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Executive Summary

This master thesis addresses the attitude-behavior gap among sustainable products and the effects of supply chain transparency. This will give us an indication of whether companies need to have more transparency in the future and give the consumer insight into the entire supply chain. The purpose of our research is to understand the gap between consumers' ethical intentions and actual buying behavior for green products. Therefore, we want to investigate whether companies should enhance the level of transparency regarding their supply chain and we have prepared the following research question: *Does supply chain transparency reduce the attitude-behavior gap for sustainable products by affecting perception of utilitarian and hedonic value?*

Furthermore, the literature review forms the basis for further methodology and analysis in the research. Based on previous findings, we have developed a research model that illustrates our understanding of the causal and correlational patterns across the chosen topic. Therefore, we suggest that supply chain transparency will act as a moderator of the effect of eco-labels on perceived utilitarian value, perceived hedonic value and attitude towards the brand. Further, we suggest that perceived utilitarian and hedonic value will mediate the effect of eco-labels on attitude towards the brand.

Further, a methodological description forms the basis for the study and the results. To answer our research question, we have chosen to formulate six hypotheses. We find it appropriate to conduct an experiment with an attached quantitative questionnaire, as we want to draw relatively certain conclusions about how different variables will affect attitude towards the brand. To analyze the result from the main study and understand the relation between the variables in the research model, we conducted a regression analysis, mediation analysis and a 2x3 factorial between-subjects ANOVA.

Our findings indicate that it can be favorable to obtain an eco-label on a brand's product, if the purpose is to enhance attitudes towards the brand. Further, our findings indicate that if the supply chain information became too heavy or complex for the consumer, the enhanced level of information had a negative effect rather than positive in terms of attitude towards the brand. Based on the results from the analyzes, we conclusively discuss the possibilities within supply chain transparency and whether it will have any effect on the attitude-behavior gap among sustainable products.

1.0 Introduction

1.1 Context

Over the last decade, a growing awareness of climate change and global warming has led to a change in consumer behavior. As a result, consumers are looking for greener alternatives to reduce their environmental impact and improve their lifestyles. Today, consumers demand a wider range of green alternatives and socially responsible companies. Consequently, companies need to react to this shift in consumer behavior by focusing on the growing needs for sustainable products (Borin et al., 2013). In fact, according to a study by McKinsey (Granskog et al., 2020), 67% of consumers express that the use of sustainable materials is an important purchasing factor, and 63% of consumers express the importance of a brand's promotions of sustainability in a purchasing decision.

To meet consumer demands, it is becoming increasingly common for companies to apply for green-certified labels, or eco-labels. With an eco-label, companies can clarify which products are environmentally friendly and at the same time differentiate green and non-green products (Testa et al., 2013). By using the official eco-labels, you can secure that the company's products meet professionally developed environmental requirements (Svaneriket, 2022) and facilitate more sustainable choices in consumers' purchase decisions. In Norway, the most well-known certified label is "The Nordic Swan" and their purpose is to make it easier for consumers to choose sustainable goods and services. Certified eco-labels are thus often used to minimize consumer confusion and increase consumer trust. The Nordic Swan has been commonly used within product categories such as cleaning products, household items and textiles (Svaneriket, 2022), but is now being adopted in other industries. In the last decade, global companies such as L'Oréal have introduced "greener" alternatives with eco-labels (L'Oréal, 2022). An example of such a product is Water Lover Sun Milk by Biotherm – a sunscreen developed with the Nordic Swan label, to meet consumer demands for products with a responsible environmental footprint (Downs et al. 2009).

The rising popularity of eco-labels has led to an increased interest for the topic within the marketing literature. Researchers have discovered that eco-labeling does play an important role in purchasing decisions (Testa, 2013). However, several researchers prove that there is a gap between consumers' ethical

intentions and their actual buying behavior of green products (Luchs et al., 2010). A challenge for companies is that consumers have become more aware and educated about sustainability and have been found to be skeptical towards green products and eco-labels (Banerjee & Salomon, 2003). In addition, consumers want to know more about where and how the products they buy are made (Kraft & Zheng, 2021). Thus, companies can benefit from increased transparency in the supply chain, which could possibly contribute to building trust among consumers and enhance purchase intention. Increasing demand for authenticity and accountability could also mean that organizations must cooperate with each other to “clean up” the supply chain - potentially affecting efficiency, profitability and sustainability.

With our research, we want to understand the gap between consumers' ethical intentions and actual buying behavior for green products. Therefore, we want to investigate whether companies need to have more transparency in the future and give the consumer insight into the entire supply chain. By researching how we can close the attitude-behavior gap within supply chain transparency, we hope to understand the complexity of marketing products as sustainable, to contribute to the existing literature. Thus, this research outlines how we intend to further reduce the attitude-behavior gap in green consumerism. Based on the areas highlighted above, we present the following research question:

Does supply chain transparency reduce the attitude-behavior gap for sustainable products by affecting perception of utilitarian and hedonic value?

1.2 Structure

In this thesis, we will first introduce our research model and then present a literature review outlining our theoretical approach to solving the identified gap in the literature. The literature review will give us an overview of existing research on the topic of sustainable products, the impact of certified green labels, hedonic and utilitarian value, and the effect of supply chain transparency. Throughout the literature review, our hypotheses will be presented. Further, the research design and methodology will be covered. Thereafter, we will combine a general discussion from the results of the study. Lastly, we will discuss theoretical and managerial implications, acknowledge limitations, provide suggestions for further research and present our conclusion.

2.0 Literature Review

Empirical evidence shows that consumers are more and more attracted by the values of ethical consumerism, and the public interest in sustainable products is increasing (Carrington et al., 2010; Jung et al., 2020). The current trend of ethical and sustainable consumption is often based on the assumption that there has been a change in consumers' values and norms in recent years (Govind et al., 2019), and thus, businesses are evolving their business models and marketing strategies to reflect this change. In order to meet consumer demands and improve their competitive advantage, companies have started to adopt eco-labeling programs in recent decades (Moon et al., 2017). Eco-labels are commonly being used to lend credibility to environmental claims, with a focus on signaling the environmental orientation of the company (Stefan & Paul, 2008). However, previous research has found that the positive attitudes towards sustainable products are inconsistent with consumers' behavioral intentions (Bernardes et al., 2018; Jung et al., 2020). Throughout this paper, we wish to investigate the antecedents of the attitude-behavior gap.

The attitude-behavior gap suggests that there is something getting in the way of consumers' willingness to purchase green products – even though their attitudes towards green products are positive. Looking at previous research of eco-labels, the findings are somewhat contradicting. While some state that eco-labels are being used to make a company more credible (Stefan & Paul, 2008), others amplify the risk of consumer confusion and skepticism after being exposed to a product with an eco-label – suggesting that the consumer's attitude towards the brand gets affected negatively (Grunert et al., 2014; Moon et al., 2017; Roheim & Zhang, 2018). In addition, other findings in the literature review indicate that the widespread use of green claims make consumers perceive the brand as unreliable – ultimately decreasing purchase intention (Banerjee & Salomon, 2003). Further, the so-called “sustainability liability” suggests that eco-labels might make consumers perceive the product as lesser in functional quality, as they tend to believe that resources have been diverted from product quality to make it eco-friendly (Luchs et al. 2010). These findings indicate that environmentally friendly products appear as less effective, and thus, less desirable - suggesting that consumers would be less willing to purchase eco-labeled products.

However, researchers have found that environmental knowledge about products is a significant predictor of green purchase intention (D'Souza et al.,

2007) and that making environmental information accessible to the market can create a competitive advantage (Testa et al., 2014; Francisco & Swanson, 2018). In this paper, we therefore wish to introduce supply chain transparency as a possible influencing factor to reduce the attitude-behavior gap. We suggest that supply chain transparency will act as a moderator of the effect of eco-labels on perceived utilitarian value, perceived hedonic value and attitude towards the brand. Further, we suggest that perceived utilitarian and hedonic value will mediate the effect of eco-labels on attitude towards the brand. Based on our findings, we have developed a conceptual framework that illustrates our understanding of the causal and correlational patterns across the chosen topic. To summarize our conceptual framework, we present the following research model (Figure 1):

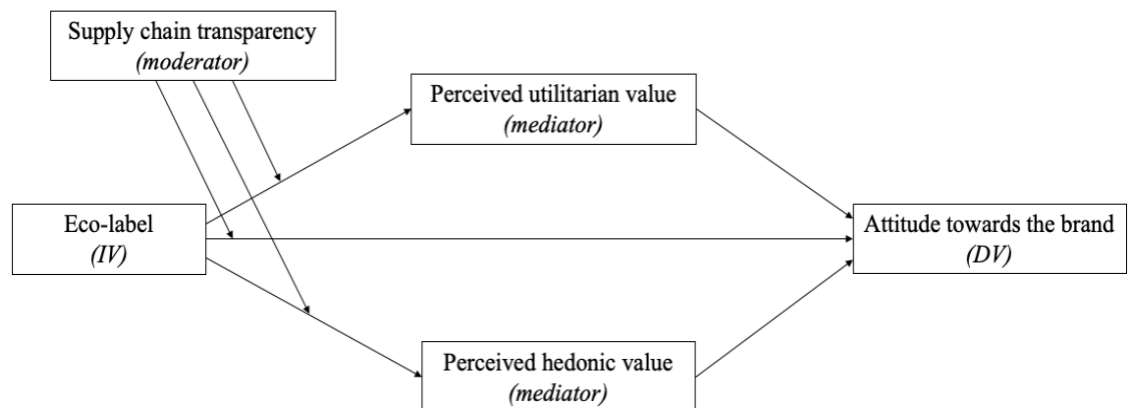


Figure 1. Research model.

In the next sections, we will review relevant literature on the topics of the attitude-behavior gap, perception of eco-labels, the “sustainability liability” and the possibilities within supply chain transparency. Throughout the sections, we will present our hypotheses that will be tested in the paper.

2.1 The Attitude-Behavior Gap

Harrison et al. (2005) describe ethical consumption as purchasing and consumption that considerate societal and animal welfare, as well as environmental concerns. Ethical and sustainable products still only represent a niche market, as the adoption rates for such products are low on a global scale

(Govind et al., 2019). A study by Cowe and Williams (2000) found that around 30% of consumers claim to care about ethical consumption, but only 3% of all purchases reflect this attitude – coining the “30:3” phenomenon (Govind et al., 2019). The gap between consumers’ attitudes and behavior has been studied across various topics in literature and is often referred to as the attitude-behavior gap (e.g., Bernardes et al., 2018), intention-action gap (e.g., Kilian and Mann, 2021) or the value-action gap (e.g., Chai et al., 2015). Previous studies have provided several explanations regarding the factors that determine the gap. Carrington et al. (2014) and Hassan et al. (2014) claim that individual factors such as demographics or other psychological factors create the gap. Various other researchers (Barnett et al., 2005; Jackson, 2005; Moraes et al., 2012; Jung et al., 2020) claim that sustainable behaviors are constrained by personal and psychological barriers, caused by individual and shared social opinions, norms, relations and values. Another possible explanation for the existence of the gap is provided by Connolly and Prothero (2003) who claim that consumers lack awareness of how their consumption contributes to social and environmental problems, and therefore refuse to accept their role in the problem itself. Further, Shen et al. (2013) found that various situational factors such as product design or brand names might influence purchase decisions, as consumers often change their minds at the time of the purchase – even though they had other intentions. Thus, the attitude-behavior gap has been widely studied in previous research. However, the varying results imply uncertainty regarding the antecedents of the gap.

