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Eco-driven behaviour and greenwashing awareness of students in Estonia

Bachelor's thesis
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I hereby declare that I have compiled the thesis independently
and all works, important standpoints and data by other authors
have been properly referenced and the same paper
has not been previously presented for grading.

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Nikita Shevchenko
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ABSTRACT

Along with the increase in society's interest in an eco-friendly lifestyle, the volume of products with dubious environmental inscriptions and symbols is growing. This creates opportunities for companies to mislead customers using unfair marketing strategies. One of these strategies is greenwashing, which is when companies pretend to be eco-friendly when they are not.

Aim of this study is to analyse greenwashing awareness as well as measure the level of eco-friendliness of students in Estonia. For this purpose, a quantitative research method was chosen and an online questionnaire was created. Later it was distributed to people who are in charge of the study programs in the three biggest universities in Estonia and 114 responses were collected.

As a result, the study showed that most participants knew what greenwashing is and have encountered it. However, respondents faced some hardships in differentiating greenwashing from green marketing. Another finding suggests that for the most part, students in Estonia are eco-conscious in at least one area of their lives. Yet, the eco-friendliness of a product is not its most important quality.

Keywords: Greenwashing, consumer behaviour, environmental marketing

INTRODUCTION

Climate change is a complex and life-threatening issue that humanity has to tackle (Mckeever, 2021; Worldwildlife, n.d.). In the previous decade, there has been a tendency in behaviour changes towards an eco-friendly lifestyle in economically developed countries (Vicente-Molina et al., 2013). As a result, a spike in consumers' interest in eco-friendly products has shifted many companies towards creating new or enhanced "green" versions of already existing products. While this is a positive phenomenon, it could also be perceived as controversial, since it provides companies with opportunities to utilise greenwashing in order to increase profits and attract new customers. According to the Cambridge Dictionary (n.d.), greenwashing is defined as "behaviour or activities that make people believe that a company is doing more to protect the environment than it really is". Frequently, greenwashing is used in companies' slogans, colours, images or symbols to demonstrate deceptive fictional ecological characteristics (Parguel et al., 2015), and as Kurpierz and Smith (2020) put it, greenwashing could be even considered a fraud. That is why it is vital for consumers to be fully informed in order to have positive purchase intentions based on their trust in the companies (Akturan, 2018; Chen & Chang, 2013).

Another key factor to remember is that greenwashing is creating an unfair marketing environment and thus is limiting consumers from purchasing sustainable and eco-friendly products or services since they become less competitive (Parguel et al., 2011). An equally significant aspect that should be considered is the societal impact, which is constructed by the behaviour of every person in that society. While greenwashing does nothing (or very little) to prevent or minimise climate change, it satisfies the need to be ecologically responsible and decreases the amount of guilt that drives people to change their behaviour. Subsequently, the author believes that such practices might even facilitate climate change. Therefore, it is essential for people to understand the greenwashing effect, recognize it in products, and support only those companies who are actually moving towards environment-friendly business operations. Thus, the research problem of this study is the limited knowledge of the current state of the presence of eco-driven behaviour and greenwashing awareness among students in Estonia. That is why the aim of this research is to discover the extent of social awareness of the greenwashing

phenomenon as well as measure the general spread of eco-driven behaviour among students in Estonia. To do that author posed three research questions, which are the following:

RQ1: What is the level of greenwashing awareness among students in Estonia?
RQ2: With what frequency do students make eco-driven decisions?
RQ3: What is the rank of importance of the product's perceived ecology to students?

Even though there have been many studies conducted on this topic (Martínez et al., 2020; Nyilasy et al., 2012; Nyilasy et al., 2014; Rahman, 2015; Singhal & Agrawal, 2021), it is still a pressing issue. Moreover, there is a geographical gap in research, meaning that there has not been any research conducted in Estonia with a specific sample. While it is understandable why someone would focus their research on larger countries with bigger populations and production scales, Estonia continues to be a country located on one of the most polluted seas in the world - the Baltic Sea (Loctier, 2021). Thus, the social awareness of its population is crucial in addressing the climate change issue in the region.

Consequently, the author proceeded with the research by identifying, suitable for fulfilling the aim, research design. Thus, a quantitative approach had been chosen with survey as a data collection method and descriptive and inferential statistics as data analysis methods. The survey was conducted online using Google Forms software. Firstly, several sample criteria were identified, those were: being 18-30 years of age, living in Estonia, studying in one of the three major public universities (University of Tartu, TalTech, and Tallinn University), and being able to communicate in English. Further, based on the analysis of previous studies, the author composed 20 questions that were derived from research questions. The questionnaire was sent out to the desired sample through people responsible for English-language-based study programs. After the data had been gathered, and descriptive statistics had been presented, inferential statistical analysis had been done with the use of SPSS software.

The paper is structured as follows: at first, the theoretical framework of the research is explained. The section consists of two chapters, the first one focusing on greenwashing phenomenon and the second one depicting three models of consumer behaviour - Engel Kollat Blackwell Model, Maslow's Hierarchy of Needs Model as well as eco-driven behaviour. Each of them is discussed in a separate sub-chapter. Next, the methodology section is presented, which provides detailed information regarding research design, creation of the questionnaire, as well as the processes of

its distribution and further data analysis. The empirical section consists of two chapters - results and discussion, each of which is also divided into two sub-chapters based on the angle of research aim it represents. Thereby, both results and discussion chapters include one sub-chapter regarding greenwashing awareness of the respondents, and one - regarding eco-driven behaviour of the participants. It is followed by the conclusion and list of references. The paper ends with five appendices.

1. THEORETICAL FRAMEWORK

In this section the author explains two main concepts of this study. It starts with the definition of greenwashing, provides some information about the history of where the term comes from and what it is used for as well as presents the most common methods of greenwashing. After that, the concept of consumer behaviour is explained and three chosen consumer behaviour models are introduced.

1.1. Greenwashing Phenomenon

One of the main theories used in this study is greenwashing. It could be defined as “the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound” (Kenton, 2022, para. 1). To simplify – greenwashing is done by companies that are trying to change customers’ perception of how environmentally friendly their product or service is without actually being “green”. For the first time greenwashing was used to call out the pseudo-environmental actions of hotels. They used "green cards" in which they urged guests to save water and reuse towels. However, in an essay written in 1986 by environmentalist Jay Westerveld, he found that these hotels did not do anything beyond trying to cut costs.

In many countries, the meanings of such words as “environmental”, “green”, and “natural” are not legally specified. Due to that, a lot of companies are putting these words on their packaging or in their marketing materials in an attempt to abuse these legal loopholes. These actions are allowing them to attract more customers. For instance, during press releases, companies could point out their new “green” initiatives in order to appear advantageous against competitors. However, in the study done by Parguel et al. (2015), one more way of greenwashing has been described, which is called “executional”. It has been defined as a process when companies start using pictures of nature or anything that could be perceived as “green” on a non-eco product.

As climate change becomes a more pressing issue, greenwashing practices become more spread among companies, and thus more and more researchers focus their studies on aspects of greenwashing (Aji & Sutikno, 2015; Braga Junior et al., 2019; Mangini et al, 2020). Such scientific activity is beneficial to the public as it creates a basis of knowledge, classification of used practices, and provides a foundation for lawmakers and future regulations of business activities. If being looked at more in-depth – greenwashing methods can be divided into two groups:

Simple. For instance – packaging made of a specific material that could be perceived as eco-friendly like craft paper. Some companies could use green and brown colours, images of leaves, trees or other plants in the design, as well as words like "ecological" in the product description. Another example is that a company can use an environmental statement that is true but is not a company's achievement. One of the most regular cases is when the component is forbidden to be used in such products at the legislative level. Quite commonly, the packaging of tubes of toothpaste includes such phrases as 'without heavy metals in the composition'. This statement is absolutely unnecessary since the presence of heavy metals is prohibited by law. Thus, this legislation becomes a tool for marketing to attract customers, as it provides a false sense of acquiring a healthier product.

Sophisticated. For example, a manufacturer can label products with environmental certifications that the product has not actually received. Some companies go even further and start using non-existing environmental certificates. Another one of the most frequently used methods is fronting (Laufer, 2003). According to Groenendaal (2018, para. 5), "fronting commonly involves reliance on data or claims of compliance based on misrepresentations of facts whether made by the organisation claiming compliance or by any other person". In other words, it is used by companies to show their customers only actions that are perceived as environmentally friendly, hiding the ones that could be seen as a threat to these statements.

Schmuck et al. (2017) in their paper cited their own previous unpublished manuscript, where they explained that even very informed people may not be able to correctly identify some of the forms of greenwashing. One of the reasons for that might be that companies that are using such unethical marketing strategies are trying their best to make sure consumers never find out. That is done because once use of greenwashing is discovered – both brand credibility and green brand associations will be negatively affected (Akturan, 2018). Moreover, according to Wang et al.

(2020), the intention of buying other green brands can be affected by just one brand's greenwashing behaviour. That is why it is crucial to address this issue on a regulatory level, since greenwashing does not only affect consumer behaviour, but it also impacts their purchasing intentions (Akturan, 2018). Aspects of this theory provide us with the necessary framework for conducting this study.

1.2. Consumer Behaviour

Almost every purchase is done with customers going through a buying decision process (Kotler, Keller, 2016, p. 194). As in any market research, it is essential to understand the nature of consumer behaviour and the factors impacting it. According to Engel, et al. (1986), consumer behaviour could be defined as "acts of individuals directly involved in obtaining, using, and disposing of economic goods and services, including the decision processes that precede and determine these acts". Stochastic models are among the most common ones describing consumer behaviour. According to Montgomery et al. (1970, p. 4), "A stochastic model is a model in which the probability components are built in at the outset rather than being added ex post facto to accommodate discrepancies between predicted and actual results". Since that is the main focus of this research, it was customary to use these marketing models.

1.2.1. Engel Kollat Blackwell Model

The reason for choosing Engel Kollat Blackwell's model is mainly because it "has a good description of active information seeking and evaluation processes of consumer" (Jisana, 2014). This model represents the various variables that influence the consumer's decision-making process, while also trying to figure out the initial relationships established between the individual components and sub-components of this process. Moreover, it takes into account the process of transformation of information by the consumer, best represents the specifics of the processes occurring in memory and considers equally both positive and negative results of purchases.

In this model, the consumers' behaviour is divided into five steps (Engel et al., 1968):

- Recognition of the problem
- Information search
- Alternatives evaluation

- Purchase
- Outcome

The first step is when consumers recognise the existence of discomfort or develop a desire to satisfy their needs. At this stage companies that have huge established brands gain an unfair advantage against the competitors, since customers will think of them before doing any research. However, if there are no companies that customers have on top of their minds they will move on to the second step.
Information search is when customers are trying to gather as much knowledge about products or services that are available on the market as possible. At this stage, most people will check companies' social media accounts and also look for reviews. On the other hand, as described in the first step – some people might search for the solutions in their previous experiences or even memory.

After that, the third stage is being introduced. During this step, customers compare information and reviews about the products or services and evaluate which one is the best option for them. If customers see that the product is eco-friendly, it is more likely that they will value it more than not “green” alternatives. Moreover, to multiply this effect we could use a study by Alexander Chernev (2021) that showed that people perceive products’ performance to increase when the whole company is seen as environmentally friendly. Alexander Chernev said: “It’s about positioning the company as investing in sustainability in general, not just in specific products” (Waikar, 2021). At this stage, it is vital to develop good marketing funnels and keep an eye on statistics and key metrics to ensure that conversion rates are as good as possible. Creating a compelling offer will result in more interest in the product and will lead customers to the next step. Penultimate and arguably the most important stage is purchasing. At this step the customer makes a final decision to buy the product or service.

Finally, the last piece of the Engel-Kollat-Blackwell model is “Outcome” or “Post-purchase evaluation”. This step is crucial for the companies to pay attention to, since satisfaction with the product may be one of the key factors in creating more loyal customers. Moreover, the consumer decision-making process is a repetitive action, hence having a good experience is necessary to ensure customers choose your company for their next purchase (Ofir & Simonson, 2005).

The Engel-Kollat-Blackwell model is one of the most principal works in the field of consumer behaviour. Also, since eco-friendly consumers are more aware of the products they are buying, this particular model and especially its first, second and fifth stages were one of the key parts in providing valuable insights into the interpretation of the empirical data.

1.2.2. Maslow's Hierarchy of Needs

Second model of consumer behaviour that is used in this study is Maslow's Hierarchy of Needs. As McLeod (2022, para 1) explains it, "Maslow's hierarchy of needs is a motivational theory in psychology comprising a five-tier model of human needs, often depicted as hierarchical levels within a pyramid".

