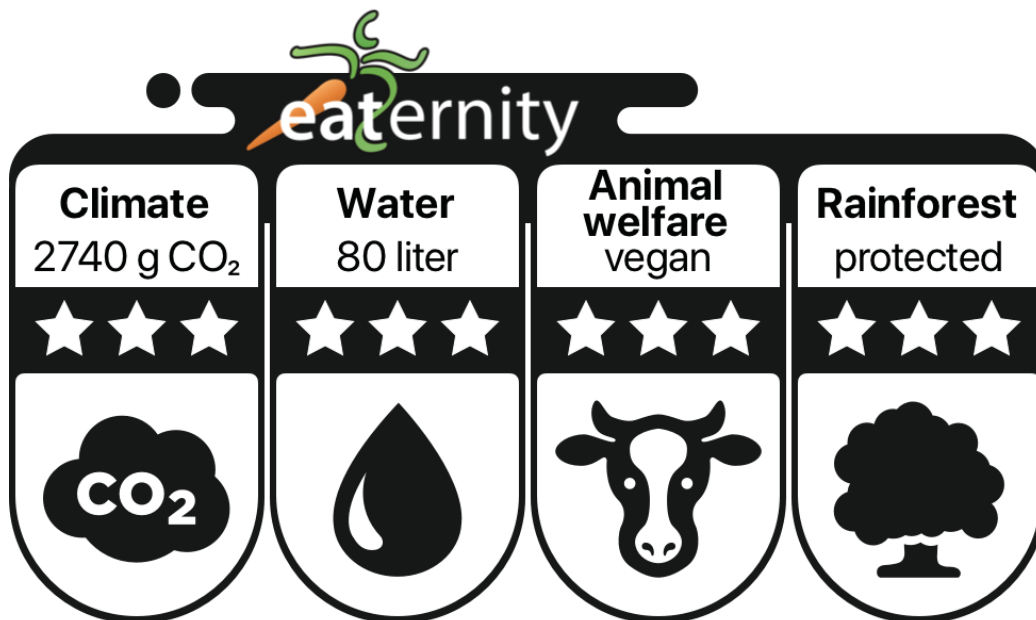


IMPROVING FOOD SUSTAINABILITY WITH PRODUCT LABELLING

Supporting consumers to make more sustainable food buying
decisions with comparable food labels



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PREFACE

Verena Kiefer has written this report as final proof of proficiency of her study programme International Food Business at Aeres University of Applied Science in Dronten, the Netherlands.

During my study, through extracurricular activities, food innovation projects, inputs from my professors, and several internships, I understood how we impact the world around us with our food buying decisions. Finally, in my last internship, I learned how hard it is to trace the supply chain to ensure sustainable food products for the customer. Moreover, I wanted to buy more sustainable food products in the supermarket, but I found it hard to make sustainable food choices. Furthermore, the food packaging information is limited; only some brands informed me about different sustainable factors on the packaging. Therefore, in this research report, I wanted to focus on how consumers can be supported in their buying choices of select more sustainable products. I want to thank my coach, Ms. Cynthia Akkermans, who supported me in my research and gave me great input to bring my writing to a higher level.

The feedback provided by Professor Heather-Anne Grant to further define the statistical analysis has been taken into account for this final version, and improvements have been made.

I hope you enjoy reading it.



Verena Kiefer

Zug, 14.08.2022

TABLE OF CONTENTS

Preface	III
Summary	V
1. Introduction	1
1.1 Sustainable food consumption	1
1.2 Sustainable food labels	3
1.3 Licensing costs and disclosing data issues	6
1.4 Supporting sustainable buying decisions	7
2. Material and Method	9
2.1 Survey questions	9
2.2 Data Analysis	10
3. Results	12
3.1 Demographic overview	12
3.1 Perception of sustainability labels	14
3.2 Most important sustainability factors	19
3.3 Preferred form of information source	25
3.4 Willingness to pay more	27
4. Discussion of Results	28
4.1 Perception of sustainability labels	28
4.2 Most important sustainability factors	30
4.3 Form of presentation of information	31
4.4 Willingness to pay more for more sustainable food choices	32
4.5. Research and methodology reflection	32
5. Conclusions and Recommendations	35
5.1 Conclusions	35
5.2 Recommendations	36
References	38
APPENDIX 1: Survey English	43
APPENDIX 2: Survey German	47
APPENDIX 3: Statistical Analysis in SPSS	52