2.2 The Effect of Eco-labels

Eco-labeling is when a distinct label is used to make consumers aware that the product has gone through a production process that fulfills various environmental standards – primarily used as a marketing tool to attract new customers and provide more relevant information about the product (Chamorro & Bañegil, 2006). Examples of such labels include the Green Seal in America, The Blue Angel in Germany, and the Nordic Swan in The Nordics. The general idea is that the eco-label will affect the purchase decision of the consumer, and the popularity of “green products” indicate that firms believe that consumers are willing to pay more for environmentally friendly products (Bjørner et al., 2004). Previous research has also supported this assumption, as studies have found that eco-labels

are typically well-received by consumers (Atkinson & Rosenthal, 2014; Testa et al., 2015).

2.2.1 Skepticism of Eco-labels

Despite many potential advantages of eco-labels, various researchers have amplified the risk of consumer confusion, as many different eco-labels make it difficult for consumers to make use of the provided information (Grunert et al., 2014; Moon et al., 2017; Roheim & Zhang, 2018). Researchers such as Banerjee and Salomon (2003) have also stated that the widespread use of environmental claims have caused consumers to perceive them as unreliable, and thus, not contributing to more sales in terms of “green” products. Peattie and Crane (2005) further emphasize greenwashing – the process of providing misleading information about a company’s environmental impact – as a factor to increase consumer skepticism around eco-labels. Skepticism and confusion have been found to be related to negative emotions (Moon et al., 2017), which arguably can be related to decreased purchase intention and a less favorable attitude towards the brand. Based on these findings, we present the following hypothesis:

H1: The presence of an *eco-label* will negatively affect consumers’ *attitude towards the brand*.

2.3 The Sustainability Liability

Previous research has highlighted the importance of how perceived utilitarian and hedonic value may contribute to the consumer decision process. Utilitarian value is said to be cognitively driven, based on functional and instrumental goals – whereas hedonic value is primarily affectively driven, based on sensory or experiential pleasure (Longoni & Cian, 2022). The relative weight between these two dimensions have been studied in previous research, where Chitturi et al. (2007) state that consumers attach greater importance to hedonic value, but only after a “necessary” level of functionality is met.

With the rise of sustainable and environmentally friendly products, several researchers have observed a phenomenon where consumers are more likely to perceive environmentally friendly products as less effective and lower in functional quality (Luchs et al., 2010; Lin & Chang, 2012; Newman et al., 2014).

A study by Newman et al. (2014) found that this perception is related to the company's intention to make the product more sustainable, where consumers are less likely to purchase a green product if the company intentionally made the product more sustainable – compared to when the environmental benefit occurred as an unintended side effect. The researchers further found this result to be explained by consumers' perceptions of resource allocation, where sustainable product enhancements lead consumers to believe that important resources have been diverted from product quality to make it eco-friendly. The notion of tradeoffs among quality and sustainability have also been examined by Luchs et al. (2010), where their studies found that people perceive environmentally friendly products as less effective and therefore less desirable. Thus, consumers tend to value functionality and environmental friendliness differently, where ethicality is associated with gentleness-related attributes, such as “safe”, “friendly”, “protective” and even “weak”. Contrarily, non-ethicality was found to be related to effectiveness and “getting the job done”. These findings suggest that consumers value environmental friendliness in “gentle” product categories, such as facial soaps, body lotions and baby shampoo, whereas environmental friendliness is less valued in “strong” product categories such as hand sanitizers, cleaning products and car tires (Luchs et al., 2010). In order to achieve a certain result, consumers might therefore choose a less sustainable alternative – also referred to as the “sustainability liability” (Luchs et al., 2010). Adding to the literature on this effect, Lin and Chang (2012) found that consumers use more of an environmentally friendly product in comparison with its conventional counterpart. The researchers argue this effect to be driven by consumers' perception of effectiveness, which leads to overuse of green products. Thus, by perceiving a green product as less effective, the launch of sustainable products may lead to an unintended, detrimental effect - that can be argued as the opposite of environmentally friendly (Lin & Chang, 2012). Consistent with previous research, we use the term “utilitarian value” to refer to the functional benefits of the product. Based on the findings above, we present the following hypothesis:

H2a: *Perceived utilitarian value* will mediate the relationship between the presence of an *eco-label* and *attitude towards the brand*, where an *eco-label* combined with low perceived utilitarian value will lead to a more negative attitude towards the brand.

Further, we refer to the findings by Chitturi et al. (2007), where consumers also attach a great importance to the hedonic dimension of a product when making a purchase decision. Eco-labels have been found to be well-received by consumers (Atkinson & Rosenthal, 2014; Testa et al., 2015), and although we hypothesize that the direct effect on attitude towards the brand is negative (H1), we find it likely that eco-labels will create positive emotions among consumers as they can perceive it as having made a responsible and ethical purchase. Consistent with previous research, we use the term “hedonic value” to refer to the affective benefits of the product. Thus, we present the following hypothesis:

H2b: *Perceived hedonic value* will mediate the relationship between the presence of an *eco-label* and *attitude towards the brand*, where an eco-label combined with high perceived hedonic value will lead to a more positive attitude towards the brand.

2.4 The Possibilities within Supply Chain Transparency

In the age of enlightened customers who demand considerable information about the products they purchase, researchers have started to investigate the possibilities within supply chain transparency as a marketing tool (e.g., Francisco & Swanson, 2018; Sodhi & Tang, 2018). Supply chain transparency embodies the concept of making information readily available to end-users and firms in the supply chain (Francisco & Swanson, 2018). Tracking the transactions throughout a supply chain have up until now been considered quite challenging, but through modern technology such as blockchain, companies now have the opportunity of obtaining and using information about all transactions in the supply chain (Francisco & Swanson, 2018). Blockchain technology, often mentioned in relation to Bitcoin cryptocurrency, is an open-sourced, decentralized, distributed database for storing information. This type of technology allows two parties to transact using linked ledgers called blockchains, where the transactions are irreversible - that means, viewable for everyone and permanently recorded (Francisco & Swanson, 2018). By sharing the transaction information throughout the supply chain, asymmetry between the company and the consumer can be reduced (Chapman, 1995) - allowing consumers to make informed evaluations of the company’s products.

Several studies have found that consumers are more willing to purchase products from transparent companies (Bhaduri & Ha-Brookshire, 2011; Testa et al., 2015), where transparency tends to be connected to characteristics such as accountability (Dubbink, 2008) and trust (Augustine, 2012; Sodhi & Tang, 2018). An example of a company using supply chain transparency as a part of their marketing strategy is the American apparel company Patagonia. Through their program “the footprint chronicles”, the company discloses information about contract manufacturers as well as suppliers of raw materials such as wool, down and cotton (Patagonia, 2022). Another example is the Kering Group, owner of luxury brands such as Gucci, Saint Laurent and Balenciaga. The company discloses various detailed supply chain information in their online “Environmental Profit and Loss Statement”, such as information about water consumption, land use, air and water pollution and gas emissions (Kering Corporate, 2020). However, it can be argued that there is still a lot of research lacking in the area of supply chain transparency as a marketing tool, as the concept has only been adopted by a small number of companies. The information is also often only made accessible through company reports or through websites – making it challenging for consumers to find the information. This can be argued as a limitation with the current use of supply chain transparency as a marketing tool, as previous research has found that if consumers perceive it as too costly or time consuming to acquire supply chain information, the purchase intention of sustainable products will be reduced (Kärnä et al., 2001). Little research has been found regarding consumers’ responses to making the supply chain information easily accessible – such as on product packaging or in-store. Moon et al. (2017) further suggest that marketing managers should change the way the environmental information is described on the product to educate consumers about the eco-label, reduce the risk of confusion and change their preconceived beliefs. Thus, studies that investigate the effects of easy-to-understand supply chain information on consumers’ purchase behavior should be of interest in new areas of marketing research.

As previous research has found that increased supply chain information allows consumers to make more informed decisions (Chapman, 1995), we find it probable that consumers will perceive the functional quality as higher after being presented with more information about the product. By sharing supply chain information externally, the effect on perceived utilitarian value could increase, as

consumers gain a greater understanding of actual tradeoffs to make the product more sustainable. Based on these findings, we hypothesize the following:

H3a: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *perceived utilitarian value*, where an eco-label combined with a high level of supply chain transparency will lead to higher perceived utilitarian value.

Thus, we expect that the moderator will reverse the effect of eco-labels on perceived utilitarian value - where the interaction effect of an eco-label and a high level of supply chain information affects the utilitarian value to be perceived as higher instead of lower.

Further, we argue that more information about the product will enhance the affective response related to making an eco-friendly purchase. With research findings indicating that supply chain transparency leads to increased accountability (Dubink, 2008) and trust (Augustine, 2012; Sodhi & Tang, 2018) among consumers, we believe that high levels of supply chain transparency will enhance the hedonic value regarding purchasing a product with an eco-label even further. Therefore, we present the following hypothesis:

H3b: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *perceived hedonic value*, where an eco-label combined with a high level of supply chain transparency will lead to an even higher perceived hedonic value.

Further, we argue that supply chain transparency could reverse the negative effect of eco-labels on attitude towards the brand, as a more transparent and informative approach could strip away consumers' confusion and skepticism regarding eco-labels. Thus, we present the following hypothesis:

H3c: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *attitude toward the brand*, where an eco-label combined with a high level of supply chain transparency will lead to a more favorable attitude towards the brand.

Findings from the literature review above have provided us with an understanding of previous research conducted in the field of consumer behavior regarding environmentally friendly products. Our goal was to gain greater knowledge about the attitude-behavior gap that can be observed among consumers and uncover possible explanations as to why the gap exists – and how it can be reduced. All hypotheses that will be tested in this thesis to answer these questions are illustrated in figure 2.

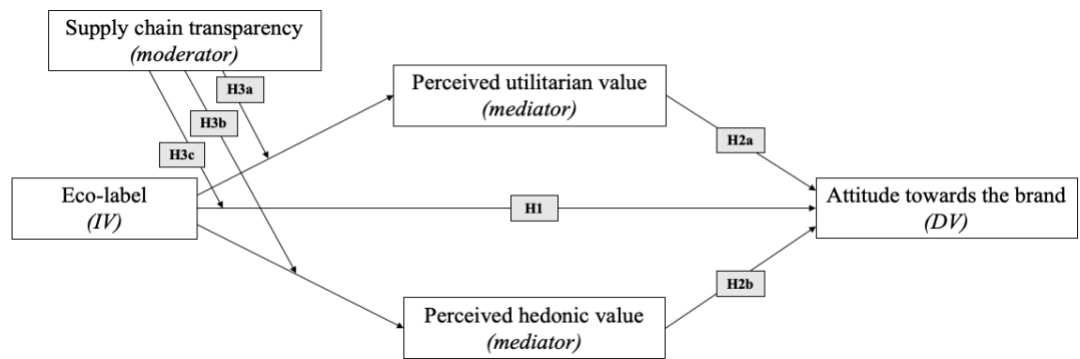


Figure 2. Research model with hypotheses.

3.0 Methodology

The purpose of this study is to gain insights about the attitude-behavior gap among sustainable products and the effects of supply chain transparency. To answer our research question and test our hypotheses, we conducted an online experiment. In the following sections we will elaborate on our chosen research design and how we collected our data for the study.

3.1 Sample and Data Collection

The main study was created as an online experiment in the software program Qualtrics. We collected participants for the study through our online social networks by distributing the digital survey on social platforms, such as Facebook, Instagram and LinkedIn. Further, we transferred the responses to the software SPSS to analyze the result. This type of data collection is classified as a non-probability sample, where elements are primarily determined by what is easiest to achieve (Gripsrud, et al., 2017). With regard to limited costs and time, we consider this selection strategy to be appropriate. The disadvantage of such a

sampling strategy is however that a number of elements have no opportunity to be included in the sampling, which can create systematic bias (Gripsrud, et al., 2017). The consequence of this is that one cannot generalize the results to an entire population, which constitutes a weakness in the survey. Further, while collecting respondents to the studies, a virtual snowball effect was created by encouraging respondents to share the online survey with their network. This enabled us to reach a wider set of participants outside our network. However, snowball sampling refers to a sampling method in which the first group of respondents is selected at random and then continues to identify others who belong to the target population (Malhotra, 2010).

