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
pinqponq UNISEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The North Face TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

Most of our clients love this item!

Patagonia TORRENTSHELL 3L - Hardshell jacket - b...
1 899,00 kr

Patagonia BAGGIES - Regnjakke - black
1 795,00 kr

Jack Wolfskin STORMY POINT - Regnjakke - black
1 495,00 kr

Jack Wolfskin PACK & GO OVERHEAD - Outdoorjakke ...
699,00 kr

Most of our clients love this item!

Vaude DROP JACKET III - Regnjakke - black uni
999,00 kr

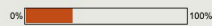
Columbia FLASH CHALLENGER™ ANORAK - Regn...
549,00 kr

adidas Performance OUTERIOR URBAN WIND.RDY - Hardshel...
699,00 kr

Most of our clients love this item!

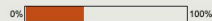
Nike Performance ACADEMY18 - Regnjakke - black/black/...
629,00 kr

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
adidas Performance OUTERIOR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Columbia FLASH CHALLENGER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vaude DROP JACKET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance ACADEMY18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia TORRENTSHELL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jack Wolfskin PACK & GO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jack Wolfskin STORMY POINT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia BAGGIES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
Nike Performance - ONE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia - CALIZA ROCK PANTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia - MAIPO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance - THE YOGA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Athleta - RAINIER UNBRUSHED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cotton On Body - SMOOTHING SIDE PANEL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Icebreaker - FASTRAY HIGH RISE TIGHTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cotton On Body - ULTRA SOFT CROSS OVER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



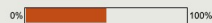
Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
Icebreaker - ZONEKNIT TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dare 2B - TRAIN TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Athleta - ULTIMATE TRAIN TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance - LAYER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance - DRY LEG TEE CREW PLUS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia - GO TO TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patagonia - MISSION REGENERATIVE PILOT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dare 2B - DEFY TEE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Imagine that you have to purchase training items. How likely is it that you would buy these products on 1-10, where 1 = I would definitely not buy it, and 10 = I would definitely buy it?

	I would definitely not buy it	2	3	4	5	6	7	8	9	I would definitely buy it
Adidas Performance - MISSION	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance - HOODIE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even & Odd - Sweatjakke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cotton On Body - THE ULTRA SOFT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nike Performance - ALL TIME	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Athleta - COZT KARMA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cotton On Body - OVERSIZED CREW	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adidas Performance - W ZNE FZ RDY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



In the last section we are going to ask you some background questions and questions related to your shopping habits. Rest assured that all of your answers will be treated with the utmost confidentiality and that you will not be associated with any research findings.

What is your age?

- Under 18
- 18 - 25
- 26 - 33
- 34 - 40
- Over 40

What is your main current occupation?

- Full-time employee
- Part-time employee
- Student
- Unemployed

What is your yearly income?

- Under 100 000
- 100 000-300 000
- 300 000-500 000
- 500 000-700 000
- Over 700 000
- Prefer not to say

What characteristics do you consider important when you shop for clothing?

	Unimportant	Somewhat unimportant	Neutral	Somewhat important	Very important
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability label	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current fashion trends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is there anything else you consider important when shopping for clothing?



APPENDIX C: Reliability statistics 10-point Likert scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.836	.837	8

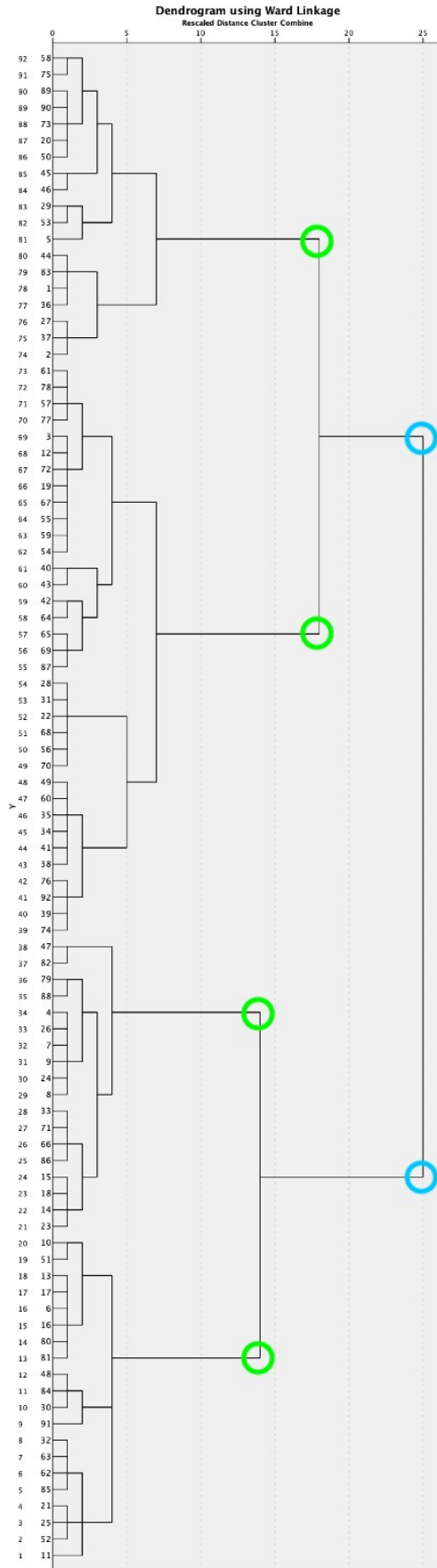
APPENDIX D: Reliability statistics 5-point Likert scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.268	.213	5