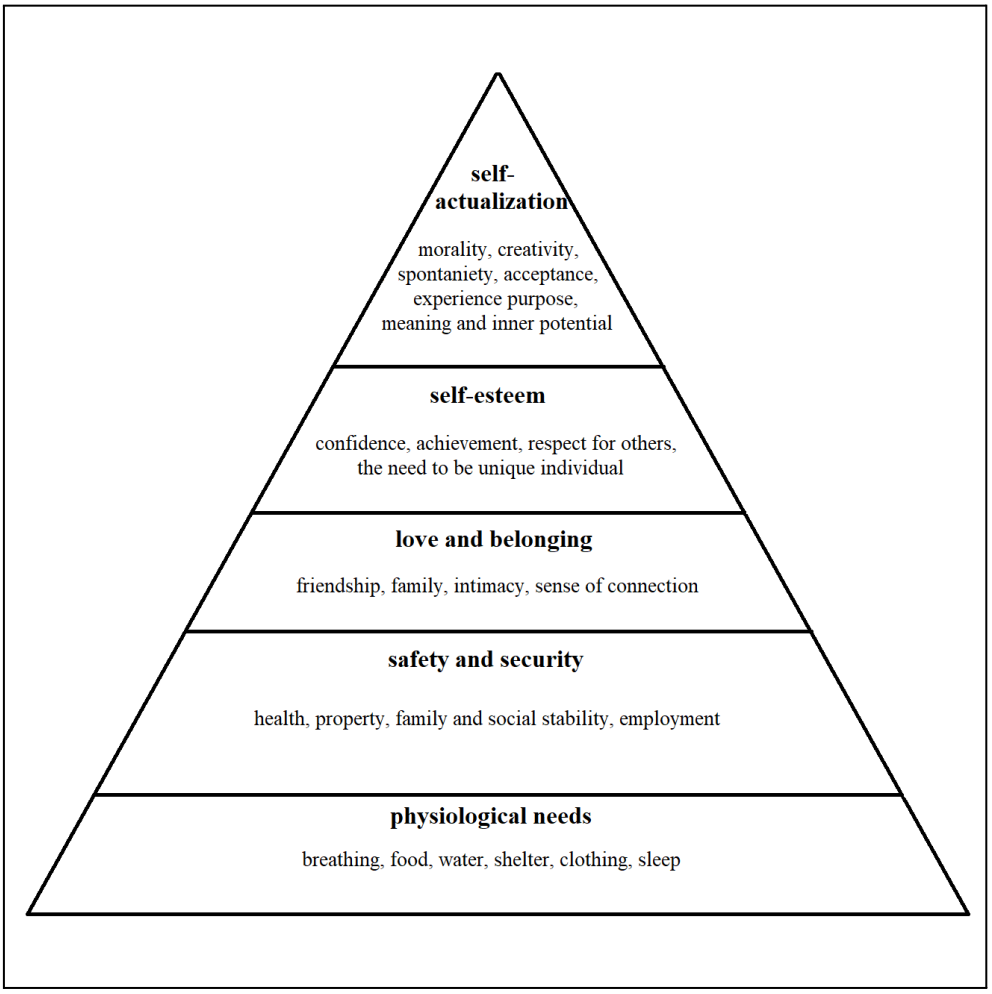

Figure 1. Maslow's pyramid of needs
Source: Maslow, 1943, recreated by the author

One of the parts of the theory is self-esteem needs, which "Maslow classified into two categories: (i) esteem for oneself (dignity, achievement, mastery, independence) and (ii) the need to be accepted and valued by others (e.g., status, prestige)" (McLeod, 2022, para 34). Both of these categories help the author uncover some logic behind the decisions people make in eco-friendly purchasing. A good example of the need for self-esteem and specifically getting respect from others could be found in the study by Griskevicius et al. (2010), where the reasons for buying Toyota Prius were not only saving money but also making a statement about oneself since the car could be perceived as an eco-friendly alternative. Another factor of this theory being important for this study is explained by Bellotti et al. (2015) claiming that it is vital to understand the motivations that lead customers to take part in the context of new consumption patterns in the so-called sharing economy. According to the Oxford English Dictionary, the notion of the sharing economy means "an economic system in which assets or services are shared between private individuals, either free or for a fee, typically by means of the internet." Many of the companies that are working in this field are considered eco-friendly. "The sharing economy has positive environmental impacts, through a reduction in the total resources required and it helps reduce pollutants, emissions and carbon footprints. In the transportation sector, vehicle sharing behaviour can have a positive environmental impact by decreasing the number of kilometres travelled" (Mi & Coffman, 2019).

1.2.3. Eco-driven behaviour

One of the study objectives was to find how frequently students make eco-driven decisions. In order to do that it was necessary to identify the meaning of this theory. Eco-driven behaviour is often called sustainable or environmentally friendly consumer behaviour (Cossio, 2022; Yahua et al., 2016). In the study by Krajhanzl (2010, p. 252), he defines pro environmental behaviour as: "behavior which is generally (or according to knowledge of environmental science) judged in the context of the considered society as a protective way of environmental behavior or a tribute to the healthy environment." To simplify, eco-driven behaviour is the one that has any noticeable positive impact on the environment. According to Krajhanzl (2010), this kind of behaviour is affected by several factors:

- Relationship to nature
- Personality
- External conditions

Relationship with nature of an individual is mostly defined by a person's attitude and exposure to any activities that are connected to nature, such as walks in a park or even growing something in their backyard. Even though this is one of the main factors that has influence on pro environmental behaviour, it is not always the case. Another key factor that has an effect on the eco-driven behaviour is personality. Specifically, such things as life values, attitudes, personality traits, abilities and lifestyle are tightly connected to the environmental behaviour of an individual (Krajhanzl, 2010). One more essential factor is external influences. It is logical to assume that people would be prone to behave in a more eco-friendly manner if the conditions around them were supportive of such behaviour. Quite often, these three factors are intertwined. For instance, a person's level of general concern for the wellbeing of the environment is formed based on the information the person receives from external sources. With time, such concern or its absence becomes a part of a person's personality, and thus, continues to influence their behaviour. Particularly, worrying about the future of the environment can impact one’s behaviour both towards action and inaction. For some, it may drive them to consume and live more consciously with the extra care for the environment, while for others, it may lead to the feeling of hopelessness and an opinion that any action is meaningless due to the ill-fate of the future.

2. METHODS

2.1 Research Method

The study uses quantitative design since it concentrates on collecting numerical data (Babbie, 2010). Along with the previous statement, it is necessary to take into consideration that the research questions focus on the level of awareness in Estonian society so that the rationale behind such choices partly lies in the nature of the research gap. According to Coghlan et al. (2014), "quantitative research includes methodologies such as questionnaires, structured observations or experiments and stands in contrast to qualitative research." Provided that, the author decided to use the survey as the data collection method. Knowing that the quantitative method was used – a deductive approach was chosen. According to Burney and Saleem (2008), the type of analysis that is commonly used for this is statistical inference and numerical estimation. That is why deductive descriptive and inferential statistics were chosen as the data analysis methods.

However, by using a quantitative approach some limitations are faced. For instance, respondents are unable to add context to their answers, since their responses lie only within closed-end questions that were asked in the questionnaire. That could lead to missing some insights. For the same reasons, quantitative research is less flexible compared to the qualitative approach (Ohman, 2005). Nevertheless, the responses to the online questionnaire were collected during the period of 12 days in the middle of November 2022. Thus, this research reflects the most recent picture of the social landscape regarding greenwashing awareness. With an understanding of such flaws, the author proceeded with the study's conduction.

2.2 Research Design

The population of the research is English-speaking students living in Estonia. Thus, the criteria for the sample include being in the age range between 18 and 30 years old, having a residence or citizenship in Estonia, studying in any of the three major public comprehensive universities in Estonia (University of Tartu, TalTech, Tallinn University), and being able to communicate in English. The rationale behind such choices is described further:

Such an age range (18-30 years old) is considered to be the most optimal because, according to the survey, which was conducted by HelloFresh (2020), people aged 18-24 are the most environmentally conscious. Logically, those who care about the current and future state of the environment, are more prone to become the victims of greenwashing, than those who do not care. After carrying out a process of investigating scientific articles and theses that were made on such topics, several gaps were found. One of them was geographical since no research was performed with any specific sample in Estonia. The decision to focus on the English-speaking population instead of the Estonian-speaking one lies in the author's lack of knowledge of the Estonian language. Without it, in such cases, the need for translation services would rise, which might have led to misrepresentation as well as lost nuances in the data. This limitation needs to be addressed in further research.

In order to determine the size of the sample the author first had to calculate the size of the research population. For this purpose, the author sought out statistical data regarding international students studying Bachelor and Master programs in all three universities in 2021. According to University of Tartu Statistics (n.d.), there were 1402 international students enrolled in the University of Tartu, 1181 international students in TalTech (TalTech, n.d.a), and 808 international students in Tallinn University (Tallinn University, n.d.b). By adding up the numbers, it became clear that the total research population is 3391 students. The perfect sample for such a population is 341 people (Sekaran & Bougie, 2013). However, due to limited resources and a short timeframe, it turned out not to be possible to motivate such a large number of students. Thus, the author had to turn to the guidelines regarding the minimum acceptable sample size for such research, which is 100 students (Conroy, 2018). In such a case, the margin of error is still acceptable and is equal to approximately 9 %.

After figuring out the sample criteria, the author began creating the research questionnaire. This process had four stages: research, compilation, testing, and refinement. During the research stage, the author analysed previous studies conducted on similar topics that used surveys as their data collection method. After that, the questionnaires, the data authors were able to get, as well as the studies' gaps and limitations were thoroughly looked through in order to avoid making the same mistakes. Further, the author specified the angle of the survey based on the chosen theoretical framework and started the compilation process. It had two phases: at first, the author determined the type of data needed to gather and then turned to books on quantitative research methodology to see what types of questions would suit best to provide the necessary data. It is

essential to point out the connection between research questions and developed questionnaire questions (see Table 1).

Table 1. Relation of questionnaire questions to the research questions

Research questions	Questionnaire questions
RQ1: What is the level of greenwashing awareness among students in Estonia?	Q8, Q10, Q11, Q12, Q13, Q14, Q15, Q16
RQ2: With what frequency do students make eco-driven decisions?	Q2, Q5, Q6, Q7, Q9,
RQ3: What is the rank of importance of the product's perceived ecology to students?	Q1, Q3, Q4, Q9, Q17

Source: Created by the author based on Appendix 1.

The first part of the questionnaire was designed to lead up to the section about greenwashing, while simultaneously researching respondent's consciousness about ecology, their beliefs regarding people's ability to affect the change, their readiness to adapt their own behaviour, and last but not least, the position of eco-friendliness of the product in their value-system.

The second section focussed on evaluating the level of greenwashing awareness, whether participants would be able to separate it from green marketing, as well as researching if people would stop buying from a brand that they knew was using such unfair marketing tactics and the reasons behind why they would do so.

It is essential to mention that the socio-demographic data was collected at the last stage of the questionnaire. Such a decision was made to improve the flow of the questionnaire, to increase the honesty of responses, and to avoid putting the most important questions at the end, when respondents may already feel tired.

After the first draft of the survey questionnaire which consisted of 20 questions was completed – the testing stage began. At this point, the author distributed the survey to a small group of people (about 5% of the planned sample). After receiving the results and the feedback from them - the refining process started, which consisted of improving the survey content, structure, and flow in

order to get the highest possible response rate. As a result, the final questionnaire had a total of 20 questions, of which: 13 were single select multiple choices, 4 were multi-select multiple choices and 3 were likert-scale (see Appendix 1).

2.3 Data collection and analysis

Eventually, the search for the best distribution method of the final draft of the survey questionnaire began. Since participation in this study is voluntary, it is expected that not everyone presented with the opportunity will agree to do it. Thus, due to the need to reach as many students as possible the decision to disseminate information about the questionnaire through online channels was made. After careful consideration of various possible ways to do it, the author decided to send out emails with the link to the questionnaire to the people responsible for the English language-based study programs of the three biggest Estonian universities asking them to share it with their students. The author believes that by distributing links via such credible sources — the response rate from students would increase. By using the official websites of the universities (Tallinn University, n.d., TalTech, n.d., University of Tartu, n.d.), the author found out that there are a total of 66 study programs in Bachelor and Master levels taught in English. It is essential to mention that this number of study programs was acquired and calculated with the idea in mind that joined programs between Estonian universities should only be considered once, hence in Appendix 2, they appear only in one of the tables. In addition, joined programs with foreign universities were excluded from the contact list, since they might not fully consist of the desired sample. Next, the author compiled a list of contacts (see Appendix 2), and sent out emails asking them to share the questionnaire with the students of their study programs. As could be seen in Appendix 2, some people were responsible for more than one programme. Taking that into account – 42 people were contacted, out of them 11 replied and 8 agreed to share the link to the survey.

After collecting the data about participants there were slightly more males than females, being 49.5% against 44.8% (see Table 2). At the same time, 5.7% of respondents decided to withhold this information or did not fall into a binary category of gender. The majority (43.8%) of participants were aged 22-25, while there was still a big number (38.1%) of younger people aged 18-21. The older segment of this demographic cohort was almost twice as lower as any other and was equal to 18.1%. A similar picture has a distribution between Estonian universities, in which

TalTech and Tallinn University students were almost even in numbers (39% against 40%). Even though there are more international students in the Tartu University than in any other governmental higher education institution in Estonia (University of Tartu Statistics, n.d.), due to lack of participation there were still twice as few respondents who study there (20%).

Table 2. Socio-demographic portrait of the sample

	Number of respondents	Percentages
Genders		
Male	52	49.5%
Female	47	44.8%
Other/Rather not say	6	5.7%
Age		
18-21	40	38.1%
22-25	46	43.8%
26-30	19	18.1%
University		
TalTech	41	39%
Tallinn University	42	40%
University of Tartu	22	21%
Total	105	100%

Source: Created by the author based on Appendix 3.

Due to strict limitations, the time frame for receiving questionnaire answers was from 09.11.2022 to 20.11.2022. As a result of using the survey, a mix of nominal, ordinal and ratio data was collected. In order to analyse the received answers the author decided to use descriptive

and inferential statistics. Since most questions were meant to be analysed as single entities it was logical to create charts to better display the results. For interpreting the data and making predictions – inferential statistics was chosen. To find the correlation between the answers the author used regression analysis and uploaded the data to SPSS software, where the linear regression formula was applied.

3. EMPIRICAL SECTION

The section begins by introducing an amount of raw collected data and how it was filtered, followed by two sub-chapters, each describing a certain angle of the researched topic. The first sub-chapter corresponds to the second and third research questions and provides insights into the general eco-driven behaviour of the participants. The second sub-chapter corresponds to the first research question and is focused on greenwashing awareness. After that, the discussion chapter is introduced. It provides a deeper interpretation of the results and their place in the wider scientific picture.

3.1. Results

In total, the survey collected 114 responses, nine of which had to be removed as they did not correspond to the sample criteria. In detail, two respondents were younger than 18 years, 6 respondents were older than 31 years, and one respondent turned out to be based at Utrecht University, located in the Netherlands. As a result, the final number of responses that were analysed are 105 and specifics of the socio-demographic data can be found in Table 2.

3.1.1 Eco-driven behaviour

Since the questionnaire was designed with a specific logical structure in mind, answers to the second and third research questions could be found in two questionnaire sections. To specify, in questions 1-7, 9 and 17 (see Appendix 1).

The first two questions were used as an opening to the questionnaire. As can be seen in Figure 2, when asked about the level of concern regarding the future state of the environment in the first question, 73.3% (answers 4 and 5 combined) of respondents showed high concern, 22.9% presented with middle concern, and 3.8% showed little concern. None of the respondents picked the option with no concern at all.