According to Gripsrud et al. (2017), there is no statistical basis for saying exactly how many respondents should be included in a non-probability sample. On the other hand, they mention that around 200 units are a common starting point for convenience selection, where one should ensure 20-50 observations per subgroup (Gripsrud, et al., 2017). With this as a foundation, we chose to set a goal of 50 observations per experimental group, which involves a minimum of 300 observations.

3.2 Privacy and Ethical Considerations

In order to conduct our research in accordance with the basic considerations of data protection, all data collected in our studies was anonymized. This was to consider personal integrity, privacy and responsible use and storage of personal information (The National Committee for Research Ethics in the Social Sciences and the Humanities, 2019). Thus, we did not need to send an application to the NSD regarding collection of personal data (NSD, 2022). In addition, respondents participating in the study were informed that the study would not collect personal information or IP addresses, and that their privacy will be safeguarded. The data collected was processed according to the internal BI guidelines for GDPR (BI, 2022).

3.3 Pre-test

To gain broader knowledge and more insights into the attitude-behavior gap among sustainable products and the effects of supply chain transparency, we wanted to initiate our study with a pre-test.

In the pre-test, we wanted to investigate how consumers perceive supply chain information and what kind of information they find relevant and valuable, as well as which product categories the consumer wants to have more supply chain information about. In addition, we added some additional questions to gain insight into what the consumer knows about eco-labels and how they perceive sustainable products in different categories. The pretest thus formed the basis of our main study and allowed us to gain insight into what the consumer is actually interested in and care about. As we wanted to standardize the communication and obtain quantitative data, we considered a digital survey to be appropriate. Such a method gave us the opportunity to reach a wider representation of consumers, which provided us with a broader insight into the attitude-behavior gap among sustainable products.

All questions were asked on semantic differential scales anchored by 1 and 7, where 1 = not at all important and 7 = extremely important. Further, the questions regarding perception of sustainable products were anchored on semantic differential scales with bipolar scores of 1 and 7, where 1 = much lower and 7 = much higher. See full questionnaire in Appendix: Exhibit 1.

3.3.1 Pre-test results

81 participants ($M_{\text{age}}=30.26$, $SD_{\text{age}}=9.812$; 66.7% female) took part in the pretest.

The *Nordic Swan* label was the most recognized eco-label, with 93.8% recognition among participants, followed by *NytNorge* (71.6%), *Eco-Lighthouse* (56.8%) and *Forest Stewardship Council (FSC)* (22.2%). This finding indicated that it is appropriate to run an experiment with the *Nordic Swan* label as the promoted eco-label.

Participants indicated that it is most important to have information on the packaging/label of a product when you make a purchase in the *food* category ($M=5.54$, $SD=1.574$), as well as the *sun protection* category ($M=5.04$, $SD=1.714$).

Environmental sustainability was found to be the most important when you make a purchase in the *food* category (M=4.42, SD=1.604). *Sun protection* (M=4.04, SD=1.714) was found to be the most neutral category (with a mean closest to 4 on a scale from 1-7), regarding the importance of sustainability among participants. This finding indicated that sun protection could be an appropriate product category to examine in our experiment, as sustainability claims were considered neither highly important or unimportant.

When assessing the importance of supply chain information while considering the purchase of a product, participants indicated that the most important supply chain information was *origin of raw materials* (M=4.33, SD=1.83) followed by *country of origin* (M=4.20, SD=1.778), *carbon footprint* (M=3.98, SD=1.703) and *place of production* (e.g., name of factory) (M=3.93, SD=1.869). *Water use* (M=3.40, SD=1.765) and *travel distance* (M=3.33, SD=1.658) was found to be the least important types of supply chain information and were thus excluded from the main study. Full summary of results can be found in Appendix: Exhibit 2. These findings were used as a base to create the three levels of supply chain transparency for our 2 (eco-label: absent vs. present) x 3 (supply chain information: low vs. medium vs. high) factorial experiment.

3.4 Main Study

To test our hypotheses and gather quantitative data, the main study was conducted as an experiment with a 2 (eco-label: absent vs. present) x 3 (transparency: low vs. medium vs. high) between-subjects. This allowed us to test main effects, as well as interaction effects in the study. The 2x3 matrix below (Figure 3) illustrates the six different treatment conditions in the main experiment.

		Transparency		
		<i>Low</i>	<i>Medium</i>	<i>High</i>
Eco-label	<i>Absent</i>	Condition 1	Condition 3	Condition 5
	<i>Present</i>	Condition 2	Condition 4	Condition 6

Figure 3: 2 x 3 factorial design structure

3.4.1 Data Cleaning and Description of Sample

The data collected from Qualtrics was exported and transferred to the statistical software IBM SPSS Statistics 27. The sample contained a total of 475 respondents. However, after reviewing the results, we found that 117 respondents had replied “no” on one of the two first control questions in the survey. Thus, these respondents were sent to the end of the questionnaire and were excluded from the survey. Further, two respondents provided wrong answers to the open control question in the survey and were therefore excluded from further analysis. All other respondents provided complete answers as the “force response” function was used throughout the questionnaire and could therefore be analyzed further.

The final sample contained 356 respondents, with over 50 respondents in each treatment group ($n_1 = 55, n_2 = 56, n_3 = 64, n_4 = 60, n_5 = 58, n_6 = 63$). The participants were between 18 and 62 years old, with a mean age of 28.19 ($SD = 8.445$). 61% of the sample defined themselves as female, 39% as male and none as non-binary.

3.4.2 Stimulus materials

To create the six different conditions in the experiment, we designed six fictitious products that were presented to the participants. Inspired by Pancer et al. (2017), each treatment condition was presented with a different image, where the levels in the experiment were manipulated on the packaging of the product. Based on the findings in the pre-test, the chosen product was a sunscreen – a type of product that can be argued to be associated with gentle characteristics (softening, moisturizing, kind towards the ocean), as well as strong characteristics (protective, effective towards preventing sunburn).

Inspired by the manipulation in a study by Lin and Chang (2012), an opaque white bottle was presented across all conditions – as we did not want the color of the packaging or the content inside the bottle to confound the results. All images were manipulated by image editing software and no real brand names were used in order to better isolate the causal effects in the experiment. However, as we were interested in researching effects on *attitude towards the brand*, a fictive brand name was used: “*Sollaré*”.

Further, visual and verbal elements on the sunscreen bottles were manipulated across treatment conditions. Across the two levels of *eco-label*, the Nordic Swan logo was placed on the front of the packaging in all conditions containing the presence of an eco-label (treatment group 2, 4 and 6). Across the three levels of *transparency*, the results from the pretest were used to determine the content of the different levels. The supply chain information was presented as a descriptive text on the back of the product. For the “low” level of supply chain transparency (presented to treatment group 1 and 2), the text contained no supply chain information. Instead, a section with directions and an ingredient list was included on the back of the product. The purpose of this information on the product was to create a product that looked as realistic as possible, as such information is commonly used on sunscreen packaging (Appendix: Exhibit 3). However, the specific information on directions and ingredients were blurred out to isolate the effect in the experiment. For the “medium” level of supply chain transparency (presented to treatment group 3 and 4), the text contained directions and ingredients, as well as information regarding the origin of raw materials and place of production. In the text descriptions, the name of the countries and factories were blurred to avoid confounding and further isolate the effect in the experiment. For the “high” level of supply chain transparency (presented to treatment group 5 and 6), the description on the back of the product contained all items in the low and medium level of transparency – directions, ingredients, origin of raw materials, place of production – as well as information on carbon footprint and a Quick Response (QR) code that could be scanned (for illustrational purposes) for more information about the product. Pictures of the fictive products that were presented across the six treatment conditions can be found in Appendix: Exhibit 4.

3.4.3 Measures and Scales

The experiment was created in the survey software Qualtrics, conducted through an online questionnaire. Respondents were randomly assigned to one of the six treatment groups through the randomization tool in Qualtrics, where a different version of the product was presented across all groups. However, an identical questionnaire was presented to all participants.

At the beginning of the questionnaire, the participants were presented with an introduction stating that they would get to evaluate a product that would soon

be launched to the market. The introduction also stated that we wanted to find out how it would be received by consumers, and therefore asked them to evaluate the product and answer the following questions as honestly and accurately as possible. Further, two control questions were included in the questionnaire, asking participants whether they generally read the information on a product before they read it, and if they purchase sunscreen. The possible response alternatives were “yes” or “no”, where respondents who chose the alternative “no” on either of the two control questions got sent to the end of the questionnaire. This approach was chosen as it was estimated that subjects who generally do not read product information or purchase sunscreen would be of little relevance in the study. Further, an image of a sunscreen was presented, followed by a series of questions. All questions were measured on a semantic differential scale ranging from 1-7.

For *attitude towards the brand*, we modified a scale used by Evans et al. (2017) that examined the effects of disclosure language on brand attitudes. The study in question consisted of six items, of which we retained four items that fit our study. Participants were asked “*How did you feel about the advertised brand?*” using four descriptions: *Dislike/Like, Negative/Positive, Bad/Good, Unpleasant/Pleasant*.

For *perceived utilitarian value*, we based the items on a study by Lee et al. (2005) – designed to measure attitude towards ads for jeans, watches and headache remedies. The study contained eleven utilitarian dimensions and we considered six dimensions to be relevant for the context of our study. The respondents were therefore asked to describe the product as either: *Not functional/Functional, Ineffective/Effective, Unhelpful/Helpful, Useless/Useful, Unnecessary/Necessary, Not problem solving/Problem solving*.

For *perceived hedonic value*, the items were based on a study by Omigie et al. (2020) – designed to measure how hedonic values affect customer satisfaction and continuance intention of mobile financial services. In that study, the researchers measured hedonic value on aesthetic, experiential and symbolic dimensions on a total of nine items. Out of these items we considered four descriptions to be relevant after modifying the wording to fit the context of our study. The respondents were asked to rate the following statements from 1-7 (*1=strongly disagree, 7=strongly agree*): “*By purchasing this product, I would feel good*”, “*By purchasing this product, I would feel happy with myself*”, “*This product reflects my beliefs and values*”, “*This product enhances my identity*”.

For a deeper understanding of other possible explanatory factors, we also chose to include six items (not based on any specific scales) where the respondents were asked to evaluate the importance of various attributes (while purchasing a sunscreen) from 1=*not at all important* to 7=*very important*: *Product quality, Environmental sustainability, Product design, Sensory aspects (e.g., feel, scent), Clear product information* and *Effectiveness*. These items were also followed by two open-ended questions, where participants were asked to state any additional attributes that they find crucial to purchase sunscreen, as well as to answer the question: “*If there are any attributes you find to be extremely important: why do you consider them to be important?*”.

Lastly, the respondents were asked to state their age (open-ended question) and gender (categorical measurement: *Male/Female/Prefer to self-describe/Prefer not to say*).

The full questionnaire is summarized in Appendix: Exhibit 5.

3.5 Reliability and Validity

When assessing the quality of the study in this paper, it is essential to consider validity and reliability for the results to be considered as trustworthy.