SUMMARY

Consumers are becoming more aware of the impact they have with their eating habits and want to buy more sustainable food. However, most consumers find it difficult to differentiate between the different labels and logos and draw clear conclusions about what food product choice would be most sustainable. Furthermore, companies do not know which sustainability factors are important for consumers and in what form consumers would like the sustainability information presented. Therefore, this study aims to make the customer's needs more visible for companies to make the food options more comparable. As a result, the main question of this research is, "To what extent are sustainability logos on food packaging supporting consumers in making more sustainable buying decisions? An online Social Media survey was conducted to answer this research question. One hundred sixty-six participants filled in the survey. During the questionnaire, the participants were asked about their current perception, preferred factors and forms they would like the sustainability information presented on the food packaging. The results showed that 61% do not find the current information on the food packing comparable. They would like to have more standardized and government-regulated information. The most important sustainability factors the consumers would like to see are "animal welfare", FairTrade practices," and "water usage". The majority of the participants (58%) were "very likely" to prefer a sustainability score as an information source. The research showed that, on average, the participants are willing to spend 1,23 € more for a sustainably chocolate than the presented 1,50€ chocolate bar. To conclude, the current information on food packaging does not support consumers in making a sustainable buying decisions. More detailed information needs to be presented quickly and conveniently. Preferably the information should be presented in the form of a sustainability score. It is suggested that companies standardize the sustainability information on the food packaging and provide more detailed information. In addition, governments should support consumers by making more regulations regarding sustainability information on food packing to force more standardized and trustworthy information.

1. INTRODUCTION

Consumers are becoming more aware of the impact they have with their eating habits (Annunziata et al., 2019). However, eating habits are hard to change, and untransparent supply chains make it hard for consumers to make sustainable food buying decisions (Vermeir et al., 2020). Mistrust and demand for more information about the sustainability of the products from customers force companies to be more transparent about their supply chains (Sodhi & Tang, 2019). Companies can inform customers about the sustainability of their products by adding sustainability information on the product label in the form of labels, logos or barcodes to access more information about the product. More detailed and accurate information helps raise consumer awareness and supports better buying decisions (Bastounis et al., 2021).

However, many different sustainability labels and logos are on the market (Janßen & Langen, 2017). As a result, most consumers do not understand their meaning, and these labels and logos do not help the consumer differentiate between different options (Aprile & Mariani, 2016). Also, for companies, it is unclear what information they should disclose and if consumers would pay more for the added value of a comparable sustainability logo or label (Sodhi & Tang, 2019).

1.1 SUSTAINABLE FOOD CONSUMPTION

When speaking about sustainable food consumption, it is essential to consider different aspects (Verain et al., 2012). Sustainable food consumption can reduce food waste, water pollution and carbon emissions (Verain et al., 2012). It also ensures food security, safety, and human health (Myers et al., 2013). In retrospect, sustainable food consumption impacts the economic, social and environment and is therefore essential to ensure the food supply in the future (Verain et al., 2016).

However, some current practices result in poor food supply practices (United Nations, 2020). Some examples are that 1/3 of all produced food is wasted due to poor transportation and harvesting practices of consumers' and

retailers' unconscious behaviour resulting in food waste (United Nations, 2020). Also, many farming practices overuse natural resources or contaminate soil, which results in low fertile soil (United Nations, 2020). Considering that food production results in 22% of our total Green Gas emissions, it is crucial to find ways to make food production more sustainable (United Nations, 2020). Furthermore, making consumers more conscious and providing more sustainable food choices are essential to changing their buying behaviour for a sustainable future (Verain et al., 2012).

The increase in consumer awareness can be seen in Germany, where it is a growing trend to make more sustainable purchases (Farrelly, 2021). Germany has a high level of sustainability concerns and the most substantial understanding regarding sustainability among other European countries (Grunert et al., 2014). A survey conducted by the organization Ernst & Young (2020) showed that 52% of German consumers care about sustainable food.






A study written by Potter et al. (2021) and Vermeir et al. (2020) suggested that ecolabels positively impact the trend of purchasing or consuming more sustainable food products. The motivation to buy more sustainably increases when more sustainability information is included at the point of sales (Potter et al., 2021; Vermeir et al., 2020). The study also suggested that decision-making can be improved by making direct in-store advertisements, educational campaigns (Potter et al., 2021), or giving direct customer feedback (Vermeir et al., 2020). As a result, consumers can be highly influenced by their habits (Vermeir et al., 2020). These habits can be intervened by activating personal norms by providing encouragement, feedback or clear information (Potter et al., 2021; Vermeir et al., 2020).