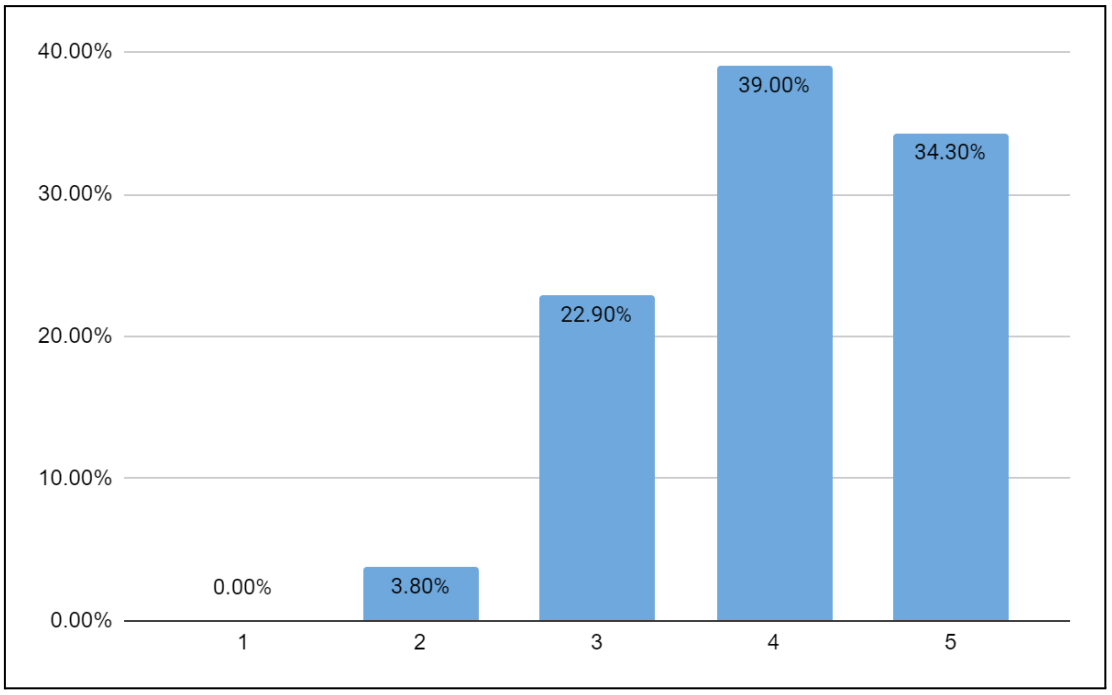

Figure 2. Level of concern for the future state of the environment
Source: Created by the author based on Appendix 3.

The second question was phrased as: "Who do you think has to act in order to positively affect the state of the environment?" The responses to it are particularly interesting since participants had to pick someone to hold responsibility for positively affecting the environment. For this matter, the multiple-choice type of question was used. The results (see Figure 3) show that most of the respondents (94.3%) believe that governments have to act, and 77.1% believe that the power is located in the hands of corporations. At the same time, 70.5% of participants put the responsibility on international organisations, while 66.7% included consumers as the ones who have to act. However, only 59% of respondents took the responsibility upon themselves. NGOs and Small Businesses were expected to act the least: 35.2% and 36.2% respectively.

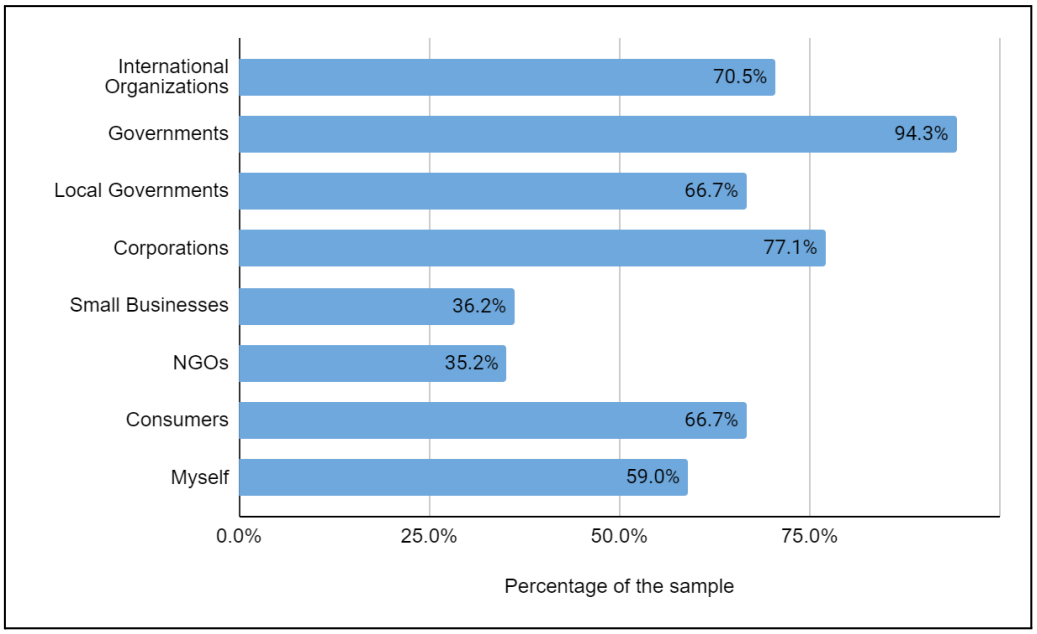

Figure 3. Actors chosen as responsible for a positive effect on the environment

Source: Created by the author based on Appendix 3.

Some interesting findings can be seen when answers to these two questions are analysed together. It becomes clear that each person who has low to middle concern about the environment believes that the government is the primary responsible actor. Moreover, only half of them included themselves as someone who is in control.

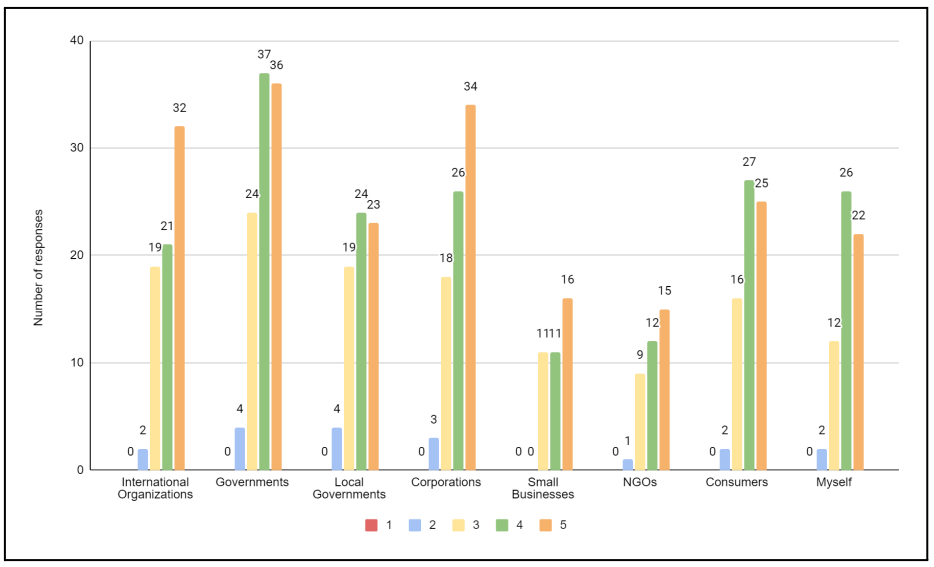

Figure 4. Responsible actors according to respondents related to their level of concern about the environment

Notes: In figure legend colours with numbers are what people answered to the first question.

Source: Created by the author based on Appendix 3.

It is equally important to take a look at people who are highly concerned about the environment. As can be seen, 94.8% put responsibility for change onto governments, and only 62.3% included themselves as those who have to act (see Figure 5).

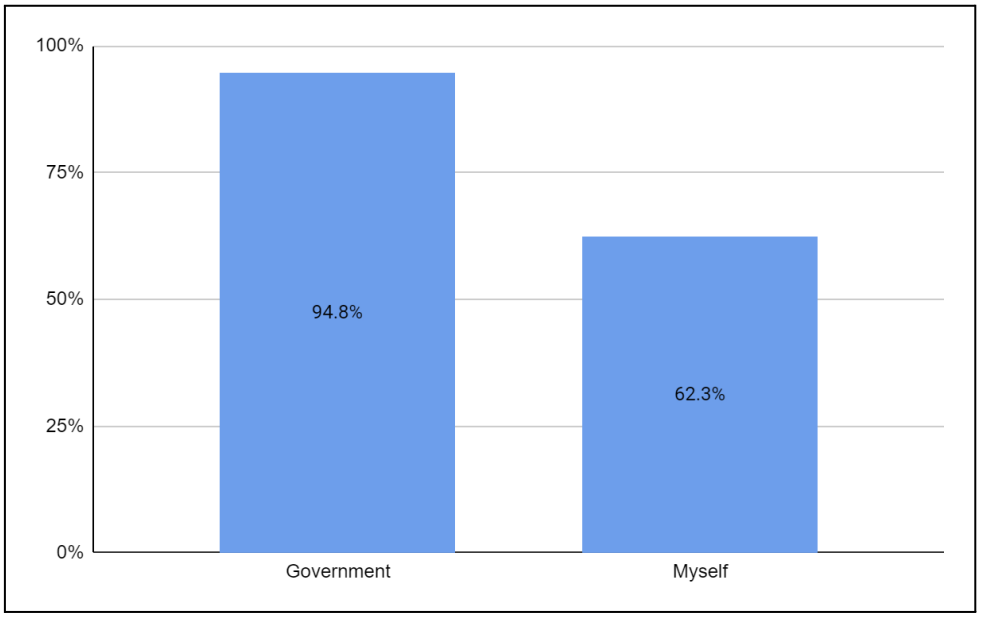

Figure 5. Responsible actors according to respondents who are highly concerned about the environment

Notes: These respondents are people, who answered 4 or 5 in the first question

Source: Created by the author based on Appendix 3.

The next two questions (Q3 and Q4) were aimed at discovering how important is the environmental impact of the product to participants. Figure 6 shows acquired data to the question: “When purchasing, do you consider the environmental impact of the products you buy?” As can be seen, almost half of the participants (52) take this quality into account from time to time. The second most popular answer was that people are considering this factor most of the time (25). On the contrary, 22 participants almost never gave a thought to the impact on ecology. Finally, a minority of participants chose the extremes: 3 answered that they always consider it, while another 3 responded that they never did that.

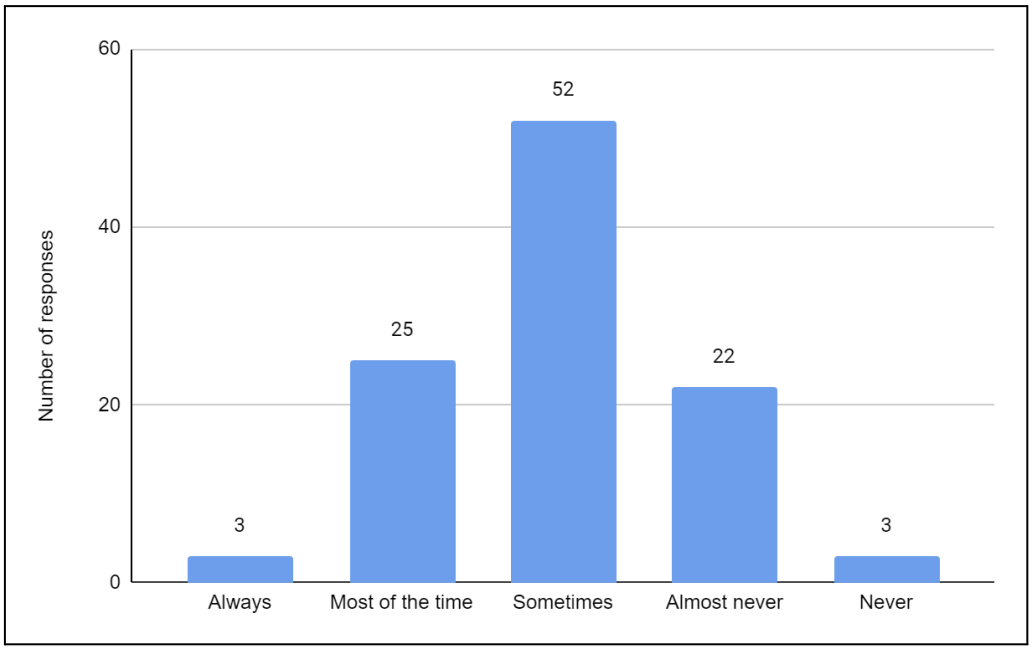

Figure 6. With what frequency do the respondents consider the environmental impact of the products

Source: Created by the author based on Appendix 3.

Consequently, in the next question, the author asked participants to range the options from the most important to the least important qualities of the product when they buy it. The results are presented in Table 3. Each column states the place in the range, while each number - is the number of respondents who put it there. The coloured cell represents the most frequent position of the quality. Thus, for the majority of people, the most important is the overall quality of the product, while the least important is its status and fanciness. The ecology of the product is most frequently positioned in the middle of the values range, in the 4th place, right after the organics of the product and just before the design of the packaging.

Table 3. Rating of qualities of the product on a scale of importance

	Number 1	Number 2	Number 3	Number 4	Number 5	Number 6
Design	8	14	9	16	46	13
Ecology	3	16	28	39	13	3
Organics	4	14	36	22	18	9
Overall quality	67	19	3	4	5	10
Healthiness	15	38	16	15	12	9
Status	0	4	13	9	11	61

Source: Created by the author based on Appendix 3.

Notes: Number 1 is the most important and number 6 is the least important. Yellow-colored cells show the highest number of responses related to the qualities of a product

Questions 5 and 6 were meant to be analysed in a bundle. Question five aims to discover the areas of produce, in which study participants are ecologically conscious, while question six is focused on the frequency with which they consume products from such areas. The majority (65.7%) of participants stated that they behave ecologically in the means of transportation (see Figure 7). Almost half of the respondents expressed that they are ecologically conscious in the areas of food and beverages (45.7%) along with clothes and accessories (42.9%). However, only a third are ecologically conscious when making purchases in such areas of produce as “Personal Care” (30.5%) and “Household items” (34.3%). In the “Other” field 1% mentioned that they are taking environmental impact into account when purchasing batteries.

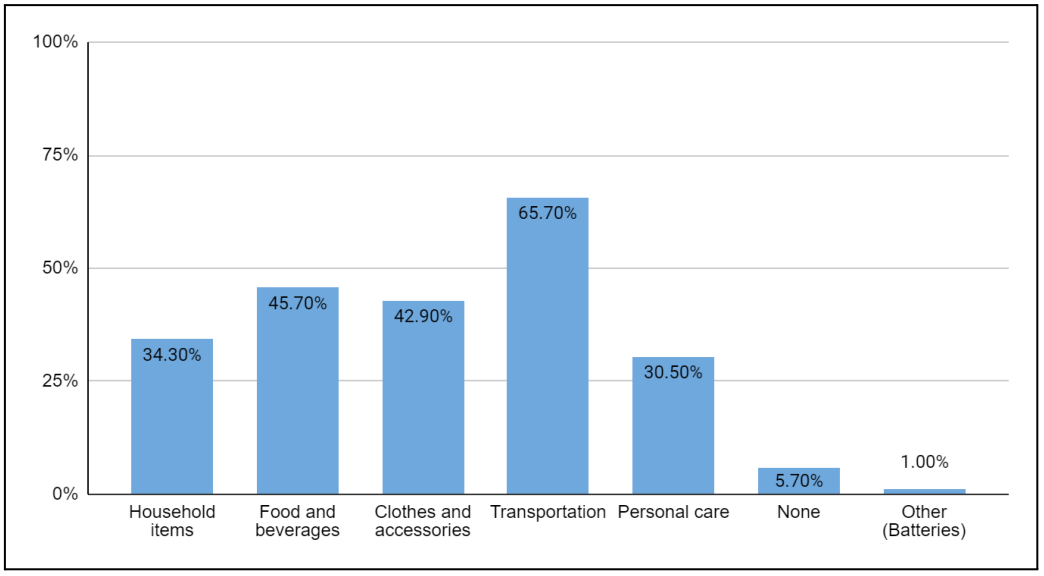

Figure 7. Areas of produce, in which respondents consider themselves ecologically conscious
Source: Created by the author based on Appendix 3.