3.5.1 Validity

Validity in a study refers to the extent to which it measures what it is supposed to measure (Harnell & Wright, 1990). In an experiment, both internal and external validity needs to be considered, as researchers have observed a clear tradeoff between the two. The observation indicates that a greater internal validity often comes at the expense of external validity, and vice versa (Roe & Just, 2009). The experiment in this study can be considered a laboratory experiment, as the setting of the experiment is highly controlled. This has been achieved by distributing a standardized survey consisting of a set of images and an identical questionnaire, where participants are randomly allocated to each experiment group. While a field experiment can replicate a more realistic setting and thus provide higher external validity (Roe & Just, 2009), a laboratory approach was chosen as we wanted to ensure confidence in the causal relationship we are testing, and that the effects were not influenced by other variables.

Further, the items in the questionnaire were based on operationalizations used in previous research, to ensure that the measurements were based on relevant existing knowledge – thus, enhancing construct validity (Harnell & Wright, 1990). To secure that the measurements were differentiated from each other, as well as different from related constructs, we also conducted a factor analysis – which will be addressed in later sections.

3.5.2 Reliability

Reliability refers to the consistency achieved when you are measuring a phenomenon and can be defined as the relative absence of random error in a measurement instrument (Roe & Just, 2009). In order to achieve high reliability in our study, the questions in the questionnaire were based on existing multi-item scales that have been used in previous research. The number of scale items and the wording of questions were adapted to fit the context of our study.

Further, we used several functions in the survey software Qualtrics – including the force response function on all rating items, as well as a minimum requirement of letters and numbers in all open-ended questions (except on one optional open-ended question). This reduced the risk of random errors among the participants' responses. As the experiment took place in an online setting, we could also ensure that all respondents received the same instructions and identical questions. This type of standardization can further enhance the reliability of the study. We also stated that all responses to the survey would be anonymous, to reduce the risk of participant bias.

Further, we chose to include a control question at the end of the survey to reduce the risk of insufficient effort responding (IER). This phenomenon has been observed where research data has been collected based on self-reporting and can be considered a threat to internal consistency reliability (Breitsohl & Steidelmüller, 2018). The control question was included to target the respondents' attention to what product they were asked to assess – making sure that the participants were paying attention to the image. In the coming sections of this paper, we will also assess internal consistency reliability by calculating Cronbach's alpha.

4.0 Analysis and Results

In the following section, several analyses of our hypotheses will be presented. For the analysis of data, we used the statistical software SPSS.

4.1 Factor Analysis

First, we started with a factor analysis, as it can be used to analyze the relationship between variables and explain the relationship between them based on common underlying factors (Gripsrud, et al., 2017). A factor analysis is appropriate to use in this study to ensure that the various questions actually measure the same thing. The purpose of the factor analysis was to reduce the number of variables and make the results easier to interpret.

To check whether it was appropriate to proceed with this analysis, several assumptions were tested. First, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Appendix: Exhibit 7), with the value of .811, was well above the usual recommended value of .6. The high value indicates that the strength of the relationships between variables is high, and therefore it was acceptable to proceed with the analysis (Malhotra, 2010). In addition, Bartlett's test of seriousness (Appendix: Exhibit 7) was significant ($\chi^2(91) = 3138.488, p < 0,000$). When the p-value is way below .05, we had an indication that a factor analysis would be appropriate.

To determine how many factors to extract, we used the method Kaiser's rule, explained variance, and scree plot. By looking at the Total Variance Explained (Appendix: Exhibit 8), we see that three components have Eigenvalues above 1 and the "elbow" in the scree plot is at component number 4 (Appendix: Exhibit 9). When further looking at Appendix: Exhibit 8, we see that the percentage of variance in the Eigenvalues has drastic increases between component 1 (increase of 35.116%), component 2 (increase of 18.974%) and component 3 (increase of 15.602%) - with a cumulative percent of 69.692%. However, after including a fourth component, the percentage of variance in the Eigenvalues evens out (increase of 6.418%) – indicating that including a fourth component will not be necessary. Thus, these methods suggest that having three factors is appropriate, and the requirements for reducing the 14 components to three variables are met.

To make our data as clean as possible and simplify the factor structure, we rotated our data using the Orthogonal method. The factors will then be completely uncorrelated after rotation. By comparing the Component Matrix and Rotated Component Matrix (Appendix: Exhibit 10), our data is cleaner using the Orthogonal method with a varimax rotation in SPSS.

To calculate reliability, it is common to use Cronbach's alpha. Alpha is a function between the number of indicators and the correlation between them, where a rule of thumb is that alpha must be greater than .7 to be considered reliable (Malhotra, 2010). However the Analysis of Cronbach's alpha was performed, all of which gave a value of more than .7 ($\alpha_{Attitude} = .857, \alpha_{Utilitarian} = .880, \alpha_{Hedonic} = .866$). The results are illustrated in Appendix: Exhibit 11. As the values are above .7, we consider the scales to have satisfactory internal consistency reliability (Malhotra, 2010).

To proceed with the analysis, we have chosen to combine the variables that were measured through several questions. Such a merger is called dimension reductions. The variables that can be merged are *attitude towards the brand*, *perceived utilitarian value* and *perceived hedonic value*. In further analysis, we will use the new variables, as seen in Appendix: Exhibit 10, *attitude towards the brand* (Q1, Q2, Q3 and Q4), *perceived utilitarian value* (Q5, Q6, Q7, Q8, Q9 and Q10) and *perceived hedonic value* (Q11, Q12, Q13 and Q14).

4.2 Hypothesis testing

To analyze the result from the main study and understand the relation between the variables in the research model, we conducted a regression analysis, mediation analysis and a 2x3 factorial between-subjects ANOVA.

4.2.1 Regression Analysis

4.2.1.1 Hypothesis 1

A regression analysis (Appendix: Exhibit 12) was conducted to analyze the following hypothesis: H1: The presence of an *eco-label* will negatively affect consumers' *attitude towards the brand*.

In order to examine the effect of an eco-label (independent variable) on attitude towards the brand (dependent variable), *eco-label* was coded as dummy

variables – either 0 (absent) or 1 (present). Thus, group 1, 3, and 5 obtained the value of 0, while group 2, 4 and 6 obtained the value of 1.

The results of the regression analysis were statistically significant ($F(1,354)=4.890$, $Sig.=.028$). Thus, the presence of an eco-label showed a significant difference in attitude towards the brand. However, attitude towards the brand was shown to be more favorable when an eco-label was present ($B=.217$, $SE=.098$) – reversing the hypothesized effect. Thus, we could not find statistical support for our hypothesis and H1 was rejected.

4.2.2 Mediation Analysis

To test the relationships between variables in hypotheses H2a and H2b, two mediation analyses were conducted. Based on the path diagram by Baron & Kenny (1986), three different paths were tested to examine each hypothesis. To determine full mediation, the indirect paths (a and b) must be significant, and the direct path (c) should be insignificant (Baron & Kenny, 1987). With statistical significance on both the indirect and direct path, partial mediation can be determined. To test for mediation effects, mediation analyses were conducted using the PROCESS macro in SPSS (Hayes, 2022).

4.2.2.1 Hypothesis 2A

First, we tested hypothesis H2a:

H2a: *Perceived utilitarian value* will mediate the relationship between the presence of an *eco-label* and *attitude towards the brand*, where an eco-label combined with low perceived utilitarian value will lead to a more negative attitude towards the brand.

The regression coefficients, standard errors and p-values of the different regression paths is illustrated in Figure 4 below:

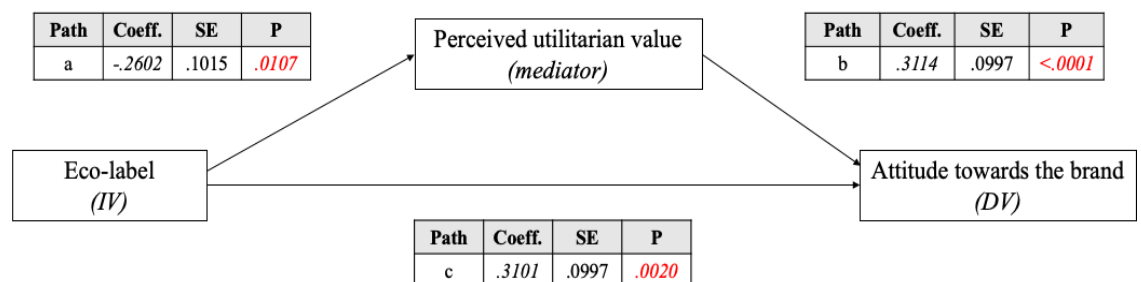


Figure 4: The regression coefficients for hypothesis H2a

In path a, we can observe a significant negative effect of a one unit increase in *eco-label* (from absent: 0, to present: 1) on *perceived utilitarian value* ($coeff_a = -.2602$, $SE_a = .1015$, $p_a = .0107$). Thus, the presence of an eco-label significantly reduces *perceived utilitarian value*. In path b, we can however observe a significant positive effect ($coeff_b = .3114$, $SE_b = .0997$, $p_b = < .0001$) – indicating that an increase in perceived utilitarian value leads to a more favorable attitude towards the brand. The total indirect results (path a*b) revealed a significant negative indirect effect of *perceived utilitarian value* on the relationship between an *eco-label* and *attitude towards the brand* ($b = -.0810$, $t = -2.1149$). The total indirect effect was significantly negative, meaning that a one unit increase in *eco-label* decreased *perceived utilitarian value*, and that this decrease in the mediator further decreased *attitude towards the brand*. In the mediation summary presented in Table 1 below, we can also see that the confidence interval does not contain the value of 0 (-.1655;-.0161), which indicates statistically significant results. Thus, mediation was found and H2a can be accepted.

Further, the direct effect of an *eco-label* on *attitude towards the brand* in presence of the mediator was also found to be statistically significant ($coeff_c = .3101$, $SE_c = .0997$, $p_c = .0020$). This finding indicates that both the direct and indirect effect is significant – providing evidence of partial mediation.

4.2.2.2 Hypothesis 2B

Further, we tested hypothesis H2b:

H2b: *Perceived hedonic value* will mediate the relationship between the presence of an *eco-label* and *attitude towards the brand*, where an eco-label combined with high perceived hedonic value will lead to a more positive attitude towards the brand.

The regression coefficients, standard errors and p-values of the different regression paths is illustrated in Figure 5 below:

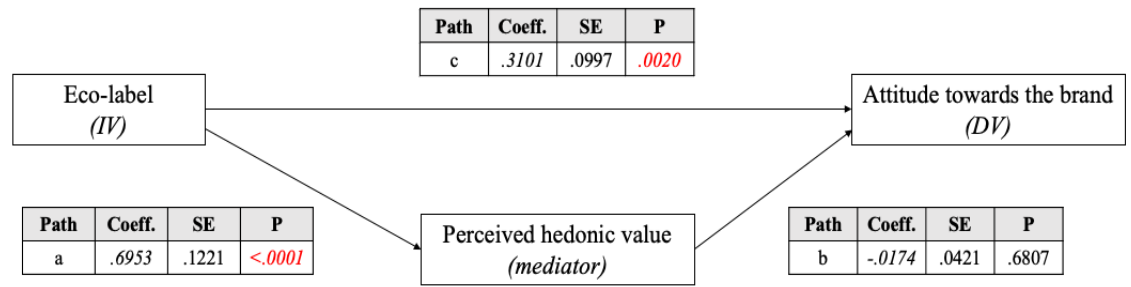


Figure 5: The regression coefficients for hypothesis H2b

The results revealed statistical significance on path a, where a significant positive effect can be observed between a one unit increase in *eco-label* (from absent: 0 to present: 1) and *perceived hedonic value* ($coeff_a = .6953$, $SE_a = .1221$, $p_a = < .0001$). However, path b is not statistically significant ($coeff_b = -.0174$, $SE_b = .0421$, $p_b = .6807$). Thus, we observed a non-significant indirect effect of *perceived hedonic value* on the relationship between an *eco-label* and *attitude towards the brand* ($b = -.0121$, $t = -0.3569$). In the mediation summary presented in Table 1 below, we can also see that the confidence interval contains the value of 0 (-.0796;0.0589), which indicates non-significant results. Thus, mediation was not found and H2b can be rejected.