APPENDIX E: DESIGN MATRIX

	Sustainability	Nudge	Brand	S*N	S*B	N*B	S*N*B
1	-	-	-	+	+	+	-
2	+	-	-	-	-	+	+
3	-	+	-	-	+	-	+
4	+	+	-	+	-	-	-
5	-	-	+	+	-	-	+
6	+	-	+	-	+	-	-
7	-	+	+	-	-	+	-
8	+	+	+	+	+	+	+

APPENDIX F: DENDROGRAM



APPENDIX G: NUMBER OF CASES IN EACH CLUSTER IN GENERAL

Number of Cases in each Cluster

Cluster	1	19.000
	2	31.000
	3	20.000
	4	22.000
Valid		92.000
Missing		.000

APPENDIX H: CLUSTER 1 – CHANGE IN UTILITY

Cluster 1	Change in utility	
U(NS)(NN) - unknown, non sustainable, no nudge	4,276	0,114
U(NS)N - unknown, non sustainable, nudge	4,390	
K(NS)(NN) - known, non sustainable, no nudge	5,101	-0,500
K(NS)N - known, non sustainable, nudge	4,601	
US(NN) - unknown,sustainable, no nudge	3,268	0,500
USN - unknown, sustainable, nudge	3,768	
KS(NN) - known, sustainable, no nudge	3,531	0,149
KSN - known, sustainable, nudge	3,680	

APPENDIX I: CLUSTER 2 – CHANGE IN UTILITY

Cluster 2	Change in utility	
U(NS)(NN) - unknown, non sustainable, no nudge	3,725	-0,462
U(NS)N - unknown, non sustainable, nudge	3,264	
K(NS)(NN) - known, non sustainable, no nudge	6,285	-1,252
K(NS)N - known, non sustainable, nudge	5,033	
US(NN) - unknown,sustainable, no nudge	3,221	0,139
USN - unknown, sustainable, nudge	3,360	
KS(NN) - known, sustainable, no nudge	4,834	-0,248
KSN - known, sustainable, nudge	4,586	

APPENDIX J: CLUSTER 3 – CHANGE IN UTILITY

Cluster 3		Change in utility
U(NS)(NN) - unknown, non sustainable, no nudge	4,429	0,008
U(NS)N - unknown, non sustainable, nudge	4,438	
K(NS)(NN) - known, non sustainable, no nudge	4,613	-1,017
K(NS)N - known, non sustainable, nudge	3,596	
US(NN) - unknown,sustainable, no nudge	3,071	0,775
USN - unknown, sustainable, nudge	3,846	
KS(NN) - known, sustainable, no nudge	2,871	0,975
KSN - known, sustainable, nudge	3,846	

APPENDIX K: CLUSTER 4 – CHANGE IN UTILITY

Cluster 4		Change in utility
U(NS)(NN) - unknown, non sustainable, no nudge	4,196	-0,210
U(NS)N - unknown, non sustainable, nudge	3,986	
K(NS)(NN) - known, non sustainable, no nudge	4,726	-1,035
K(NS)N - known, non sustainable, nudge	3,691	
US(NN) - unknown,sustainable, no nudge	3,638	0,861
USN - unknown, sustainable, nudge	4,499	
KS(NN) - known, sustainable, no nudge	4,789	0,513
KSN - known, sustainable, nudge	5,302	

APPENDIX L: NUMBER OF CASES IN EACH CLUSTER BY SUSTAINABILITY

Number of Cases in each Cluster		
Cluster	1	21.000
	2	12.000
	3	35.000
	4	24.000
Valid		92.000
Missing		.000