1.2 SUSTAINABLE FOOD LABELS

One way to make consumers more conscious of the sustainability of food products is through sustainability logos and labels on the product packaging (Annunziata et al., 2019). These logos and labels inform the consumer about the impact on sustainability of their food choices (van Loo et al., 2015).

In table 1, the most common certified sustainability labels in the EU and worldwide are shown (Grunert et al., 2014). The Fair Trade label focus on providing better working conditions and prices for farmers to support more sustainable farming practices in developing countries (Fairtrade, n.d.). FairTrade is one of the most known fairtrade labels in Germany (Fairtrade, n.d.). This label is on over 7800 products in Germany and is known by nine of ten consumers (Fairtrade Deutschland e. V., 2021). The Rainforest label focuses on certifying products and ingredients to meet basic social, economic and environmental norms (Nerger, 2021). The MSC (Marine Stewardship Council) is a label for wild fish or seafood that only certifies products that meet strict sustainable requirements (MSC International, n.d.). That covers only fishing healthy stock levels, managing the stock with a long-term outlook, and minimizing the impact of fishing considering other species and the ecosystem (MSC International, n.d.). The Carbon Trust label measures the carbon footprint of specific products and allows companies to label their products with the results (Carbon Trust, 2022). Lastly, the EU Organic Logo certifies products with at least 95% ecological origin (European Commission, n.d.). The label can only be used after control by an authorized control agency or body (European Commission, n.d.). It covers ecological agriculture and has strict requirements on animal welfare (European Commission, n.d.).

Table 1. Certified Sustainability labels in the EU and worldwide

Name (Resource)	Label	Definition	Region
Fair Trade (Fairtrade, n.d.)		Focuses on better prices and working conditions for farmers and supports sustainable farming practices in developing countries.	worldwide
Rainforest Alliances (Nerger, 2021)		Certifies products and ingredients from farmers after audits covering social, economic and environmental aspects.	worldwide
MSC label (MSC International, n.d.)		Certifies wild fisheries with a set of requirements for sustainable fishing to stop overfishing.	worldwide
Carbon Footprint (Carbon Trust, 2022)		Measures and provides companies with information on the total greenhouse gas emission generated by the product.	worldwide
EU Organic Logo (European Commission, n.d.)		Certifies products with at least 95% organic ingredients. It supports ecological agriculture and has strict requirements regarding animal welfare.	EU

In the previous years, many sustainability labels were introduced. Regarding Ecolabel, currently, there are 167 food and beverage labels on the market (Ecolabel Index, n.d.; Janßen & Langen, 2017). That is a considerable amount, and for consumers, it is hard to differentiate between these labels (Aprile & Mariani, 2016). That creates skepticism as consumers do not know what labels they can rely on and what each label exactly means (Aprile & Mariani, 2016). Furthermore, they do not have the background knowledge of each label and its standards (Aprile & Mariani, 2016). Finally, it does not support them in differentiating between different sustainable choices (Aprile & Mariani, 2016; Janßen & Langen, 2017). Another vital factor to consider is that having one sustainable label on the package does not tell the consumer how much more or less sustainable a product is (Poore, 2018). Therefore, it is essential to distinguish between certified quality labels and labels that show quantitative facts regarding the sustainability of products (Poore, 2018).

Eaternity is an organization that tries to support consumers by making the buying decision more transparent by providing quantitative facts with more data and scoring to facilitate customers' decision-making (Eaternity, n.d.). In Figure 1. the Eaternity Score is shown, which covers aspects such as carbon footprint, water usage, animal welfare and rainforest protection (Eaternity, n.d.). Each product is compared to 110 000 products in the food database (Eaternity, n.d.). By giving stars from one to three, customers can understand how sustainable the product is per category (Eaternity, n.d.). In case the customer has two products with an Eaternity label, it will be possible to choose the one with the better scoring. However, as the company is still young, its labels are not used on many food products yet. This label is voluntary (Poore, 2018), and companies have to pay license fees to use the label on their products (Annunziata et al., 2019). Moreover, companies with low impact are more likely to purchase a license than companies that produce products with high impact (Waldman & Kerr, 2014). One example of a company using the Eaternity Score is Veganz, a famous plant-based food brand in Europe (Veganz Group AG, 2021). This company provides their customer with the Eaternity Score on 120 products and sells them in over

22 000 stores, mainly in Germany, Austria, Switzerland, Finland, Sweden and Norway (Veganz Group AG, 2021).