Relationship	Total effect	Direct effect	Indirect effect	Conf. interval		T-statistic	Conclusion
				Lower	Upper		
Eco-label → Perceived Utilitarian Value → Attitude Towards the Brand	.2170 (.0276)	.3101 (.0020)	-.0810	-.1655	-.0161	-2.1149	Partial mediation
Eco-label → Perceived Hedonic Value → Attitude Towards the Brand	.2170 (.0276)	.3101 (.0020)	-.0121	-.0796	.0589	-.3569	No mediation

Table 1: Mediation Analysis Summary

4.2.3 Univariate Analysis of Variance

A total of three 2x3 Factorial Between Subjects ANOVAs were conducted to test hypothesis H3a, H3b and H3c.

4.2.3.1 Hypothesis 3A

First, the following hypothesis was tested (Appendix: Exhibit 13):

H3a: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *perceived utilitarian value*, where an *eco-label* combined with

a high level of supply chain transparency will lead to higher perceived utilitarian value.

The results revealed a significant effect of a present *eco-label* on *perceived utilitarian value* ($F(1)=6.242$, $p=.013$), as well as a significant effect of the level of *supply chain transparency* on *perceived utilitarian value* ($F(2)=13.498$, $\text{Sig.}=<.0001$). Here, we could see that the group with the highest mean in *perceived utilitarian value* was treatment group 3 ($M=6.1667$, $SD=.6875$) – the group with an absent *eco-label* and a medium level of supply chain transparency. However, the interaction effect between *supply chain transparency* and *eco-label* was shown to be non-significant ($F(2)=2.112$, $\text{Sig.}=.084$). Thus, we did not have statistical evidence to say that an *eco-label* combined with high *supply chain transparency* leads to higher *perceived utilitarian value*, and H3a was rejected.

4.2.3.2 Hypothesis 3B

Further, the following hypothesis was tested (Appendix: Exhibit 14):

H3b: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *perceived hedonic value*, where an *eco-label* combined with a high level of supply chain transparency will lead to an even higher perceived hedonic value.

The results revealed a significant effect of a present *eco-label* on *perceived hedonic value* ($F(1)=32.210$, $p=<.0001$), and a non-significant effect of the level of *supply chain transparency* on *perceived hedonic value* ($F(2)=1.415$, $\text{Sig.}=.342$). Here, we could see that the group with the highest mean in *perceived utilitarian value* was treatment group 4 ($M=4.8333$, $SD=1.7777$) – the group with a present *eco-label* and a medium level of supply chain transparency. However, the interaction effect between *supply chain transparency* and *eco-label* was shown to be non-significant ($F(2)=2.577$, $\text{Sig.}=.077$). Thus, we did not have statistical evidence to say that an *eco-label* combined with high *supply chain transparency* leads to higher *perceived hedonic value*, and H3b was rejected.

4.2.3.3 Hypothesis 3C

Lastly, we tested the following hypothesis (Appendix: Exhibit 15):

H3c: *Supply chain transparency* moderates the relationship between the presence of an *eco-label* and *attitude towards the brand*, where an *eco-label* combined with

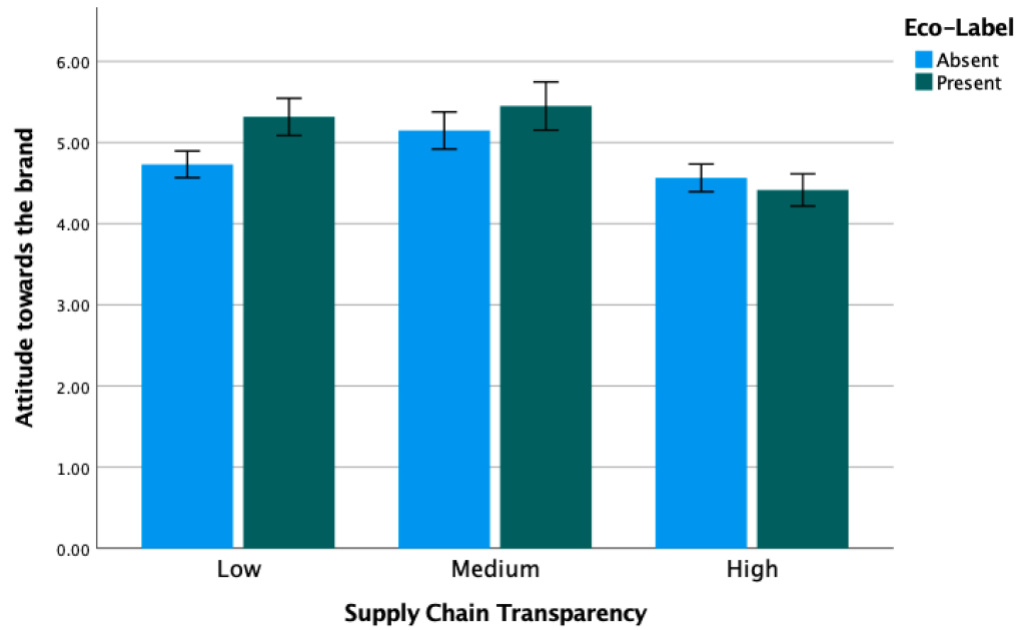
a high level of supply chain transparency will lead to a more favorable attitude towards the brand.

The results revealed a significant effect of a present *eco-label* on *attitude towards the brand* ($F(1)=7.429$, $p=.007$), as well as a significant effect of the level of *supply chain transparency* on *attitude towards the brand* ($F(2)=28.424$, $Sig.=<.0001$). Further, the interaction effect between *supply chain transparency* and *eco-label* on *attitude towards the brand* was shown to be statistically significant ($F(2)=5.502$, $Sig.=.004$).

A higher mean *attitude towards the brand* could be observed in group 2 ($M=5.317$, $SE=.114$) and 4 ($M=5.450$, $SE=.110$), compared to group 1 ($M=4.732$, $SE=.115$) and 3 ($M=5.148$, $SE=.106$). Thus, the average attitude towards the brand was higher when an *eco-label* was present (vs. absent) on the low and medium level of supply chain transparency. We could however see that the average attitude towards the brand decreased for group 5 and 6 – which revealed the lowest mean values among all treatment groups. Here, we could observe a reversed effect, where the group with an *eco-label* present (group 6) had a lower mean attitude towards the brand ($M=4.417$, $SE=.107$) and the group with an *eco-label* absent had a slightly higher mean attitude towards the brand ($M=4.565$, $SE=.112$).

Looking at pairwise comparisons between the groups, a significantly higher mean attitude towards the brand could be observed in the groups with a medium level of supply chain transparency (I) compared to the groups with low transparency (J) ($I-J=.275$, $SE=.111$, $Sig.=.014$). Further, the mean attitude towards the brand was significantly lower in the groups with high supply chain transparency (I) compared to the groups with low (J_1) ($I - J_1 = -.535$, $SE = .112$, $Sig. = <.0001$) and medium (J_2) ($I - J_2 = -.809$, $SE = .109$, $Sig. = <.0001$) level of supply chain transparency.

The results from this hypothesis test can be observed in Bar Chart 1 below. Here, the reversed effect in mean attitude towards the brand is illustrated - where we find that the group with the highest level of supply chain transparency revealed the least favorable results regarding attitude towards the brand.



Bar Chart 1: Results for hypothesis 3c.

Further, the group with a high level of supply chain transparency and an eco-label present was the group with the least favorable attitude towards the brand. Looking at hypothesis H3c, we can see from our statistically significant results that supply chain transparency moderates the relationship between the presence of an eco-label and attitude towards the brand. However, attitudes towards the brand did not necessarily become more favorable as a result of the highest level of supply chain transparency in combination with an eco-label. Therefore, we reject H3c.

5.0 Summary of results

Hypotheses	Variables	Results
H1	The presence of an <i>eco-label</i> will negatively affect consumers' <i>attitude towards the brand</i> .	Rejected
H2a	<i>Perceived utilitarian value</i> will mediate the relationship between the presence of an <i>eco-label</i> and <i>attitude towards the brand</i> , where an eco-label combined with low perceived utilitarian value will lead to a more negative attitude towards the brand.	Accepted
H2b	<i>Perceived hedonic value</i> will mediate the relationship between the presence of an <i>eco-label</i> and <i>attitude towards the brand</i> , where an eco-label combined with high perceived hedonic value will lead to a more positive attitude towards the brand.	Rejected
H3a	<i>Supply chain transparency</i> moderates the relationship between the presence of an <i>eco-label</i> and <i>perceived utilitarian value</i> , where an eco-label combined with a high level of supply chain transparency will lead to higher perceived utilitarian value.	Rejected
H3b	<i>Supply chain transparency</i> moderates the relationship between the presence of an <i>eco-label</i> and <i>perceived hedonic value</i> , where an eco-label combined with a high level of supply chain transparency will lead to an even higher perceived hedonic value.	Rejected
H3c	<i>Supply chain transparency</i> moderates the relationship between the presence of an <i>eco-label</i> and <i>attitude toward the brand</i> , where an eco-label combined with a high level of supply chain transparency will lead to a more favorable attitude towards the brand.	Rejected

6.0 Discussion

The goal with this research paper was to gain a greater knowledge about the attitude-behavior gap within green consumerism and uncover potential explanations to why the gap exists. This raised our research question:

Does supply chain transparency reduce the attitude-behavior gap for sustainable products by affecting perception of utilitarian and hedonic value?

Although the gap has been studied in previous research, our findings contribute to marketing research by confirming or refuting previous findings on the subject, but also suggesting new factors that can affect green consumer behavior.

6.1 The Effect of Eco-labels

Previous research has found that eco-labels are typically well-received by consumers (Atkinson & Rosenthal, 2014; Testa et al., 2015). However, in the light of findings regarding risk of greenwashing, confusion and skepticism (e.g., Peattie & Crane, 2005; Moon et al., 2017), we hypothesized that the effect of eco-labels would have a negative effect on attitude towards the brand (H1). Our hypothesis test did provide statistically significant results – in the opposite direction than we expected. In this study, respondents generally had a more favorable attitude towards the product when an eco-label was present on the packaging. When the product packaging did not contain anything uncommon or extra (such as no additional supply chain information in group 1 and 2), the mean attitude towards the brand was still higher in the group containing an eco-label (Appendix: Exhibit 12).

We do recognize that this finding may vary depending on the type of product. However, the product we decided to include in the study (sunscreen) was a product that held attributes referred to as both “strong” and “gentle”. Thus, the neutralized aspect of the product arguably helps us emphasize that eco-labels do have a positive impact on consumers’ attitude towards the brand on a more general level.

6.2 The Mediating Effect of Perceived Utilitarian Value

Building on previous research findings on the so-called “Sustainability Liability” – where researchers suggest that eco-labels make consumers perceive products to

be lesser in functional quality (Luchs et al., 2010), we hypothesized that perceived utilitarian value would mediate the relationship between eco-labels and attitude towards the brand. Our assumption was that eco-labels would make customers perceive the product as less functional, which ultimately would lead to a less favorable attitude towards the brand. According to the results of our study, perceived utilitarian value was a variable that was shown to mediate the effect – explaining the process through which eco-labels and attitude towards the brand are related. This finding can be perceived as quite interesting, as the previous hypothesis indicated that the eco-label alone had a positive effect on attitude towards the brand. However, similarly to what has been discovered in previous research (Luchs et al., 2010), the sustainable aspect of the product (in this case, illustrated by an eco-label) made consumers perceive the product as lesser in utilitarian value, which further led to a more negative attitude towards the brand. This finding can thus provide an explanation to the antecedents of the attitude-behavior gap, as consumers' attitudes towards the brand actually becomes less favorable instead of more favorable when taking the utilitarian aspects of the eco-labeled product into consideration.