As can be seen in Figure 8, the most frequent answer among the respondents who chose clothes, transportation and personal care was purchasing it 1-2 times a month. However, food and beverages were bought more frequently, since data shows that the majority of people shopped for them at least 2-3 times a week. On the other hand, household items' purchases were evenly distributed between periods of 2-3 times a week, 1-2 times a month and every couple of months. An interesting insight is that, as can be seen on the figure below, light blue colour corresponds to the option of never buying a product. This option was added to let those participants, who are not behaving ecologically conscious, to answer this question as well. The author assumed that the number of responses to option "None" in question five and option "Never" in question six would be equal. However, there are some light blue columns in areas of food, clothes, and transportation, meaning that some participants stated that they are ecologically conscious in those areas, but they also never consume products of them. The author believes that in future research it would be beneficial to dive deep into this aspect, and find out whether a person can be considered eco-conscious in a certain area if he or she does not consume products of such type at all. In addition, exploration of how self-perception as an eco-conscious person in a certain area without actual product consumption, may affect one's consumer behaviour in those areas, in which one does not perceive oneself as eco-friendly.

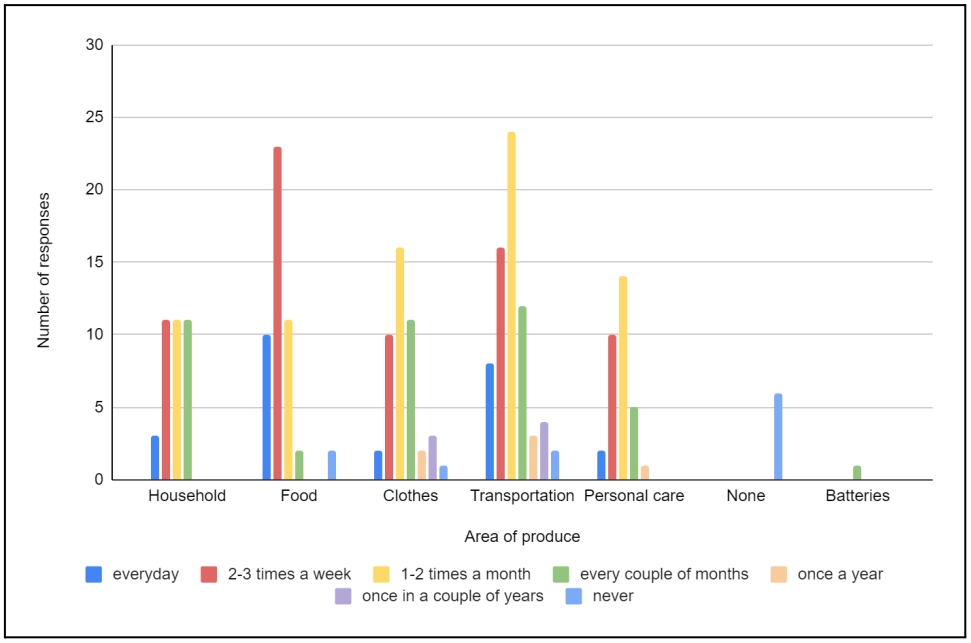

Figure 8. Distribution of frequency of purchases in various areas of produce
Source: author's calculations based on data shown in appendix 3 compiled by the author

Sequentially, questions 7 and 9 were focused on personal feelings regarding buying from environmentally-friendly companies, as well as beliefs on green alternatives and power to positively affect the environment. The results (see Table 4) are that the majority of people (58.1%) feel better when buying from eco-conscious brands, while 41.9% do not experience a change in their emotional state. No one has experienced a negative shift of emotions when purchasing "green" alternatives.

Table 4. Change of feelings when purchasing eco-friendly alternatives

Type of answer	Number of respondents	Percentage of the sample
It makes me feel better	61	58.1%
It doesn't change the way I feel	44	41.9%
It makes me feel worse	0	0%

Source: Created by the author based on Appendix 3.

Question 9 was formed as a likert-scale, in which respondents had to choose the degree of agreeableness with presented statements. The results are shown in Figure 9, and it can be distinguished that most people agree to some degree that so-called “green” products have better quality than non-green alternatives. Moreover, over half of the respondents see a point in purchasing eco-friendly products and services. By combining options “strongly agree” and “agree”, it becomes evident that the majority (77) of the respondents believe that it is possible to change lifestyle habits in order to improve the environment. The fourth statement didn’t have a blatant answer, since 49 people agreed that “green alternatives” are simply the result of marketing. However, 36 believed it to be not true and 20 people remained neutral. As we already know from Figure 3 – the second most popular answer to who has to be responsible for positive environmental changes is “Corporations”. As a result, it could have been expected that most of the participants (67 out of 105) would agree that most of the damage comes from corporations and products people buy do not change anything. Nevertheless, it is worth mentioning that almost a third (30) disagreed with that statement.

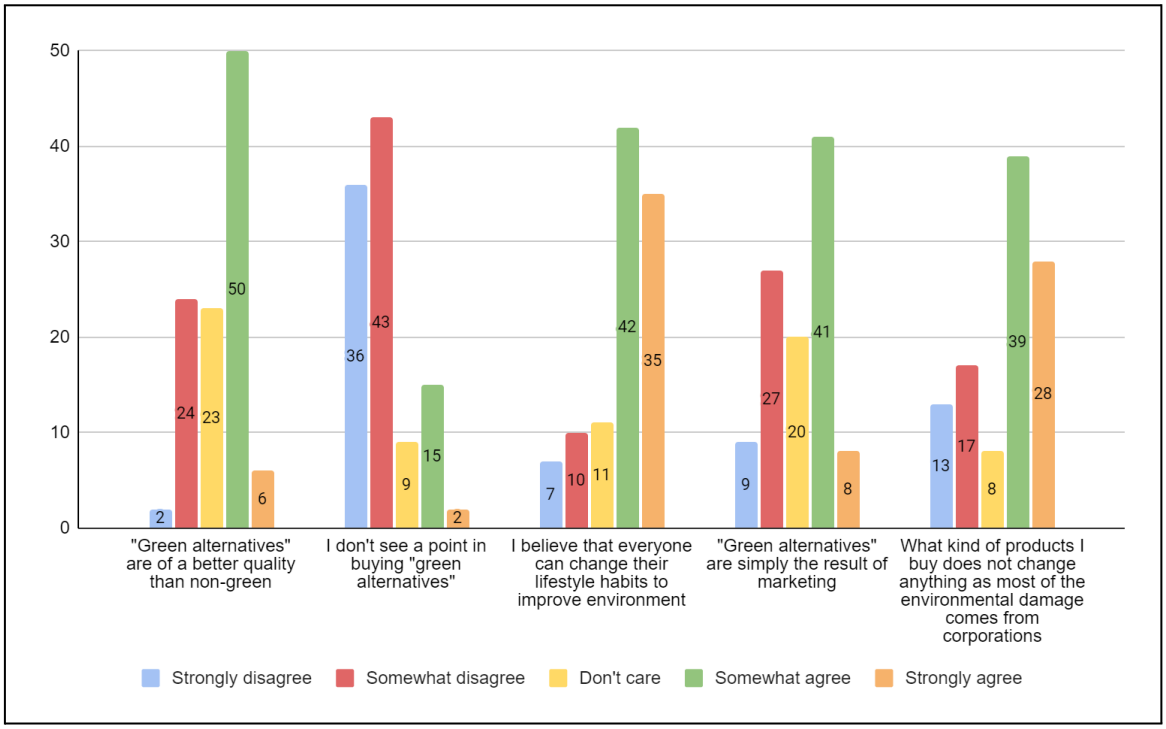

Figure 9. Level of agreeableness with provided statements

Source: author’s calculations on the basis of data shown in appendix 3 compiled by the author

As can be seen in Figure 10, 15 respondents were not ready to overpay for green alternatives. Meanwhile, 46 participants answered that they were willing to add up to 1-10% to the price of an environmentally-friendly version of a product. However, there were only half as many people (23) who said they would pay up to 11-20% more. Nevertheless, only 2 fewer respondents (21) were ready to spend 21-50% more on the eco-products. Nonetheless, not a single participant was ready to pay more than 50% extra for green alternatives.

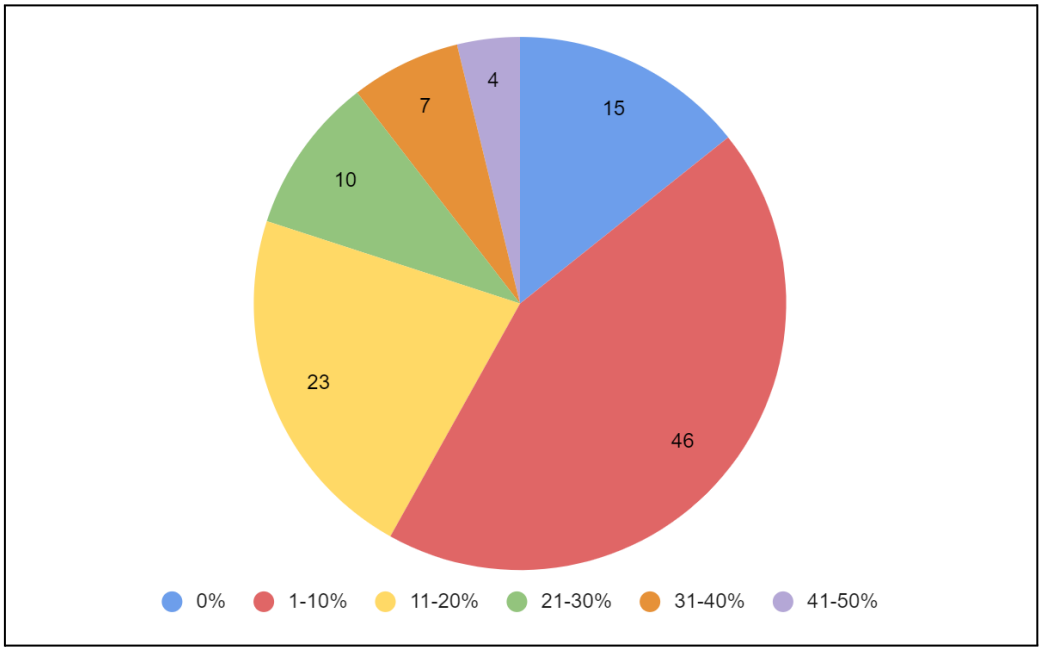

Figure 10. Percentage of added cost respondents were willing to pay for the eco-friendly alternative of a product

Source: Created by the author based on Appendix 3.

To sum up, it can be clearly seen that eco-friendliness of the product is not the main factor in the product evaluation for the majority of respondents (see Table 3). However, most participants answered that they consider a product's impact on the environment at least sometimes. Moreover, over a half of the people who took the questionnaire are environmentally conscious when shopping at least once a month. For companies that are creating eco-friendly services or products the author suggests making proofs or certificates of being “green” easily accessible, since it will help with the decision on whether to purchase it or not.

3.1.2 Greenwashing awareness

The research for this topic was presented by questions 8, as well as 10-16. At the beginning, it was necessary to collect data about how often people check if the information about the product

being “green” is true. For that question 8 was presented. As can be seen on Figure 11, 14.3% never check that information and 38.1% hardly ever do that. However, 36.2% of the participants said that they sometimes search for proof of the product being eco-friendly. Moreover, 11.4% do their due diligence almost every time. Nevertheless, not a single person chose “Always” as their answer.

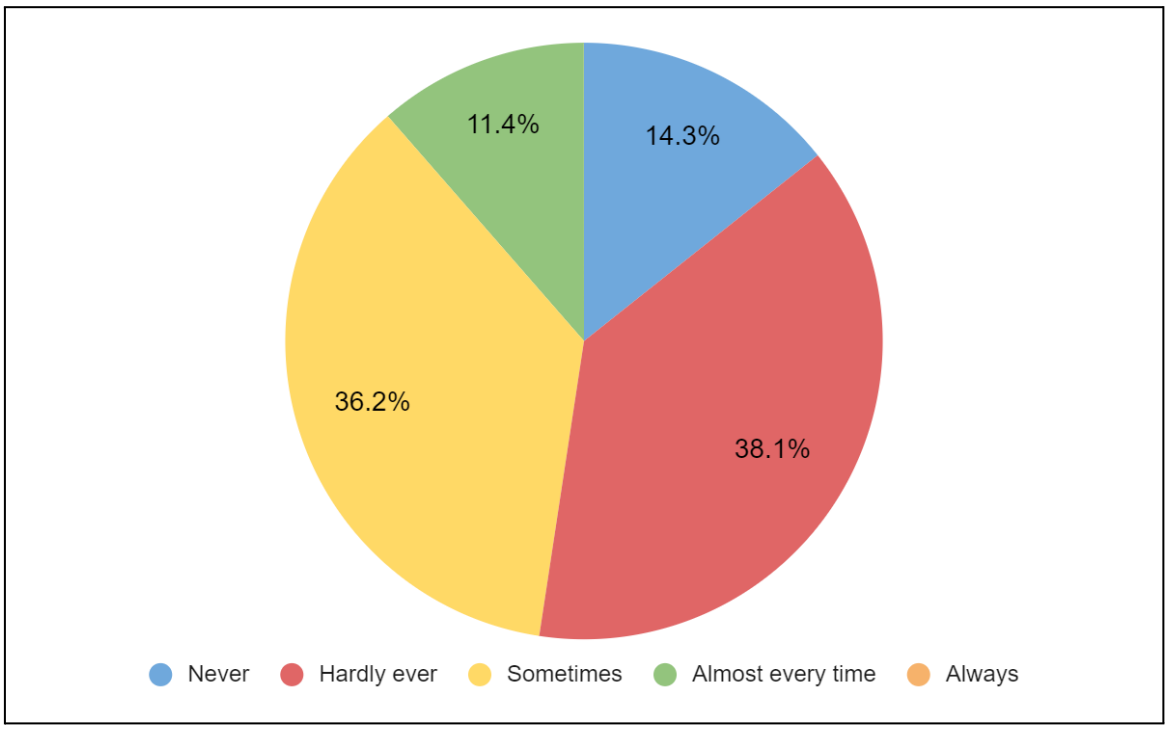

Figure 11. How often do people check whether eco-friendliness of the product is true
Source: Created by the author based on Appendix 3.