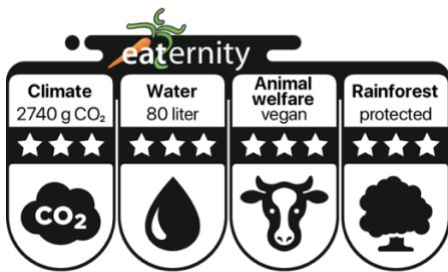


Figure 1. Eaternity Score (Eaternity, n.d.)

1.3 LICENSING COSTS AND DISCLOSING DATA ISSUES

Using sustainability labels is coming at a cost for companies and consumers (Annunziata et al., 2019). Often, companies have to pay license fees to use such labels and make process adjustments to make the supply chain more transparent (Annunziata et al., 2019). The term supply chain transparency can be used to disclose information to the public about the operations of the product that the company is selling (Sodhi & Tang, 2019). Additionally, the term traceability is used for the capability of a company to trace its supply chain (Sodhi & Tang, 2019). Next to that, the term visibility is used to gather information about the supply chain as a company (Sodhi & Tang, 2019). As a result, to make a supply chain transparent, companies have to gather the information by doing internal and external audits, interviews and sustainability reports (Sodhi & Tang, 2019). This information supports the company in tracing their information and finally provides the public with a transparency report (Sodhi & Tang, 2019).

Studies have shown that consumers are willing to pay more for a product with a sustainability label (Janßen & Langen, 2017; Lombardi et al., 2017; Potter et al., 2021). However, even if the consumer would pay more for a product with a sustainability label, for companies, it is challenging to disclose information about their product to make the supply chain transparent (Sodhi & Tang, 2019). There is always a risk that the information reveals negative reputed practices of the company or its supplier (Sodhi & Tang, 2019). Furthermore, it is unclear if

disclosing this information benefits them, as the disclosed information can be misunderstood and place the company in a bad position (Sodhi & Tang, 2019).

1.4 SUPPORTING SUSTAINABLE BUYING DECISIONS

Studies have shown that consumers want to buy more sustainably and tend to buy products with sustainability logos and labels (Annunziata et al., 2019). However, it is necessary to know the relationship between motivation and understanding of what impact they make by choosing a sustainable product (Annunziata et al., 2019). In the end, this is what triggers their buying decision (Annunziata et al., 2019). Also, companies want to provide consumers with more information about the sustainability of their products, to improve their image and increase sales (Bastounis et al., 2021). However, it is unclear what is the most effective type of label to change the buying behaviour (Potter et al., 2021). Furthermore, labels can confuse consumers since they might not understand what is meeting their sustainability needs, and they do not know how to differentiate between many logos and labels (Potter et al., 2021).

Therefore, the main question of this research is: **To what extent are sustainability logos on food packaging supporting consumers in making more sustainable buying decisions?**

To answer this research question, the following sub-questions have been formulated:

1. How comparable do consumers perceive the different food options when seeing the sustainable information on the packaging?
2. What are important sustainability factors customers want to compare when buying food?
3. In what form would customers would like to be informed about the sustainability of their product via the packaging?
4. How much more are consumers willing to pay extra for a product having a higher sustainability scoring compared to a product with lower sustainability scoring?

This research aims to find a way that consumers can make more informed sustainable food buying decisions in supermarkets. First, it should become clear if there is a need from consumers for more comparable labels. Additionally, the study should reveal in what form the consumer would like to be informed and what factors consumers are interested to see on these labels. Moreover, the study should indicate how much more a consumer would be willing to pay if they know that one product is much more sustainable than another. These indications should show companies the need and demand of consumers for providing more comparable sustainability information on the food product labels. Suppose companies understand that consumers would also be willing to pay more for a more sustainable product. In that case, they will be more likely to provide more information on their product label and maybe also invest in spending more money on licensing costs. If some companies start to provide more information, they will put other companies under pressure to do the same, not to lose customers who want to make more sustainable decisions. That will support that consumers will receive a wider variety of products with sustainability labels, whereby they will have the possibility to choose the most sustainable product on the shelf. As a result, this research could support more informed consumer decision-making, thereby supporting a significant sustainable change in the food industry.