6.3 The Mediating Effect of Perceived Hedonic Value

Empirical evidence from previous research has shown that there is an increased public interest in sustainable products, and that more and more consumers are attracted by the values of ethical consumerism (Carrington et al., 2010; Jung et al., 2020). Further, there has been an assumption that there has been a change in consumers' values and norms in recent years (Govind et al., 2019). Based on these findings, we hypothesized that eco-labeled products would enhance the perceived hedonic value, which in turn leads to more favorable attitudes towards the brand. Our mediation analysis however did not provide statistically significant results and therefore we cannot state that perceived hedonic value mediates the relationship between an eco-label and attitude towards the brand. However, we could see that there was a statistically significant relationship between a present eco-label and perceived hedonic value, where respondents perceived the product as more in line with their personal values and beliefs. Although we could not find mediation, the significance of the first path (a) indicates that eco-labels bring out a certain emotional response among consumers. However, the study showed that

increased perceived hedonic value is simply not enough to significantly affect attitude towards the brand.

6.4 Interaction Effects Between Supply Chain Transparency and Perceived Utilitarian Value

Based on previous research findings stating that increased supply chain information allows people to make more informed decisions (Chapman, 1995), we hypothesized that consumers would perceive the functional quality and utilitarian value as higher after being presented with more information about the product. This was in turn assumed to affect attitude towards the brand to become more positive. However, we did not find statistically significant evidence for these interaction effects in our study. On the other hand, supply chain transparency alone had significant effects on perceived utilitarian value – without interaction with an eco-label. We did not include our own hypotheses regarding this isolated relationship, but this finding presents future research opportunities regarding ways of using supply chain information to increase perceived utilitarian value.

6.5 Interaction Effects Between Supply Chain Transparency and Perceived Hedonic Value

With previous research stating that supply chain transparency leads to increased trust among consumers (Augustine, 2012; Sodhi & Tang, 2018), we hypothesized that supply chain transparency would moderate the relationship between an eco-label and perceived hedonic value. The assumption was that a product with an eco-label, combined with a high level of supply chain transparency would lead to an even higher perceived hedonic value. Here, we could not find any statistical evidence of interaction effects of supply chain transparency and perceived hedonic value. On the other hand, the presence of an eco-label did have a statistical effect, indicating that the eco-label on its own enhances perceived hedonic value. Thus, the eco-label can actually make consumers feel something positive and meaningful. We cannot say for sure why supply chain transparency did not affect perceived hedonic value. However, it might be possible that the chosen supply chain information has to be a bit more “hedonic” in nature –

perhaps targeting consumer emotions more directly through information connected to topics such as environmental, animal or human welfare.

6.6 Interaction Effects Between Supply Chain Transparency and Attitude Towards the Brand

As several studies have found that consumers are more willing to purchase products from transparent companies (Bhaduri & Ha-Brookshire, 2011; Testa et al., 2015), we hypothesized that an eco-label combined with a high level of supply chain transparency would make attitude towards the brand become more favorable. This interaction effect was shown to be significant, and we could see that the strength of the relationship between an eco-label and attitude towards the brand gets affected by supply chain transparency. However, our findings were quite interesting, as we could see an effect where the highest level of supply chain transparency was in fact not the most favorable scenario. An eco-label in interaction with the highest level of supply chain transparency made consumers' attitudes towards the brand become less favorable. Additionally, the attitude towards the brand was even lower when a product with high supply chain transparency had an eco-label on the packaging. On the other hand, for a low and medium level of supply chain transparency, the interaction effects were positive - and the products containing the eco-label were also related to a more favorable attitude towards the brand.

Thus, we can see that our assumptions were correct and that supply chain transparency actually can affect the relationship between eco-labels and attitude towards the brand. However, the case of positive effects only applied until the medium level of supply chain transparency. After that, the effects changed direction and we saw a less favorable evaluation of the brand. We cannot say exactly why this effect appears, but it is possible that the average consumer might not be able to fully understand the scope of a product's carbon footprint (as presented in the highest level of supply chain transparency). It might also be possible that consumers find it too comprehensive to scan a QR code for more information. With previous research findings stating that purchase intention will be reduced if consumers find it too costly or time consuming to acquire supply chain information (Kärnä et al., 2001), we can assume that this effect might be rooted in that the highest level of supply chain transparency contained information

that was perceived as too complex. Another explanation might be related to feelings of skepticism or confusion, where consumers find that the highest level of supply chain transparency in combination with an eco-label is creating a scenario where the sustainable information is considered as too extensive and thus unreliable – perhaps on the verge of greenwashing (as mentioned by e.g., Peattie & Crane, 2005; Moon et al., 2017). Therefore, we cannot say that the highest level of supply chain transparency leads to a more favorable attitude towards the brand. However, the use of certain supply chain information can be appropriate, as it shows an enhanced effect on consumers' attitude towards the brand.

7.0 Theoretical and Managerial Implications

7.1 Theoretical Implications

The gap between consumers' attitudes and behavior towards sustainable products have been studied across various topics in the literature and is often referred to as the attitude-behavior gap. Our findings in this thesis contribute to marketing research by confirming or refuting previous findings on the subject, but also suggesting new factors that may influence green consumer behavior. In our study, we chose to target *attitudes* in the attitude-behavior gap. This approach was chosen to examine the antecedents of consumer attitudes, and thus form a deeper understanding of why and how attitudes are formed. By gaining more insight into the field of consumer attitudes, we believe that researchers can have a deeper understanding of why the attitude-behavior gap exists – and why generally favorable attitudes towards sustainable products might not always result in an actual purchase.

We have identified that the presence of an eco-label makes a significant difference in attitude towards the brand, where the brand is seen in a more favorable light when an eco-label is present. This finding confirmed the findings by some researchers (e.g., Atkinson & Rosenthal, 2014; Testa et al., 2015), while refuted the findings of others (e.g., Grunert et al., 2014; Moon et al., 2017; Roheim & Zhang, 2018). Previous studies have also investigated products perceived as either “strong” or “gentle”, where environmental friendliness is more or less valued based on the perceived strength of the product (Luchs et al., 2010). We however chose to focus on a product (sunscreen) that arguably contains aspects from both endpoints of the spectrum - providing an interesting angle to

previous research, as it is not a certainty that environmental friendliness will be evaluated favorably.

Further, we found that the eco-label on a product made consumers perceive the product as lesser in utilitarian value. This is in line with findings in previous research regarding “the sustainability liability” (Luchs et al., 2010; Lin & Chang, 2012; Newman et al., 2014), where evaluations of the brand become less favorable when assessing the utilitarian aspects of the sustainable product. Looking at perceived hedonic value, we could not find mediation between a present eco-label and attitude towards the brand. However, the statistically significant relationship between a present eco-label and perceived hedonic value indicated that eco-labels create an emotional response – although it might not be enough to affect attitude towards the brand in a more or less favorable way. The relative weight between the dimensions of utilitarian and hedonic value have been studied in previous research, where it was found that consumers attach greater importance to hedonic value, but only after a “necessary” level of functionality is met (Chitturi et al., 2007). Based on our research, we can state that perceived utilitarian value had a stronger impact in terms of affecting consumer attitudes, whereas perceived hedonic value displayed no effect – somewhat refuting the previous findings.

Limited previous research has investigated consumers' responses to making supply chain information easily available and accessible. Therefore, we have contributed to this topic by examining the effect of consumer evaluations of sustainable products when supply chain information is displayed on product packaging. The results however indicated that the effect on attitude towards the brand will not get more favorable based on the higher level of supply chain information. Thus, more supply chain information was not necessarily the key to enhancing attitudes towards the brand. Rather, the results indicate that more favorable attitudes towards the brand could be achieved by including supply chain information that is perceived as understandable and reliable – requiring limited effort from the consumer and enhancing trust.

7.2 Managerial implications

In the following section, we assess what brands and managers should consider in their work moving forward. Based on findings from previous research, we can see

that there has been a change in consumers' values and norms, and therefore it is crucial that companies develop their business models and marketing strategies to reflect this change. It is becoming increasingly common for companies to apply for eco-labels to clarify which products are environmentally friendly, and at the same time distinguish between green and non-green products. Our findings indicate that it can be favorable to obtain an eco-label on a brand's product, if the purpose is to enhance attitudes towards the brand. Thus, while considering ways of enhancing brand image, an eco-label could be a good choice.

However, our findings in this thesis indicate that eco-labels are not only attached to positive consumer evaluations, as they have been seen to decrease the perceived utilitarian value – and thus decrease the attitude towards the brand. This implies that managers should think carefully about what kind of features they wish to promote with their product before considering an eco-label. If effectiveness and functionality are highly important attributes with the product, including an eco-label might not be the best strategic decision.

Further, managers should be aware that they have concrete and relevant information on their sustainable products. Our findings indicate that if the supply chain information became too heavy or complex for the consumer, the enhanced level of information became negative rather than positive in terms of attitude towards the brand. Therefore, managers and brands should focus on developing sustainable products with a well-thought-out supply chain transparency strategy. To achieve this, brands could conduct market studies on their respective target groups in order to map out types of information that they find interesting, understandable and relevant.

In accordance with the findings from Moon et al. (2017), we also suggest that marketing managers should change the way the environmental information is described on the product to educate consumers about the eco-label and reduce the risk of confusion. Thus, in order for the supply chain information to have a positive effect, the information should be presented in a logical and straightforward manner. We do however recognize that obtaining supply chain information can be a complex and time-consuming mission. With the rise of blockchain technology and other tracking mechanisms, it should however be possible for companies to obtain such information in the future. It is further recognized that a challenge with displaying supply chain information on a product would require a very stable relationship with all parts of the supply chain. This

would mean that managers need to ensure strong relationships with entities such as producers, vendors, warehouses, transportation companies, distribution centers, and retailers. Thus, it can be quite complicated to initiate the use of supply chain transparency as a marketing tool – certainly if it is being used on product packaging. However, as the study in this paper suggests: it could have significant effects in terms of enhanced attitudes towards the brand in question.

Conclusively, it can be considered challenging to succeed in the market of sustainable products. However, taking the implications mentioned above into consideration, the findings in our research could guide managers towards making the right strategic choices in the future.

8.0 Limitations and Future Research

8.1 Limitations

There are limitations in this study that should be acknowledged and taken into consideration when assessing the findings and conclusions of our research. Due to limitations in financial resources, time constraints and practical reasons, a non-probability convenience sample approach was used. This type of sampling technique is not generalizable for the whole population, as the research subjects have been chosen simply because they are easy to recruit (Malhotra, 2010). Additionally, as the experiment was shared online with our own close networks, and further shared by multiple friends and family members, the sampling in this study is also characterized by snowball sampling. This technique is subject to sampling bias (Malhotra, 2010), as the people who shared the experiment online might only have shared it with people they know and have similar traits with. This could enhance the homogeneity of the sample – decreasing generalizability further. However, for the purpose and intention of this study, we found these types of non-probability sampling techniques to be the most effective in terms of time and costs. We also managed to get our survey shared on platforms such as LinkedIn, where shared posts tend to spread to a wider range of people outside of the messenger's close network – which increased the possibility of participants belonging to networks of different nature.

Further, the experiment in the study was conducted in a laboratory setting, to ensure confidence in the causal relationships we were testing. However, the

setting of an online questionnaire can be described as artificial, which makes it lower in external validity (Roe & Just, 2009). Respondents were also asked to make evaluations of their own intentions which might not reflect their actual behavior in real life – a setting that is low in ecological validity (Roe & Just, 2009). Thus, the generalizability to a real purchase setting can be argued as limited.