As could be anticipated, it was important to evaluate the current state of affairs regarding knowledge of the definition of greenwashing. Thus, a multiple-choice type of question with one correct and one misleading answer, as well as an option of admitting the lack of knowledge was presented. As a result, almost three-quarters of the sample (74.3%) choose the correct option of the definition of greenwashing, which is a type of marketing, where the products or services are presented as eco-friendly, while, in reality, they are not. However, 6.7% of respondents could not tell the difference between green marketing and greenwashing as they chose an incorrect answer. Continuously, 19% of participants admitted not knowing about greenwashing and what it means. To sum up, it can be calculated that 25.7% of the sample could not provide a correct definition, hence it can be perceived as them not being aware of the term.

Table 5. Definition of the term “Greenwashing”

Type of answer	Number of responses	Percentage of the sample (%)
Greenwashing is advertising eco-friendly products or services	7	6.7%
Greenwashing is advertising products or services as eco-friendly, when they are not	78	74.3%
I don't know what it is	20	19%

Source: Created by the author based on Appendix 3.

After respondents provided an answer, they were then shown a correct definition since it was necessary for them to clearly understand the concept of greenwashing in order to fill in the rest of the questionnaire. Further, participants were asked about whether they ever encountered greenwashing in real life. The results are shown on Figure 12. As can be seen, 24.8% of respondents were educated enough to recognize it when encountered, while 31.4% recognized it only in retrospect, when already presented with the information about such a phenomenon as greenwashing. Meaning that if they knew it before, they would also recognize it. So, there is a gap in the participant’s knowledge, which should be filled in. On the other hand, 40% of respondents checked the option of not being sure whether they have encountered greenwashing before or not. This can mean that either they could not link the new knowledge to the previous experience or they would simply not remember any advertisements that included messages regarding the environment. In contrast to the author's expectations, there were still people (3.8%), who were sure they had not encountered greenwashing before.

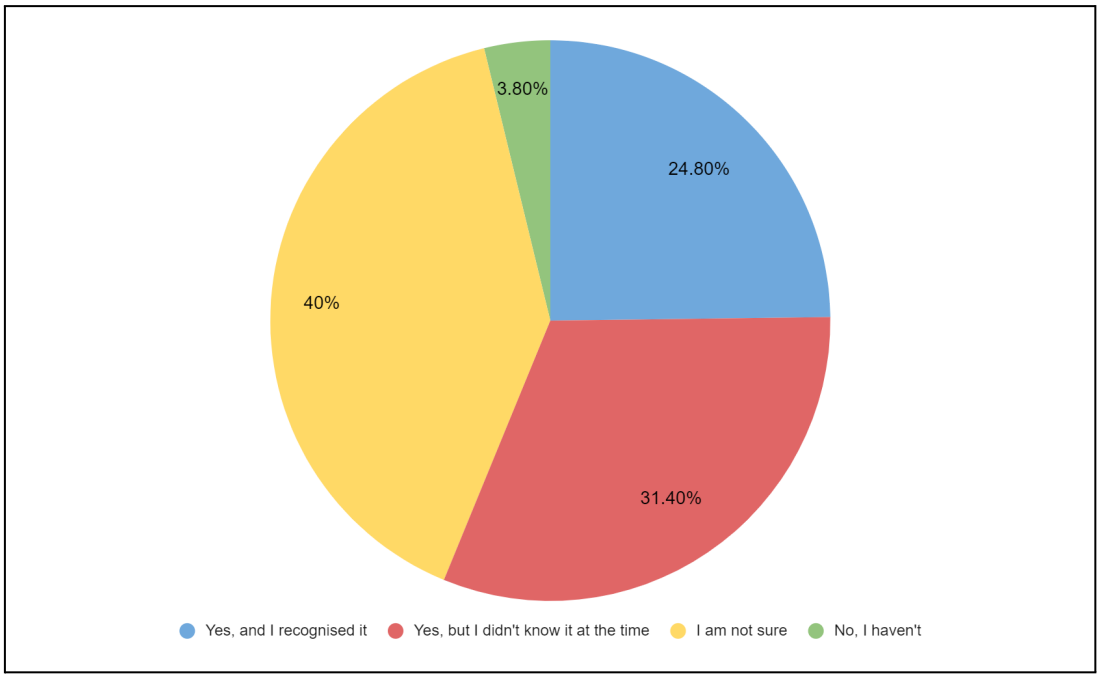

Figure 12. Exposure to greenwashing

Source: Created by the author based on Appendix 3.

Additionally, the next question was meant to discover whether respondents could recognize greenwashing practices 'in the field'. This question also served as a fact-check of the previous question. For this purpose, four pictures were carefully selected and presented to participants (see Appendix 1). The author's intention was to have one correct representation of greenwashing (Option 2), two examples of green marketing (Option 1 and Option 3), and one that was not trying to be perceived as eco-friendly at all, yet still depicting harm to the environment (Option 4). As a result, 44.8% of the sample were able to correctly recognize greenwashing in the presented advertisement (see Figure 13). However, when all incorrect choices are added up, it could be observed that more than half of the respondents (55.2%) made a mistake. Moreover, by summing up the results of choosing Picture 1 and Picture 3, it turned out that 38.1% of participants could not distinguish between green marketing and greenwashing, and took one for the other.

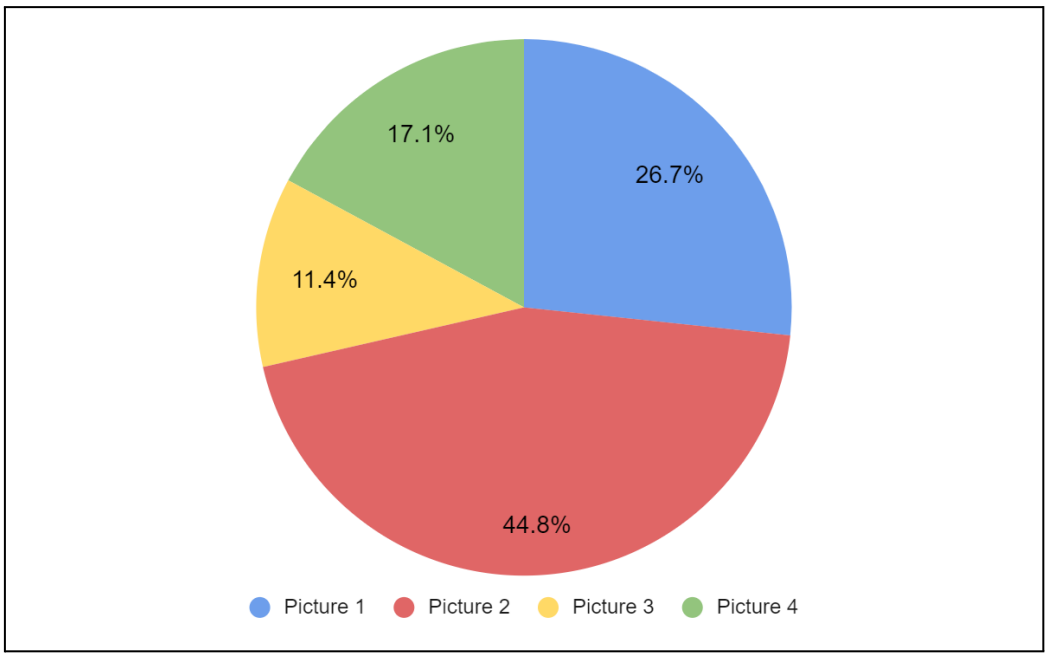

Figure 13. Which of the images has products that are using greenwashing
Source: Created by the author based on Appendix 3, pictures can be seen in Appendix 1.

As can be seen in Figure 14, out of all respondents who claimed to recognize greenwashing in the past, only 7 answered correctly when presented with pictures. On the other hand, the rest 19 respondents were misled by depicted green marketing in options 1 and 3, as well as by the illustration of harmful to environment activity in option 4. Consequently, out of the respondents, who realised they had encountered greenwashing before, but did not know about such a phenomenon at that time, 15 respondents picked the correct answer, which is more than twice as much as the previous sub-group. Continuously, 18 respondents picked incorrect answers, which is a smaller number of people than in the previous sub-group. Out of 42 participants, who were unsure whether they had ever encountered greenwashing – more than half (22) chose the right answer, and 20 were mistaken. Out of those 4 respondents, who answered that they never encountering greenwashing before, 3 were able to distinguish greenwashing from other pictures.

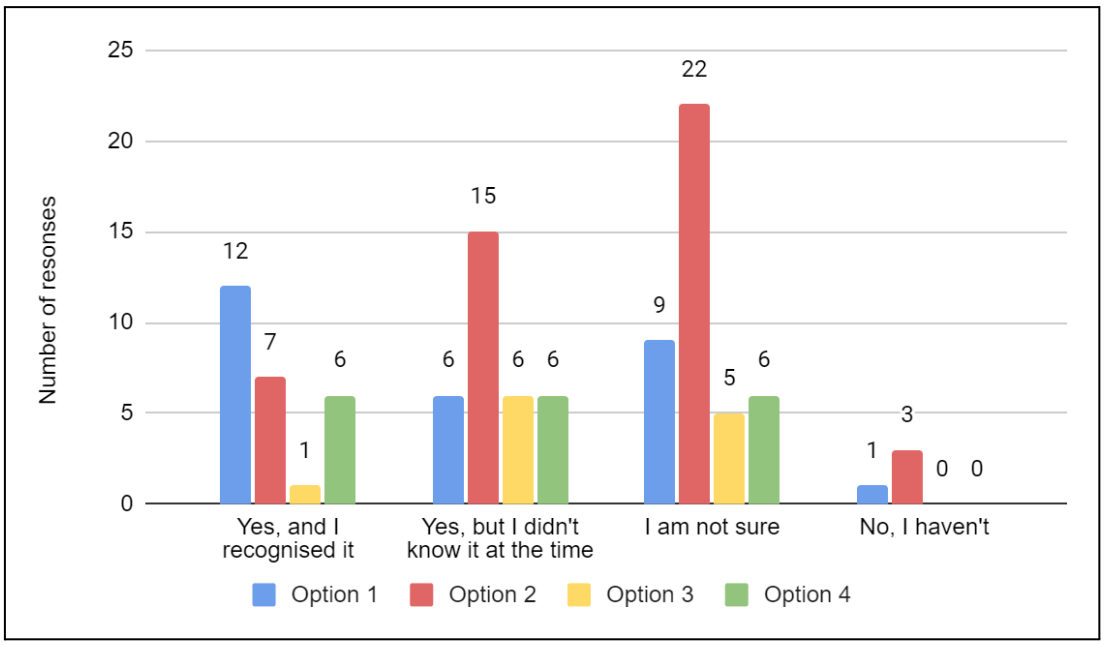

Figure 14. Number of responses that intersect in questions 11 and 12

Source: Created by the author based on Appendix 3, options of pictures can be seen in Appendix 1.

After examining the data from Figure 15, it is obvious that most of the correct responses relative to the number of answers (75%) were received from people, who said that they never dealt with greenwashing before. On the contrary, only 26.9% were right in a sub-group of people, who said that they both encountered and recognised greenwashing, which suggests that their perception of this phenomenon might not be accurate. Two other sub-groups had almost evenly split the answers. Respondents who didn't know about greenwashing, but did encounter it were right 45.5% of the time and 52.4% of participants who were not sure also chose the correct option.

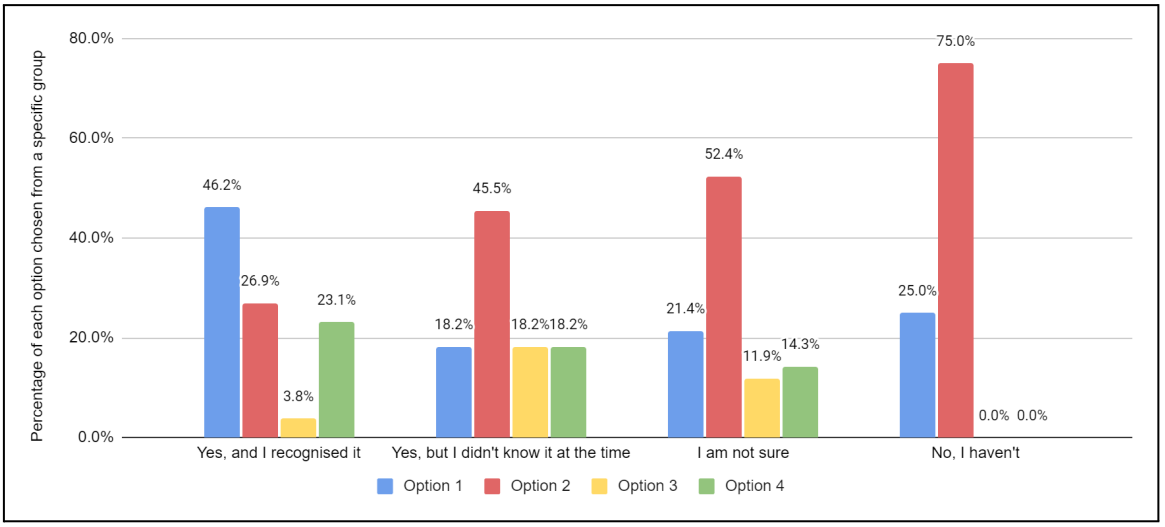

Figure 15. Percentage of responses that intersect in questions 11 and 12 relative to the number of received answers

Source: Created by the author based on Appendix 3

Next question was aimed at respondents taking a side in regards to whether greenwashing is a positive or a negative phenomenon in general. This question was a multiple-choice with a single correct answer, it also included a possibility to write a comment if there was a desire to respond in detail. Considering data from Figure 16, it can be concluded that most of the respondents (90.5%) acknowledge greenwashing as a negative phenomenon. On the other hand, 5.7% of participants believe that it is a positive concept and 3.8% chose “Other” since they could not pick between these two predetermined options. Delving into the data shown in Appendix 3, it can be seen that people who answered “Other” also added some comments. One of them was: “I don’t consider it any, but I think if greenwashing becomes more visible to people they might actually start taking interest in finding out if the product is green or not". Two people mentioned that they either did not know or still were not sure whether they understood what greenwashing actually is. One person replied that it can be either, but only with one condition – if it is good for the environment.

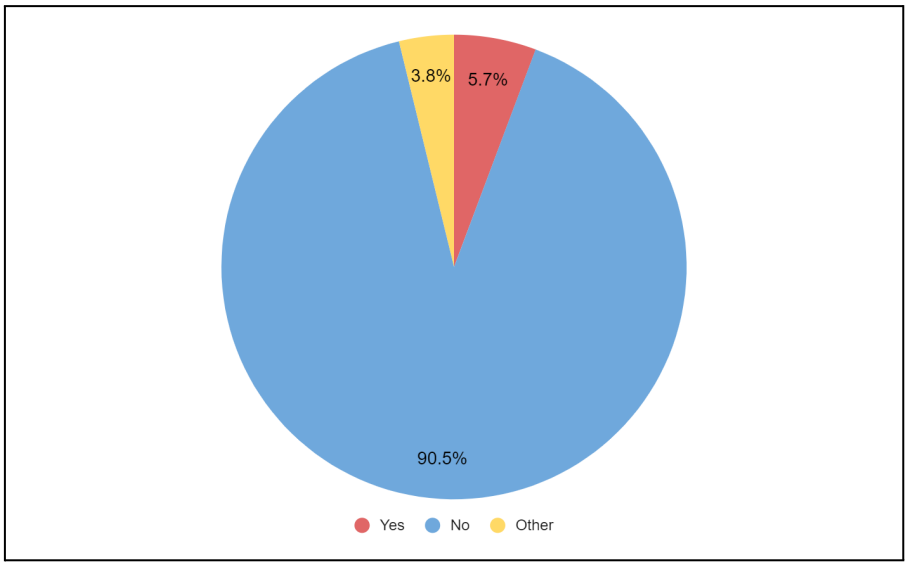

Figure 16. Opinions on whether "Greenwashing" is a positive phenomenon
Source: Created by the author based on Appendix 3

After that, there was a single select multiple choice type of question, which aimed at discovering whether respondents would still continue to purchase from the brand if they suspected that it is using greenwashing practices. The sample got divided almost in half (see Figure 17) as 48.6% of respondents refused to continue being customers of such a company, while 51.4% were still going to buy such company's products. The author asserts that this information could be useful to marketers that use greenwashing strategy to show that it is better not to continue using it, in order not to lose almost half of the clients. Hower, as can be seen from both Figure 15 and Figure 16, the majority of study participants believe greenwashing to be a negative phenomenon, yet for more than half of the sample, this is not enough to stop purchasing from those who use it.

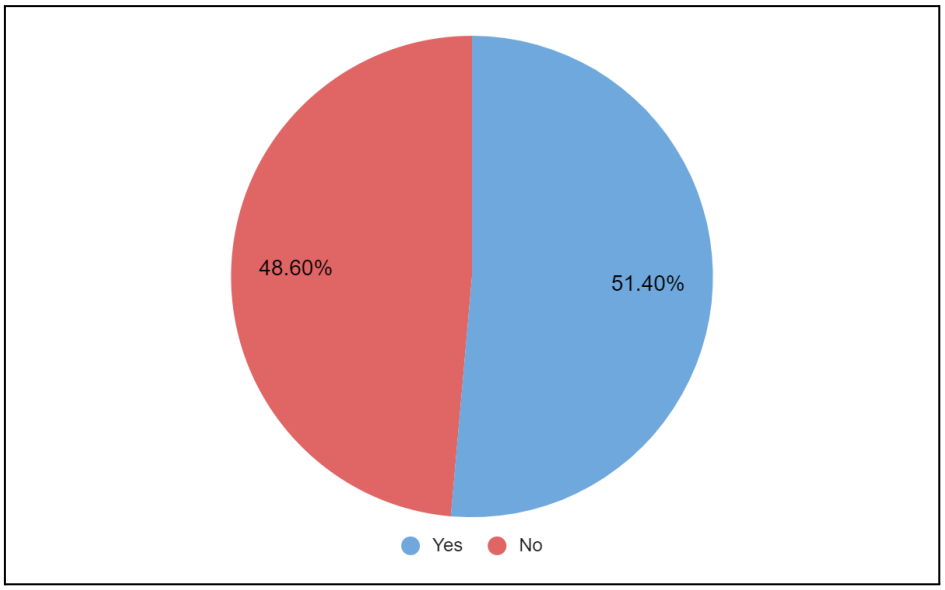

Figure 17. Would participants purchase from a brand if they knew it used greenwashing?
Source: Created by the author based on Appendix 3

In order to determine the possible reasoning for both decisions to continue being a consumer or not, questions 15 and 16 were posed. These were the multiple-choice type of questions, with several possible reasons presented as well as the ability to write their own answer in the "Other" field (see Appendix 1). The results are presented in Figure 18 and Figure 19. As can be seen in Figure 18, the most common reason for continuing purchasing from a greenwashing practices user is the product fitting the consumer's budget. The second most common reason for such a decision is the product's availability. Three participants were eager to provide comments regarding their answers. One person mentioned that the quality of the product is important to them, and if it is good, then they would not refuse buying it, even if the company uses greenwashing. Another answer stated that such a product could be the only option on the market. The last participant, of those who commented, stated that they do "...not really care, [because] the climate is doomed anyway".

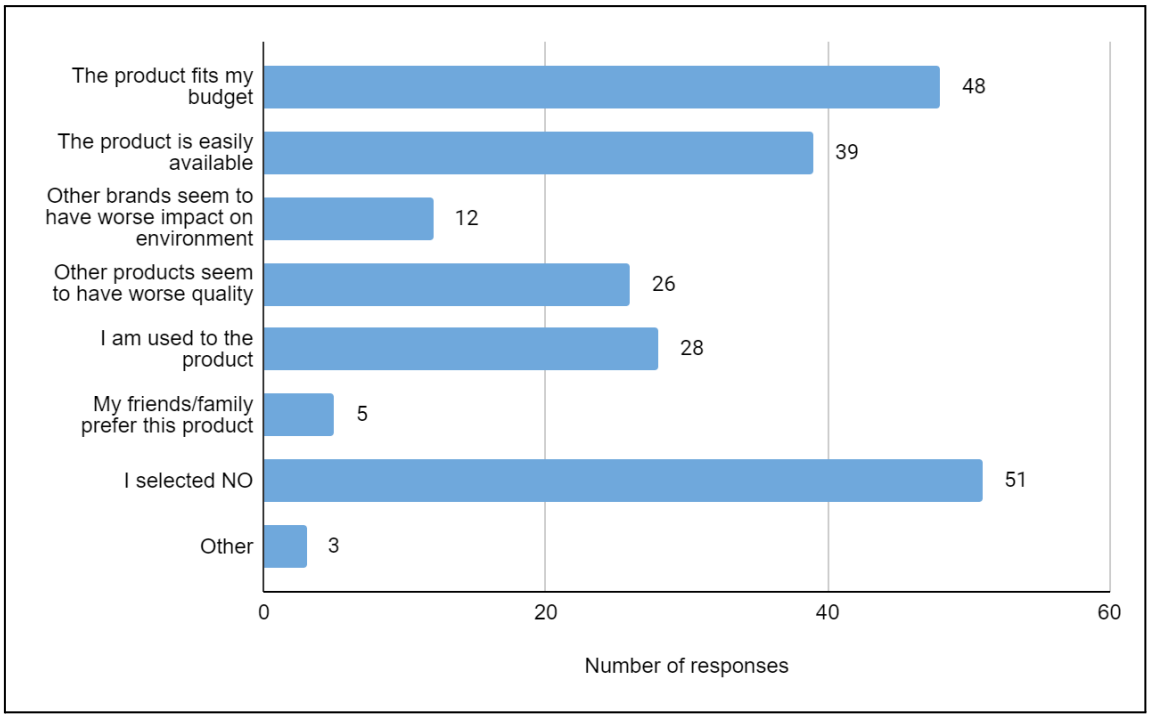

Figure 18. Reasons for purchasing from brands, that used greenwashing

Source: Created by the author based on Appendix 3

On the contrary, from those who decided to stop buying products from the company that participants might be inclined to think uses greenwashing practices, the most common reason for such decision was reluctance to support those who lie to their customers (see Figure 19). The second most common reason, although chosen by two times fewer people as the previous one, was the feeling of personal responsibility to stop using a product marketed with the use of greenwashing practices. None of the respondents chose "Other" and hence there were no comments provided to this question.

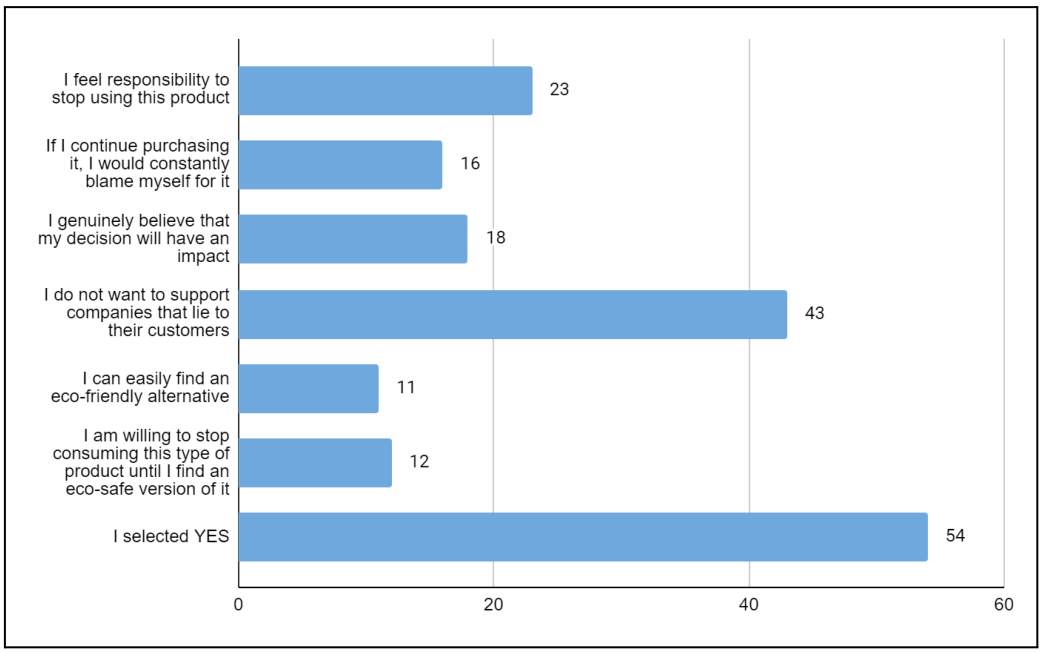

Figure 19. Reasons for not purchasing from brands, that used greenwashing

Source: Created by the author based on Appendix 3

When researched in more detail, it can be seen that out of those people who labelled greenwashing as a negative phenomenon, 51.6% were still willing to support it through purchasing from the companies that use it. (see Table 6) On the contrary, out of the small number of people who labelled greenwashing as a positive phenomenon, 50% would stop buying such products. Respondents that chose the “Other” option also split evenly in their decisions.

Table 6. Number of people who stop or continue buying from the company that used greenwashing relative to their beliefs on the greenwashing phenomenon.

Answer to the 14th question	Answer to the 13th question					
	Greenwashing is negative		Greenwashing is positive		Other	
	Number of responses	Percentage	Number of responses	Percentage	Number of responses	Percentage
Continue purchasing	49	51.6%	3	50%	2	50%
Stop purchasing	46	48.4%	3	50%	2	50%
Total	95	100%	6	100%	4	100%

Source: Created by the author based on Appendix 3.

To finalise, the data suggests that most of the participants were aware of the greenwashing phenomenon. Regardless, only less than a half of them could identify it. Another key finding was that once people discover that a company uses greenwashing - almost half of them would not continue purchasing.

3.2. Discussion

This chapter begins with the author demonstrating key findings and presenting them in a similar way to the previous chapter structure. Also, the study findings are looked at from theoretical and previous research perspectives. The chapter ends with suggestions for future research.

3.2.1 Findings regarding eco-driven behaviour

When asked about the presence of concern regarding the state of the environment, 73.3% of the sample presented with high concern (see Figure 2). Moreover, none of the participants stated to have any concern at all. Such data can be looked at from the theoretical point of view of Maslow's Hierarchy of Needs, as the concern about the environment could fall into either the "physiological needs" tier, "safety and security needs" or both. An environmental crisis could lead to a lack of food, water, or to the need to seek shelter, due to ocean level rising (Strauss et al., 2021). It could also lead to short and long-term health problems as well as social instability. Thus, by being located in one of the basic needs tiers, it is no wonder three quarters of the sample are concerned.

According to the acquired data, 59% of the sample included themselves as responsible actors for positively affecting the environment (see Figure 3). When looked at this from a theoretical perspective, such data may reflect the need for belonging, as well as self-esteem and self-actualization needs from Maslow's Hierarchy of Needs. Meaning that by feeling responsible to act, people connect with likeminded people, grow their own self-esteem, and fulfil their potential as human beings.

Continuously, when asked about taking into account environmental impact of purchased goods, 80 participants, which constitute 76.2% of the sample, mentioned to do it with various frequency, while 25 participants (23.8%) leaned towards not taking it into consideration (see Figure 6). When interpreted with Engel Kollat Blackwell's consumer behaviour model in mind, it becomes clear that most participants recognize the existence of discomfort and are willing to satisfy their need for eco-friendly produce.

When asked to range the qualities of the product in order from most to least important, the majority of respondents put overall quality, healthiness of the product, its organics and ecological

impact on the first four places in range (see Table 3). This corresponds to meeting personal safety and security needs. On the contrary, the status and fanciness of the product, which would fall into the 'self esteem' category of needs, was almost always put in the place of the least important quality.

The results of the question regarding eco-consciousness in various areas of life (see Figure 7) show that the majority of respondents (65.7%) behave ecologically in the area of transportation. The author assumes that the reason behind such results is that in big cities of Estonia such as Tallinn and Tartu, the infrastructure is developed enough for the use of electric cars, bicycles and electric scooters to become seamless and convenient. Also, the use of public transport, which includes buses run on biomethane (Hankewitz, 2020; Huttunen, 2022), is comfortable and affordable. However, to prove such hypotheses right or wrong, there is a need for further studies. Continuously, almost a third of the sample (30.5%) stated being ecologically conscious in the area of personal care products, which means that 69.5% are not. Such results could be true due to the lack of diversity in green alternatives to deodorants, body soaps, and cosmetics and their availability in the mass market price sector. Overall, 94.3% of the sample do behave ecologically in at least one area of life (there were just 5.7% of participants, who answered "None", see Figure 7), which means they address a desire to satisfy a certain need. Author assumes that this might correspond to a 'self-esteem' or 'self-actualization' tier of the Maslow's Hierarchy of Needs model. Meaning that people behave ecologically to have respect of their peers or to feel better about themselves as they contribute to saving the environment.