Looking back at the results from the pre-test, we chose to continue with the type of product that was subject to the most neutral evaluations in environmental sustainability importance (sunscreen). However, we do recognize that previous research points out several types of response styles that might affect these results, such as the tendency to select extreme endpoints of the scale (where a score of 1+7 equals 4 on average) or the tendency to avoid selecting the extreme endpoints of a scale and aim for the middle score (Baumgartner & Steenkamp, 2001). These types of response styles might affect the meaning of a neutral point of 4 (on the scale from 1-7), which can threaten the statistical validity and affect comparability across samples (Cavusgil & Das, 1997).

In the main study, there were many respondents who did not make it to the main part of the survey as they answered “no” on one of the control questions at the beginning of the questionnaire. This approach was chosen to ensure relevant respondents in the study. However, a limitation with this approach is that some respondents who answered “no” regarding the question about whether they purchased their own sunscreen, may in fact be potential *future* buyers of sunscreen. Thus, insights in their ways of reasoning and purchasing patterns could have been useful.

Further, the main study consists of elements targeting environmental sustainability, that can be prone to social desirability bias among respondents. Previous research has described social desirability as research participants’ tendency to bias their responses in surveys or experiments in order to present the best version of themselves (Crowne & Marlowe, 1960). For pro-environmental behavior that can be argued as morally relevant, it is therefore not unlikely that people provide answers that allow them to appear in a more favorable light. This provides a limitation to the study, as it can be viewed as a confounding variable in our results (Kaiser et al., 2008). However, we chose to have the survey completely anonymous and stated this clearly to the participants at the beginning of the study, to avoid risks of social desirability bias to the best extent.

Lastly, the grouping of the different levels of supply chain transparency were not directly comparable. In retrospect, we cannot say which of the added factors contributed to the significant effects – something that would have been useful when assessing why the highest level of supply chain transparency led to a less favorable attitude towards the brand. Looking back, it would have been helpful to know whether it was the QR code, the carbon footprint information, or both, that made respondents evaluate the brand in a more negative light.

Taking the limitations mentioned above into consideration, our research has still provided further understanding into the possibilities within supply chain transparency and the effect of utilitarian and hedonic value in evaluations of attitudes towards brands. However, there are many topics that can be addressed in further research to gather more information on these topics.

8.2 Future Research

The results of our study illustrate the possibilities within eco-labeled products and how supply chain transparency can affect consumer attitudes towards brands. As people are displaying more interest in sustainable products than ever (Carrington et al., 2010; Jung et al., 2020), future research on this topic is highly relevant.

Future research could further investigate the antecedents of the attitude-behavior gap by addressing the part that involves actual behavior. This could be done by studying real purchase intention by conducting field experiments, where consumers are put in a realistic shopping situation. While our study sheds light on consumers' attitudes towards the brand, an approach with higher ecological validity could be of interest in future research.

Further, it could be beneficial to conduct more qualitative studies on the topics we have discussed in our thesis, as the existing research within supply chain transparency in terms of marketing and brand building can be argued as relatively new. Today, blockchain and other tracing methods make it possible to obtain various kinds of information about a product and its journey to the consumer. However, there is still little knowledge regarding exactly what type of supply chain information is perceived as valuable enough to affect a purchase decision. In our thesis, we tried to map this out using different levels of supply chain transparency. However, as we added several types of information to each level, further research could try to identify the information that is most impactful

as an isolated variable. Thus, qualitative studies such as focus groups or in-depth interviews could be of interest, to get a deeper understanding of what kind of supply chain information consumers find relevant, interesting, and understandable.

Moreover, it could be of interest to investigate different ways of presenting supply chain information to the consumer. In our study, we chose to present the information in a written format on the packaging. In other studies, researchers could present information through images, illustrative timelines, information in-store, or solely through QR codes – either on the product itself or on point-of-sale material.

In our study, we found that supply chain transparency in isolation (without a present eco-label) could have a significant effect on perceived utilitarian value. Within product categories where a higher utilitarian value is desired, it could thus be of interest to look further into how supply chain information could be used to enhance utilitarian aspects such as effectiveness or functionality. We would also see that supply chain transparency did not significantly affect perceived hedonic value. However, further research could investigate whether this effect would become significant by including more “hedonic” supply chain information that targets consumer emotions more directly – such as information about the wellbeing of factory workers, animal welfare, and so on.

Looking into other types of products or categories should also be of interest in future research, as we only assessed one type of product in our study (sunscreen). Thus, replicating our study with a wider set of products in various categories could be of interest to display if there are any differences across product types, and why. It could also be relevant to conduct a similar study as ours with different eco-labels. In our experiment, we chose to include only one eco-label, the Nordic Swan, as this eco-label was the most recognized in the pre-test. However, the results might differ across various eco-labels, and therefore this should be of interest in further research. Lastly, individual traits such as psychographics or more in-depth demographics could be considered to map out how to further close the attitude-behavior gap within sustainable products.

9.0 Conclusion

Conclusively, the research we have conducted in our thesis contributes to topics regarding sustainable products and introduces new factors that can affect consumer attitudes towards brands. In our thesis, we introduce supply chain transparency as a factor that affects the relationship between eco-labeled products and attitudes towards the brand. Although consumers are more environmentally aware than ever, our findings indicate that not all sorts of supply chain information contribute to more favorable attitudes towards the brand. Therefore, firms must investigate what kind of information their target market considers relevant and what information adds value regarding their purchase decision.

The possibilities we highlight in our thesis indicate that firms should look further into enhanced disclosure of supply chain information. Consequently, this would require firms to take more ownership of the supply chain in its entirety – which could ultimately help clean up value chains in various aspects, such as environmental sustainability and human welfare. Regardless of challenges within the area of displaying understandable, trustworthy, and easily accessible supply chain information, we believe that our findings present a true possibility for brand building and responsible brand strategies – putting us one step closer towards filling the gap between attitude and behavior within green consumerism.

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Appendix

Exhibit 1: Pre-test

Q1: How important is sustainability when you make a purchase from the following product categories?

Clothing

Food

Beauty products

House Cleaning products

Self-care products (e.g., body lotion, face creams)

Sun-protection

Household items (e.g., toilet paper, tissues)

Electronics

Interior

All questions were measured on a seven-point semantic differential scale, ranging from 1=not at all important to 7=extremely important.

Q2: How important is it to have information on the packaging/label of a product when you make a purchase in the following product categories?

Clothing

Food

Beauty products

House Cleaning products

Self-care products (e.g. body lotion, face creams)

Sun-protection

Household items (e.g., toilet paper, tissues)

Electronics

Interior

All questions were measured on a seven-point semantic differential scale, ranging from 1=not at all important to 7=extremely important.

Q3: How important is the following information when you consider to purchase a product?

Country of origin

Travel distance (e.g., in kilometers)

Water use

Pollution contribution

Origin of raw materials

Place of production (e.g., name of factory)

All questions were measured on a seven-point semantic differential scale, ranging from 1=not at all important to 7=extremely important.

Q4: Which of the following eco-labels have you heard about?

Nordic Swan (Svanemerket)

Nyt Norge

Eco-Lighthouse (Miljøfyrtårn)

FSC (Forest Stewardship Council)

Other (*Open-ended question*)

Q5: How old are you?

(Open-ended question)

Q6: How do you describe yourself:

“Male/Female/Non-Binary, third gender/Prefer to self-describe/Prefer not to say”

Exhibit 2: Pre-test results

Descriptive Statistics					
<i>Q1: How important is sustainability when you make a purchase from the following product categories?</i>					
	N	Minimum	Maximum	Mean	Std. Deviation
Clothing	81	1	7	3.91	1.493
Food	81	1	7	4.42	1.604
Beauty products	81	1	7	3.77	1.698
House Cleaning products	81	1	7	3.83	1.657
Self-care products (e.g., body lotion, face creams)	81	1	7	4.12	1.669
Sun-protection	81	1	7	4.04	1.714
Household items (e.g., toilet paper, tissues)	81	1	7	3.69	1.429
Electronics	81	1	7	3.57	1.724
Interior	81	1	7	3.46	1.674
Valid N (listwise)	81				

Descriptive Statistics					
<i>How important is it to have information on the packaging/label of a product when you make a purchase in the following product categories?</i>					
	N	Minimum	Maximum	Mean	Std. Deviation
Clothing	81	1	7	4.63	1.880
Food	81	1	7	5.54	1.574
Beauty products	81	1	7	4.77	1.893
House Cleaning products	81	1	7	4.64	1.713

Self-care products (e.g., body lotion, face creams)	81	1	7	4.94	1.819
Sun-protection	81	1	7	5.04	1.714
Household items (e.g., toilet paper, tissues)	81	1	7	4.23	1.825
Electronics	81	1	7	4.17	2.036
Interior	81	1	7	3.81	1.872
Valid N (listwise)	81				

Descriptive Statistics				
<i>How important is the following information when you consider to purchase a product?</i>				
	N	Mean	Median	Std. Deviation
Country of origin	81	4.20	4.00	1.778
Travel distance (e.g., in kilometers)	81	3.33	3.00	1.658
Water use	81	3.40	3.00	1.765
Pollution contribution	81	3.98	4.00	1.703
Origin of raw materials	81	4.33	5.00	1.830
Place of production (e.g., name of factory)	81	3.93	4.00	1.869

<i>Which of the following eco-labels have you heard about?</i>		
Nordic Swan (Svanemerket)		
	Frequency	Percent
Valid	76	93.8
Missing	5	6.2
Total	81	100.0

<i>Which of the following eco-labels have you heard about?</i>		
Nyt Norge		
	Frequency	Percent
Valid	58	71.6
Missing	23	28.4
Total	81	100.0

<i>Which of the following eco-labels have you heard about?</i>		
Eco-Lighthouse (Miljøfyrtårn)		
	Frequency	Percent
Valid	46	56.8
Missing	35	43.2
Total	81	100.0

<i>Which of the following eco-labels have you heard about?</i>		
FSC (Forest Stewardship Council)		
	Frequency	Percent
Valid	18	22.2
Missing	63	77.8
Total	81	100.0

<i>Which of the following eco-labels have you heard about?</i>		
Other		
	Frequency	Percent
Valid	6	7.4
Missing	75	92.6
Total	81	100.0

Descriptive Statistics				
<i>How old are you?</i>				
N	Minimum	Maximum	Mean	Std. Deviation
81	19	66	30.26	9.812

<i>How do you describe yourself?</i>		
	Frequency	Percent
Male	26	32.1
Female	54	66.7
Prefer to self-describe	1	1.2
Total	81	100.0

Exhibit 3: Examples of common claims on sun protection products



Exhibit 4: Pictures of the fictive products

Treatment group 1 – Eco-label: Absent; Supply Chain Transparency: Low.

Eco-label	Transparency		
	Low	Medium	High
Present	Condition 1	Condition 3	Condition 5
Absent	Condition 2	Condition 4	Condition 6



Treatment group 2 – Eco-label: Present; Supply Chain Transparency: Low.

		Transparency		
		Low	Medium	High
Eco-label	Absent	Condition 1	Condition 3	Condition 5
	Present	Condition 2	Condition 4	Condition 6




Treatment group 3 – Eco-label: Absent; Supply Chain Transparency: Medium.

		Transparency		
		Low	Medium	High
Eco-label	Absent	Condition 1	Condition 3	Condition 5
	Present	Condition 2	Condition 4	Condition 6



Treatment group 4 – Eco-label: Present; Supply Chain Transparency: Medium.

		Transparency		
		Low	Medium	High
Eco-label	Absent	Condition 1	Condition 3	Condition 5
	Present	Condition 2	Condition 4 	Condition 6



Treatment group 5 – Eco-label: Absent; Supply Chain Transparency: High.