Based on the data presented in Figure 8, it becomes evident that it is stated by some people that they never purchase products from those areas of life, in which they consider themselves ecologically conscious. This is an interesting aspect that would be beneficial to research in further studies.

From the results of question 7 it is clearly seen that more than half (58.1%) of the respondents feel better after purchasing eco-friendly products. In the Engel Kollat Blackwell model this refers to the last stage – "outcome", where customers evaluate their satisfaction with the product. Since purchasing is a process that is being done over and over again – by changing how people feel about a product companies can gain more repeat customers (Ofir & Simonson, 2005).

When presented with the statement "green alternatives are simply a result of marketing", 49 people agreed with it, 36 disagreed, and 20 remained neutral (see Figure 9). These results indicate that greenwashing has already done some damage to the perception of green marketing. As almost half of the sample believes that products marketed as green alternatives do not have a basis for it and it is simply done to increase the company's profits.

Question 9 was made to see if there are any correlations between how people answer the statements. Using inferential statistics and specifically regression analysis several findings were found. At first, the author wanted to check if people's belief that everyone can change their lifestyle habits also affect their purchasing decision. In order to do this, the level of agreeableness with the statement "I believe that everyone can change their lifestyle habits to improve the environment" was chosen as an independent variable. Statements that green alternatives have better quality and the opposite to it saying that participants do not see a point in buying eco-friendly products were used as dependent variables in Model 1 and Model 2 respectively.

As can be seen in Table 7, the p-value of Model 1 is equal to 0.062, which is more than 0.05, hence making it statistically insignificant, as well as making R^2 and other coefficients unreliable. However, in Model 2 we can see that the significance level (p-value) is 0.003, which makes the coefficients dependable. In this case the value of an R, which is 0.288 is the same as the standardised Beta since this model had only one independent variable. As a result, the data shows that R^2 is equal to 0.083 which would mean that belief that everyone can change their habits to make the environment better can account for 8.3% of the effect on whether people think green alternatives are of a better quality.

Based on the data from Figure 9 the author wanted to see if people who believe that "green alternatives" were simply a result of marketing would also not see a point in buying them. For that regression analysis of Model 3 was generated. Based on the data from Table 7 it can be seen that what people believe in also affects their decisions. Specifically, they are influenced by 20.4%, since R^2 is equal to 0.204 and the p-value is <0.001, which makes this statement reliable. As in previous models, due to having one independent variable Standardised Beta and R had the same value of 0.452.

Table 7. Results of regression analysis of Models 1, 2, 3

	p-value	R	R^2	Standardised coefficients Beta
Model 1	0.062	0.182	0.033	0.182
Model 2	0.003	0.288	0.083	0.288
Model 3	<0.001	0.452	0.204	0.452

Source: Created by the author based on Appendix 4.

All of these findings suggest that companies that are producing green alternatives necessarily have to convey information about their eco-friendliness to people. According to the Engel Kollat Blackwell model, which was described in the theoretical part of this research, it should be done during the second step of the customer journey, which is information searching.

When asked about the acceptable difference in price for eco-friendly products compared to non-eco-friendly, 15 respondents were not ready to pay extra, 46 respondents chose to pay 1-10% more, 44 were divided between several options of adding from 11% to up to 50% to the price, while no one was eager to pay more than 50% of the original price (see Figure 10). Such results indicate a potential challenge for businesses selling green alternatives, as they quite often require significantly more costs than non-green products (Gerhardt, 2020).

3.2.2 Findings regarding greenwashing awareness

Another interesting find could be seen in Figure 11, where only 11.4% of the participants said that they check whether a product is actually eco-friendly almost every time. This suggests that another 88.6% could become victims of greenwashing without actually knowing it. None of the respondents said they always investigate if the companies' claims are true, which could be interpreted as participants being honest, since it is quite rare to do something like this every single time. Author believes that there should be more strict regulations on use of words that could mislead customers into thinking that the product is eco-friendly. As described in the theoretical part of this thesis – an increasing number of companies tend to use such legal loopholes to attract more customers. That is why it is necessary to teach everyone how to spot when corporations use such techniques.

When asked to identify the definition of greenwashing, 25.7% of the respondents did not know it or chose the wrong (see Table 5). This data highlights the need for further enlightenment of the masses on such a pressing issue and further confirms the relevance of this research.

When presented with images (Appendix 1), and faced to choose a picture portraying greenwashing, 38.1% of respondents were not able to differentiate between greenwashing and green marketing (Figure 13). This leads to the inference that when people get educated on the existence of such a phenomenon as greenwashing, they might still confuse products. This could be potentially alarming to companies producing green alternatives. Thus, there is a need to educate the public on what are the features of greenwashing and how to distinguish between the lie and truth in marketing.

According to the data (see Figure 12), almost 4% of the sample actually never encountered greenwashing. However, due to having the least amount of responses these answers might need further research with more data gathered in order to validate this. For this purpose, both quantitative and qualitative approaches would be beneficial. While a quantitative research would provide a possibility to study this aspect on a bigger sample, a qualitative – would allow to gather insights of specific reasons why people claim to never encounter it whereas greenwashing is such a widespread practice, which they also have successfully identified among presented images (Figure 14). Thus, further researchers could implement qualitative approach in their studies.

The most common reasons for continuing to purchase from a greenwashing using company are products' price and availability (see Figure 18). This supports previous data collected by Simon-Kucher & Partners (Business Wire, 2021) about the price being one of the most dominant variables affecting purchasing behaviour. This might suggest that even if a person would like to consume eco-friendly products, they would not do so if for this to happen, they would have to reevaluate their own limited budget and cut expenses somewhere in order to be able to afford (a more expensive) ecological alternative.

CONCLUSION

The research problem the author addressed in this paper was the need to understand the current state of pro-environmental behaviour and greenwashing awareness among students in Estonia.

As a result of this study the author could conclude that greenwashing awareness level among students is high, with almost 75% knowing what it is. However, there still were some difficulties in identifying it in products and advertisements, since less than half were able to classify it correctly.

Another key aspect discussed was that about 75% of the students consider their environmental impact at least from time to time. In addition, more than half buy products, while being environmentally conscious, at least once a month. Author expected that the reason behind making eco-friendly purchases would mostly be defined by the needs of self-esteem. On the contrary, the study showed it to be defined by all levels of needs.

One more essential point that has been studied was the level of importance of the product being eco-friendly. Most people put quality, healthiness and organics above it. However, design and status played a smaller role in that decision, making perceived ecology rank right in the middle on a scale of importance to the participants. One of the underlying reasons behind this might be the popular belief that “green” alternatives are only the result of marketing. For that regression analysis was performed and it showed that it affects this only to a small degree. As a result, due to the study being quantitative it is quite difficult to understand the logic behind such answers.

This study concludes that students in Estonia are aware of greenwashing, believe that eco-friendliness of a product is quite important and due to that most of them purchase “green alternatives” one or more times a month.

Suggestions and proposals:

- Further research could be conducted with a broader sample to get an overall picture, as well as use qualitative method to collect and analyse underlying reasoning of people’s beliefs

- Marketers of companies that produce eco-friendly products or services have to ensure information about being “green” is clearly displayed at every stage of the customer’s journey.

- In the future research it is beneficial to study if participants that do not engage in purchasing activities of some sort, would still be considered ecologically conscious. On the contrary, if people see themselves as ecologically conscious in a certain area, of which they are not consumers, it could be important to find whether this affects their behaviour in areas, in which they are not mindful of their eco-friendliness.

- Marketers that work for companies that use greenwashing are advised to stop doing it, not only due to it being unethical, but also since once customers find out about it – over half of them would not continue purchasing, which will supposedly lead to decline in revenue.

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APPENDICES

Appendix 1. Questionnaire structure

Eco-driven behaviour and greenwashing awareness in Estonia

This questionnaire is a part of research on the topic of greenwashing awareness of students in Estonia. Your answers are anonymous and will be used only for the thesis paper made by TalTech student Nikita Shevchenko. If you have any questions, you can contact me at nishev@ttu.ee .

The questionnaire consists of 20 questions and will only take up to 5 minutes of your time. Please, answer honestly, as it is the key to understanding the real picture.

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* Required

1. How concerned are you about the future state of the environment? *

	1	2	3	4	5	
Not at all	○	○	○	○	○	Very concerned

Appendix 1 continued

2. Who do you think has to act in order to positively affect the state of environment? *

You may chose multiple options.

- [ ] International Organizations
- [ ] Governments
- [ ] Local Governments
- [ ] Corporations
- [ ] Small Businesses
- [ ] NGOs
- [ ] Consumers
- [ ] Myself

Appendix 1 continued

3. When making purchases, do you consider environmental impact of the products you buy? *

- ◯ Yes, always
- ◯ Yes, most of the time
- ◯ Sometimes
- ◯ No, almost never
- ◯ No, never

4. Please, range the qualities of the product, where the most important quality for you would be under number one, and the least important - under number 6. *

	Design of the packaging	Ecology of the product	How organic and/or natural the product is	Quality of the product	How healthy for the body the product is	Status of the product (how fancy/wealthy it is)
1	◯	◯	◯	◯	◯	◯
2	◯	◯	◯	◯	◯	◯
3	◯	◯	◯	◯	◯	◯
4	◯	◯	◯	◯	◯	◯
5	◯	◯	◯	◯	◯	◯
6	◯	◯	◯	◯	◯	◯

Appendix 1 continued

5. In which areas of produce do you consider yourself to be ecologically conscious? *

- [ ] Household items
- [ ] Food and beverages
- [ ] Clothes and accessories
- [ ] Transportation
- [ ] Personal care
- [ ] None
- [ ] Other: _____

6. How often do you buy products from the chosen area/s of life? *
* if you chose "None", answer "Never"

- ○ everyday
- ○ 2-3 times a week
- ○ 1-2 times a month
- ○ every couple of months
- ○ once a year
- ○ once in a couple of years
- ○ never

7. How do you feel when buying from the eco-conscious companies? *

- ○ It makes me feel better
- ○ It doesn't change the way I feel
- ○ It makes me feel worse

Appendix 1 continued

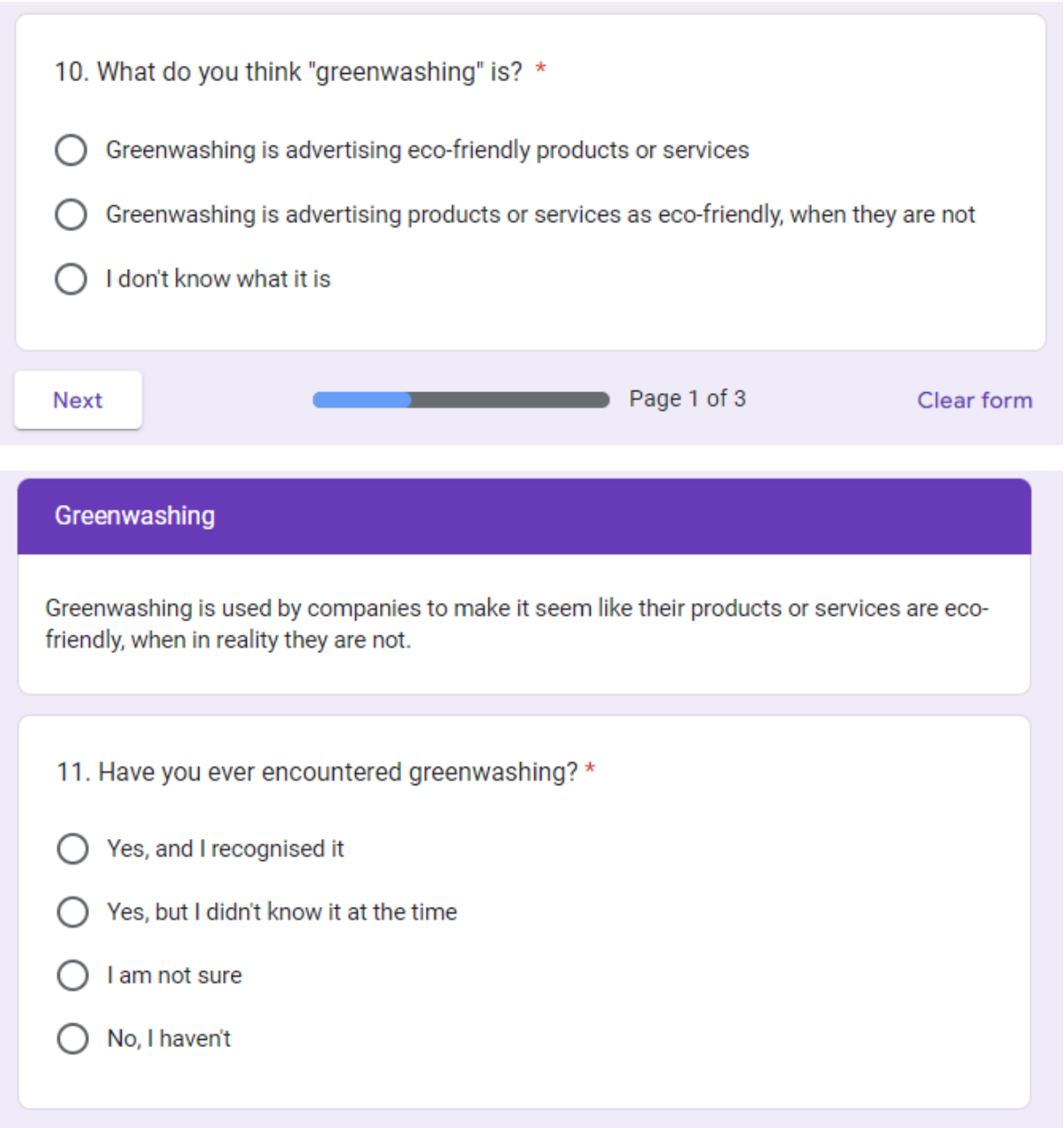
8. How often do you check if the information about the product being eco-friendly * is true?