		Transparency		
		Low	Medium	High
Eco-label	Absent	Condition 1	Condition 3	Condition 5 
	Present	Condition 2	Condition 4	Condition 6



Exhibit 5: Main Study – Items in the questionnaire

Variables	Items	Based on
Attitude towards the brand	<p>“How did you feel about the advertised brand?”</p> <p>“Dislike/Like” (Q1)</p> <p>“Bad/Good” (Q2)</p> <p>“Negative/Positive” (Q3)</p> <p>“Unpleasant/Pleasant” (Q4)</p> <p><i>All questions were measured on a seven-point semantic differential scale.</i></p>	Evans et al. (2017)
Utilitarian	<p>To me, this product is:</p> <p>“Unhelpful/Helpful” (Q5)</p> <p>“Useless/Useful” (Q6)</p> <p>“Not functional/Functional” (Q7)</p> <p>“Not problem solving/Problem solving” (Q8)</p> <p>“Unnecessary/Necessary” (Q9)</p> <p>“Ineffective/Effective” (Q10)</p> <p><i>All questions were measured on a seven-point semantic differential scale.</i></p>	Lee et al. (2005)
Hedonic	<p>Rate the following statements from 1-7:</p> <p>“This product reflects my beliefs and values” (Q11)</p> <p>“By purchasing this product, I would feel happy with myself” (Q12)</p> <p>“By purchasing this product, I would feel good” (Q13)</p> <p>“This product enhances my identity” (Q14)</p> <p><i>All questions were measured on a seven-point semantic differential scale, ranging from 1=strongly disagree to 7=strongly agree.</i></p>	Omigie et al. (2020)
Attribute evaluations <i>(extra question)</i>	<p>How important are the following attributes when you consider a purchase of this type of product (as displayed above)?</p> <p>“Product quality” (Q15)</p> <p>“Environmental sustainability” (Q16)</p> <p>“Product design” (Q17)</p> <p>“Sensory aspects (e.g. feel, scent)” (Q18)</p>	

	<p>“Clear product information” (Q19)</p> <p>“Effectiveness” (Q20)</p> <p><i>All questions were measured on a seven-point semantic differential scale, ranging from 1=not at all important to 7=very important.</i></p> <p>Are there any other attributes (not mentioned above) you find to be crucial to purchase this type of product? <i>(Open-ended question)</i></p> <p>If you find any of these attributes to be very important or not at all important - why? <i>(Open-ended question)</i></p>	
<p>Demographics</p>	<p>How old are you? <i>(Open-ended question)</i></p> <p>How do you describe yourself? <i>“Male/Female//Prefer to self-describe/Prefer not to say”</i></p>	

Exhibit 6: Data Cleaning and Description of Sample (Main Study)

Descriptive Statistics					
<i>How important are the following attributes when you consider this type of product?</i>					
	N	Minimum	Maximum	Mean	Std. Deviation
Product Quality	356	3	7	5.87	1.135
Environmental Sustainability	356	1	7	4.93	1.317
Product Design	356	1	7	4.33	1.324
Sensory aspects (e.g., scent)	356	2	7	4.90	1.351
Clear product information	356	2	7	5.51	1.281
Effectiveness	356	3	7	6.21	1.042
Valid N (listwise)	356				

Exhibit 7: KMO and Bartlett's Test (Factor Analysis)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.811
Bartlett's Test of Sphericity	Approx. Chi-Square	3138.488
	df	91
	Sig.	.000

Exhibit 8: Total Variance Explained (Factor Analysis)

Total Variance Explained			
	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	4.916	35.116	35.116
2	2.656	18.974	54.090
3	2.184	15.602	69.692
4	.898	6.418	76.110
5	.704	5.026	81.110
6	.485	3.467	84.603
7	.470	3.357	87.959
8	.358	2.557	90.517
9	.329	2.347	92.864
10	.278	1.983	94.847
11	.228	1.626	96.473
12	.204	1.458	97.930
13	.173	1.239	99.169
14	.116	.831	100.000

Extraction Method: Principal Component Analysis

Exhibit 9: Scree Plot (Factor Analysis)

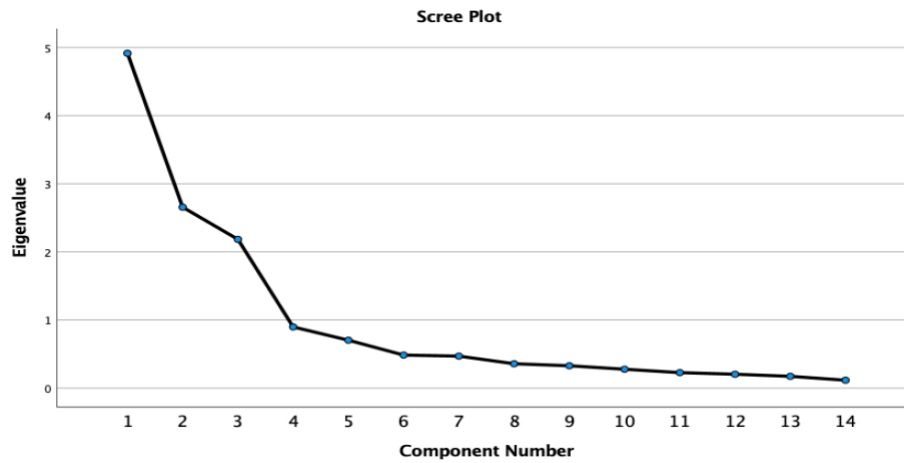


Exhibit 10: Rotated Component Matrix (Factor Analysis)

Rotated Component Matrix			
	Component		
	1 Attitude towards the brand	2 Utilitarian value	3 Hedonic value
Q1	.838		
Q2	.836		
Q3	.825		
Q4	.811		
Q5		.896	
Q6		.876	
Q7		.874	
Q8		.806	
Q9		.734	
Q10		.526	
Q11			.908
Q12			.865
Q13			.812
Q14			.786

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Exhibit 11: Reliability Statistics

Reliability Statistics			
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Attitude Towards the Brand	.857	.859	4
Utilitarian value	.889	.889	6
Hedonic value	.866	.872	4

Exhibit 12: Regression Analysis (H1)

Regression Analysis – Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.117 ^a	.014	.011	.92576	.014	4.890	1	354	.028

a. Predictors: (Constant), Eco-Label

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.191	1	4.191	4.890	.028 ^b
	Residual	303.387	354	0.857		
	Total	307.578	355			

a. Dependent Variable: Attitude towards the brand

b. Predictors: (Constant), Eco-Label

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.828	.070		69.379	<.001
	Eco-Label	.217	.098	.117	2.211	.028

a. Dependent Variable: Attitude towards the brand

Descriptives								
<i>Attitude Towards the Brand</i>								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	55	4.7318	.60640	.08177	4.5679	4.8958	3.50	5.75
2.00	56	5.3170	.85744	.11458	5.0873	5.5466	4.00	7.00
3.00	64	5.1484	.91582	.11448	4.9197	5.3772	4.00	7.00
4.00	60	5.4500	1.14869	.14830	5.1533	5.7467	3.50	7.00
5.00	58	4.5647	.64814	.08511	4.3942	4.7351	3.75	6.50
6.00	63	4.4167	.78802	.09928	4.2182	4.6151	3.00	7.00
Total	356	4.9368	.93082	.04933	4.8398	5.0338	3.00	7.00

Exhibit 13: Univariate Analysis of Variance (H3a)

Supply Chain Transparency * Eco-Label					
<i>Dependent Variable: Perceived Utilitarian Value</i>					
Supply chain transparency	Eco-Label	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Low	Absent	5.539	.124	5.295	5.784
	Present	5.271	.123	5.029	5.513
Medium	Absent	6.167	.115	5.940	6.393
	Present	5.672	.119	5.438	5.906
High	Absent	5.356	.121	5.118	5.594
	Present	5.386	.116	5.158	5.615

Tests of Between-Subjects Effects						
<i>Dependent Variable: Perceived Utilitarian Value</i>						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	33.240 ^a	5	6.648	7.833	<.001	.101
Intercept	10991.218	1	10991.218	12950.757	<.001	.974
Supply chain transparency	22.911	2	11.455	13.498	<.001	.072
Eco Label	5.298	1	5.298	6.242	.013	.018
Supply chain transparency * Eco Label	4.225	2	2.112	2.489	.084	.014
Error	297.043	350	.849			
Total	11396.472	356				
Corrected Total	330.283	355				

a. R Squared = .101 (Adjusted R Squared = .088)

Exhibit 14: Univariate Analysis of Variance (H3b)

Supply Chain Transparency * Eco-Label					
<i>Dependent Variable: Perceived Hedonic Value</i>					
Supply chain transparency	Eco-Label	Mean	Std. Error	95% Confidence Interval for	
				Lower Bound	Upper Bound
Low	Absent	3.800	.155	3.496	4.104
	Present	4.424	.153	4.123	4.725
Medium	Absent	3.781	.143	3.499	4.063
	Present	4.833	.148	4.542	5.124
High	Absent	4.103	.151	3.807	4.400
	Present	4.500	.144	4.216	4.784

Tests of Between-Subjects Effects						
<i>Dependent Variable: Perceived Hedonic Value</i>						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	52.476 ^a	5	10.495	7.982	<.001	.102
Intercept	6380.820	1	6380.820	4852.966	<.001	.933
Supply chain transparency	2.831	2	1.415	1.077	.342	.006
Eco-Label	42.351	1	42.351	32.210	<.001	.084
Supply chain transparency * Eco-Label	6.778	2	3.389	2.577	.077	.015
Error	460.190	350	1.315			
Total	6919.563	356				
Corrected Total	512.666	355				

a. R Squared = .102 (Adjusted R Squared = .090)

Exhibit 15: Univariate Analysis of Variance (H3c)

Supply Chain Transparency * Eco-Label					
<i>Dependent Variable: Attitude Towards the Brand</i>					
Supply chain transparency	Eco-Label	Mean	Std. Error	95% Confidence Interval for	
				Lower Bound	Upper Bound
Low	Absent	4.732	.115	4.506	4.957
	Present	5.317	.114	5.093	5.541
Medium	Absent	5.148	.106	4.939	5.358
	Present	5.450	.110	5.234	5.666
High	Absent	4.565	.112	4.345	4.784
	Present	4.417	.107	4.206	4.628

Tests of Between-Subjects Effects						
<i>Dependent Variable: Attitude Towards the Brand</i>						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	54.150 ^a	5	10.830	14.957	<.001	.176
Intercept	8653.460	1	8653.460	11950.969	<.001	.972
Supply chain transparency	41.163	2	20.581	28.424	<.001	.140
Eco-Label	5.379	1	5.379	7.429	.007	.021
Supply chain transparency * Eco-Label	7.968	2	3.984	5.502	.004	.030
Error	253.428	350	.724			
Total	8984.000	356				
Corrected Total	307.578	355				

a. R Squared = .176 (adjusted R Squared = .164)

Pairwise Comparisons						
<i>Dependent Variable: Attitude Towards the Brand</i>						
(I) Supply chain transparency	(J) Supply chain transparency	Mean Difference (I-J)	Std. Error	95% Confidence Interval for		
				<i>Sig.^b</i>	Lower Bound	Upper Bound
Low	Medium	-.275*	.111	.014	-.494	-.056
	High	.534*	.112	<.001	.314	.754
Medium	Low	.275*	.111	.014	.056	.494
	High	.809*	.109	<.001	.595	1.023
High	Low	-.534*	.112	<.001	-.754	-.314
	Medium	-.809*	.109	<.001	-1.023	-.595

Based on estimated marginal means

*. The mean difference is significant at the .05 level

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).