- ○ Never
- ○ Hardly ever
- ○ Sometimes
- ○ Almost every time
- ○ Always

9. Please, choose the extent to which you agree or disagree with the statement *

	Strongly disagree	Somewhat disagree	Don't care	Somewhat agree	Strongly agree
"Green alternatives" are of a better quality than non-green	○	○	○	○	○
I don't see a point in buying "green alternatives"	○	○	○	○	○
I believe that everyone can change their lifestyle habits to improve environment	○	○	○	○	○
"Green alternatives" are simply the result of marketing	○	○	○	○	○
What kind of products I buy does not change anything as most of the environmental damage comes from corporations	○	○	○	○	○

Appendix 1 continued



10. What do you think "greenwashing" is? *

- ○ Greenwashing is advertising eco-friendly products or services
- ○ Greenwashing is advertising products or services as eco-friendly, when they are not
- ○ I don't know what it is

Next Page 1 of 3 Clear form

Greenwashing

Greenwashing is used by companies to make it seem like their products or services are eco-friendly, when in reality they are not.

11. Have you ever encountered greenwashing? *

- ○ Yes, and I recognised it
- ○ Yes, but I didn't know it at the time
- ○ I am not sure
- ○ No, I haven't

Appendix 1 continued

12. Which of the following images do you think uses greenwashing? *

Option 1

Option 2

Option 3

Option 4

Appendix 1 continued

13. Would you consider greenwashing as a positive phenomenon? *

- ○ Yes
- ○ No
- ○ Other: _____

14. Would you continue to purchase a product from a brand, if you suspected the company using greenwashing practices? *

- ○ Yes
- ○ No

15. If you selected YES, please, pick the reason/s why. *

You can select multiple options.

- ☐ The product fits my budget
- ☐ The product is easily available
- ☐ Other brands seem to have worse impact on environment
- ☐ Other products seem to have worse quality
- ☐ I am used to the product
- ☐ My friends/family prefer this product
- ☐ I selected NO
- ☐ Other: _____

Appendix 1 continued

16. If you selected NO, please, pick the reason/s why. *

You can select multiple options.

- [ ] I feel responsibility to stop using this product
- [ ] If I continue purchasing it, I would constantly blame myself for it
- [ ] I genuinely believe that my decision will have an impact
- [ ] I do not want to support companies that lie to their customers
- [ ] I can easily find an eco-friendly alternative
- [ ] I am willing to stop consuming this type of product until I find an eco-safe version of it
- [ ] I selected YES
- [ ] Other: _____

17. How much more would you be willing to pay for the eco-friendly alternative of a product? *

* this is a % of the original price of a non-eco-friendly product that would be added to the cost

- ○ 0%
- ○ 1-10%
- ○ 11-20%
- ○ 21-30%
- ○ 31-40%
- ○ 41-50%
- ○ 51-60%
- ○ 61-70%
- ○ 71-80%
- ○ 81-90%
- ○ 91-100%
- ○ 100+%

Back Next Page 2 of 3 Clear form

Appendix 1 continued

Socio-demographic questions

18. What is your age? *

- ◯ less than 18
- ◯ 18-21
- ◯ 22-25
- ◯ 26-30
- ◯ 31+

19. What is your gender? *

- ◯ Male
- ◯ Female
- ◯ Other/I rather not say

20. What is your university? *

- ◯ TalTech
- ◯ Tallinn University
- ◯ University of Tartu
- ◯ Other: _____

Appendix 1 continued

Research Questions	Questionnaire Questions
RQ1: What is the level of greenwashing awareness among students in Estonia?	Q8. How often do you check if the information about the product being eco-friendly is true?
	Q10. What do you think "greenwashing" is?
	Q11. Have you ever encountered greenwashing?
	Q12. Which of the following images do you think uses greenwashing?
	Q13. Would you consider greenwashing as a positive phenomenon?
	Q14. Would you continue to purchase a product from a brand, if you suspected the company using greenwashing practices?
	Q15. If you selected YES, please, pick the reason/s why. You can select multiple options.
	Q16. If you selected NO, please, pick the reason/s why. You can select multiple options.
RQ2: With what frequency do students make eco-driven decisions?	Q2. Who do you think has to act in order to positively affect the state of environment? You may choose multiple options.
	Q5. In which areas of produce do you consider yourself to be ecologically conscious?
	Q6. How often do you buy products from the chosen area/s of life?
	7Q. How do you feel when buying from the eco-conscious companies?
	Q9. Please, choose the extent to which you agree or disagree with the statement.
RQ3: What is the rank of importance of the product's perceived ecology to students?	Q1. How concerned are you about the future state of the environment?
	Q3. When making purchases, do you consider environmental impact of the products you buy?
	Q4. Please, range the qualities of the product, where the most important quality for you would be under number one, and the least important - under number 6.
	Q9. Please, choose the extent to which you agree or disagree with the statement
	Q17. How much more would you be willing to pay for the eco-friendly alternative of a product?

Appendix 2. List of contacts

Programs of TalTech

Study program	Name of the contact	E-mail
Technology of Wood, Plastics, and Textiles (MSc)	Jaan Kers	jaan.kers@taltech.ee
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Appendix 2 continued

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Appendix 3. Data collected from the questionnaire

1. How concerned are you about the future state of the environment?

Type of response	Number of responses	Percentage of sample (%)
1	0	0%
2	4	3.8%
3	24	22.9%
4	41	39%
5	36	34.3%

2. Who do you think has to act in order to positively affect the environment? You may choose multiple options.

Type of response	Number of responses	Percentage of sample (%)
International Organizations	74	70.5%
Governments	99	94.3%
Local Governments	70	66.7%
Corporations	81	77.1%
Small Businesses	38	36.2%
NGOs	37	35.2%
Consumers	70	66.7%
Myself	62	59%

Appendix 3 continued

3. When making purchases, do you consider the environmental impact of products you buy?

Type of response	Number of responses	Percentage of sample (%)
Yes, always	3	2.9%
Yes, most of the time	25	23.8%
Sometimes	52	49.5%
No, almost never	22	21%
No, never	3	2.9%

4. Please, range the qualities of the product, where the most important quality for you would be under number one, and the least important - under number 6.

Category	No 1	No 2	No 3	No 4	No 5	No 6
Design of the packaging	8	14	9	16	46	13
Ecology of the product	3	16	28	39	13	3
How organic and/or natural product is	4	14	36	22	18	9
Quality of the product	67	19	3	4	5	10
How healthy for the body the product is	15	38	16	15	12	9
Status of the product (how fancy/wealthy it is)	0	4	13	9	11	61

Appendix 3 continued

5. In which areas of produce do you consider yourself to be ecologically conscious?

Type of response	Number of responses	Percentage of sample (%)
Household items	36	34.3%
Food and beverages	48	45.7%
Clothes and accessories	45	42.9%
Transportation	69	65.7%
Personal care	32	30.5%
None	6	5.7%
Other	1 (“batteries”)	1%

6. How often do you buy products from the chosen ares/s of life?

Type of response	Number of responses	Percentage of sample (%)
Everyday	12	11.4%
2-3 times a week	25	23.8%
1-2 times a month	32	30.5%
Every couple of months	19	18.1%
Once a year	3	2.9%
Once in a couple of years	4	3.8%
Never	10	9.5%

Appendix 3 continued

6.1 Number of responses that intersect in questions 5 and 6.

Answers to the 5th question	Answers to the 6th question						
	Everyday	2-3 times a week	1-2 times a month	Every couple of months	Once a year	Once in a couple of years	Never
Household	3	11	11	11	0	0	0
Food	10	23	11	2	0	0	2
Clothes	2	10	16	11	2	3	1
Transportation	8	16	24	12	3	4	2
Personal care	2	10	14	5	1	0	0
None	0	0	0	0	0	0	6
Batteries	0	0	0	1	0	0	0

7. How do you feel when buying from eco-conscious companies?

Type of answer	Number of responses	Percentage of sample (%)
It makes me feel better	61	58.1%
It doesn’t change the way I feel	44	41.9%
It makes me feel worse	0	0%

Appendix 3 continued

8. How often do you check if the information about the product being eco friendly is true?

Type of response	Number of responses	Percentage of sample (%)
Never	15	14.3%
Hardly ever	40	38.1%
Sometimes	38	36.2%
Almost every time	12	11.4%
Always	0	0%

9. Please, choose the extent to which you agree or disagree with the statement

Statement	Strongly disagree	Somewhat disagree	Don't care	Somewhat agree	Strongly agree
"Green alternatives" are of a better quality than non-green	2	24	23	50	6
I don't see a point in buying "green alternatives"	36	43	9	15	2
I believe that everyone can change their lifestyle habits to improve environment	7	10	11	42	35

Appendix 3 continued

Statement	Strongly disagree	Somewhat disagree	Don't care	Somewhat agree	Strongly agree
"Green alternatives" are simply the result of marketing	9	27	20	41	8
What kind of products I buy does not change anything as most of the environmental damage comes from corporations	13	17	8	39	28

10. What do you think "greenwashing" is?

Type of answer	Number of responses	Percentage of sample (%)
Greenwashing is advertising eco-friendly products or services	7	6.7%
Greenwashing is advertising products or services as eco-friendly, when in reality they are not	78	74.3%
I don't know what it is	20	19%

Appendix 3 continued

11. Have you ever encountered greenwashing?

Type of answer	Number of responses	Percentage of sample (%)
Yes, and I recognised it	26	24.8%
Yes, but I didn't know it at the time	33	31.4%
I am not sure	42	40%
No, I haven't	4	3.8%

12. Which of the following images do you think uses greenwashing?

Type of answer	Number of responses	Percentage of sample (%)
Option 1	28	26.7%
Option 2	47	44.8%
Option 3	12	11.4%
Option 4	18	17.1%

12.1 Number of responses that intersect in questions 11 and 12.

Answers to the 11th question	Answers to the 12th question			
	Option 1	Option 2	Option 3	Option 4
Yes, and I recognised it	12	7	1	6

Appendix 3 continued

Answers to the 11th question	Answers to the 12th question			
	Option 1	Option 2	Option 3	Option 4
Yes, but I didn't know it at the time	6	15	6	6
I am not sure	9	22	5	6
No, I haven't	1	3	0	0

13. Would you consider greenwashing as a positive phenomenon?

Type of answer	Number of responses	Percentage of sample (%)
Yes	6	5.7%
No	95	90.5%
Don’t know (Other)	1	0.95%
If it’s good for the environment (Other)	1	0.95%
I’m not quite sure what is greenwashing (Other)	1	0.95%
I don’t consider it any, but I think if greenwashing becomes more visible to people they might actually start taking interest in finding out if the product is green or not. (Other)	1	0.95%

Appendix 3 continued

14. Would you continue to purchase a product from a brand, if you suspected the company using greenwashing practices?

Type of answer	Number of responses	Percentage of sample (%)
Yes	54	51.4%
No	51	48.6%

14.1 Table 5. Number of people who stop or continue buying from the company that used greenwashing relative to their beliefs on the greenwashing phenomenon.

Answer to the 14th question	Answer to the 13th question					
	Greenwashing is negative		Greenwashing is positive		Other	
	Number of responses	Percentage	Number of responses	Percentage	Number of responses	Percentage
Continue purchasing	49	51.6%	3	50%	2	50%
Stop purchasing	46	48.4%	3	50%	2	50%
Total	95	100%	6	100%	4	100%

Appendix 3 continued

15. If you selected YES, please pick the reason/s why. You can select multiple options.

Type of answer	Number of responses	Percentage of sample (%)
The product fits my budget	48	45.7%
The product is easily available	39	37.1%
Other brands seem to have worse impact on environment	12	11.4%
Other products seem to have worse quality	26	24.8%
I am used to the product	28	26.7%
My friends/family prefer this product	5	4.8%
I selected NO	51	48.6%
If the quality is good, i'll stick to it (Other)	1	0.95%
Product could be the only option. (Other)	1	0.95%
I don’t really care the climate is doomed anyway, because governments don’t limit corporate emissions quickly enough. (Other)	1	0.95%

Appendix 3 continued

16. If you selected NO, please, pick the reason/s why. You can select multiple options.

Type of answer	Number of responses	Percentage of sample (%)
I feel responsibility to stop using this product	23	21.9%
If I continue purchasing it, I would constantly blame myself for it	16	15.2%
I genuinely believe that my decision will have an impact	18	17.1%
I do not want to support companies that lie to their customers	43	41%
I can easily find an eco-friendly alternative	11	10.5%
I am willing to stop consuming this type of product until I find an eco-safe version of it	12	11.4%
I selected YES	54	51.4%
Other	0	0%

Appendix 3 continued

17. How much more would you be willing to pay for the eco-friendly alternative of a product?

Type of answer	Number of responses	Percentage of sample (%)
0%	15	14.3%
1-10%	46	43.8%
11-20%	23	21.9%
21-30%	10	9.5%
31-40%	7	6.7%
41-50%	4	3.8%
51-60%	0	0%
61-70%	0	0%
71-80%	0	0%
81-90%	0	0%
91-100%	0	0%
100+%	0	0%

Appendix 3 continued

18. What is your age?

Type of answer	Number of responses	Percentage of sample (%)
less than 18	0	0%
18-21	40	38.1%
22-25	46	43.8%
26-30	19	18.1%
31+	0	0%

19. What is your gender?

Type of answer	Number of responses	Percentage of sample (%)
Male	52	49.5%
Female	47	44.8%
Other/I rather not say	6	5.7%

20. What is your university?

Type of answer	Number of responses	Percentage of sample (%)
TalTech	41	39%
Tallinn University	42	40%
University of Tartu	22	21%
Other	0	0%

Appendix 4. Regression analysis data

Model 1. Impact of thinking that everyone can change their lifestyle to improve the environment on not seeing a point in purchasing "green alternatives".

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.182[a]	.033	.024	.623

a. Predictors: (Constant), I believe that everyone can change their lifestyle habits to improve environment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.097	.139		7.883	<.001
	I believe that everyone can change their lifestyle habits to improve environment	.172	.091	.182	1.883	.062

a. Dependent Variable: I don't see a point in buying "green alternatives

Source: Made by the author using SPSS software.

Appendix 4 continued

Model 2. Impact of belief that everyone can change their lifestyle to improve the environment on thinking that "green alternatives" are of a better quality.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.288[a]	.083	.074	.782

a. Predictors: (Constant), I believe that everyone can change their lifestyle habits to improve environment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.206	.175		6.904	<.001
	I believe that everyone can change their lifestyle habits to improve environment	.350	.115	.288	3.049	.003

a. Dependent Variable: "Green alternatives" are of a better quality than non-green

Source: Made by the author using SPSS software.

Appendix 4 continued

Model 3. Impact of thinking that "green alternatives" are simply a result of marketing on not seeing a point in buying them.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452[a]	.204	.197	.443

a. Predictors: (Constant), "Green alternatives" are simply the result of marketing

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.421	.107		13.295	<.001
	"Green alternatives" are simply the result of marketing	.292	.057	.452	5.144	<.001

a. Dependent Variable: I don't see a point in buying "green alternatives"

Source: Made by the author using SPSS software.

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