2. MATERIAL AND METHOD

The main question of this research was: To what extent are sustainability logos on food packaging supporting consumers in making more sustainable buying decisions? A survey among German consumers was conducted to answer the research questions. The proposed study is a questionnaire to reach participants from various backgrounds, regions, and ages. This method was chosen because it is the best way to collect data from many people and analyze it afterward (Grassini & Laumann, 2020). Germany has 83,2 million inhabitants (Statistisches Bundesamt, 2021). To receive a confidence level of 95%, 385 participants had to participate in the survey (Survey Monkey, n.d). The survey was distributed through Social Media, as this is a place used by many people from different backgrounds, regions and ages in Germany. The Social Media platforms that were used were Facebook, Instagram and WhatsApp. To make it more attractive to participate in the study and to receive the responses in a timely manner, the participants could win one of two 25€ Amazon gift cards.

2.1 SURVEY QUESTIONS

During the questionnaire, the participants were asked demographic questions regarding their gender, age, and educational level to understand if the research covers Germany's population.

The fourth question asked if it is for the participant important to buy sustainable food. Thereby, the participant could choose very important, important, not important or not important at all. This question should work as a filter to only use research answers from people who consider sustainable food consumption important. That will help to receive a clearer understanding of the customers' needs.

The fifth and seventh questions asked the participants a yes or no question if they feel the current information on the product packaging is supportive of understanding and comparing the most sustainable food product choice. If the participant answered no, they could suggest how the understanding and the comparability can be improved. The ninth question showed the

participant two pictures of the same chocolate but with a different label. Then the participant could decide what label supports the sustainability buying decision. Afterwards, the participant had to describe why they chose this version.

The tenth question tried to understand about which sustainability factors the consumer wanted to be informed on the product packaging. With this, six categories were given: carbon footprint, water usage, animal welfare, rainforest protection, fair trade practices and contribution to society in developing countries (by supporting their infrastructure, education and finance). Each category could be answered on a scale from 1 to 5 (don't agree at all to completely agree). This option was chosen so that the participant could consider each category carefully.

The eleventh question asked how the participant would like to be informed about the product's sustainability. With this, the participant could rate three options by indicating how likely they would like to have the label. Firstly, a sustainability score rating makes the product's sustainability for the customer comparable. Secondly, a QR code on the product packaging easily scannable with a mobile phone. Thereby, the customer can access all product-related sustainability data. Thirdly, regular sustainability labels and logos.

The twelfth question asked, "How much more would you pay for a more sustainable hazelnut chocolate (90g)?" The participant saw pictures of two different hazelnut chocolates with sustainability scoring from Eaternity. One chocolate had an excellent score, and the other had a really bad score. Then, the participants could choose if they would be willing to pay more for the more sustainable option. With this, the participant could choose between 0,00€- 2,50€. This answer should help to understand if the comparability results in the willingness to pay more for food products.

2.2 DATA ANALYSIS

The data of this research was analyzed with graphs and charts. SPSS was used to cross-reference independent and dependent variables in the research. Thereby, Cross Table, Chi-Square and Multivariant tests were used. For example, to analyze survey question nine, the Cross-Table and Chi-Square tests

were used to analyze if there is a significant difference between the observed sustainability label and demographic factors (age, gender and education). When a significant difference was found, the Cross Table helped to find the significant difference.

To analyze survey questions ten and eleven, Chi-Square analysis and Multivariate Test were used to observe sustainability factors and the significant differences in a demographic factor. If a significant difference was found, the factor was analyzed with the results of the Multivariate Test.

In survey question twelve, the willingness of consumers to pay more if the product is comparable, it was analyzed with basic calculations and graphs.

Microsoft Excel was used to compare and analyze the data.

3. RESULTS

3.1 DEMOGRAPHIC OVERVIEW

In order to answer the research question, an online survey was distributed through social media. A post was shared on Instagram, Whatsapp and Facebook to request people living in Germany to participate in the survey. Additionally, the survey was shared in multiple sustainability-related German Facebook groups. The survey was active from the 25th of June to the 8th of July, 2022 and was executed over the platform survio.com. One hundred fifty-four participants participated in the survey, of which 137 were female (82%), and 29 were male (18%). The average time to complete the survey was 4 minutes and 48 seconds.

In Figure 2. the age categories are shown: 31 participants were 18-25 years old (20 %), 36 participants were 26-35 years old (24%), 45 participants were 36-50 years old (29%), and 42 participants were 51 years and older (27%). There was a relatively even distribution in age among the categories.

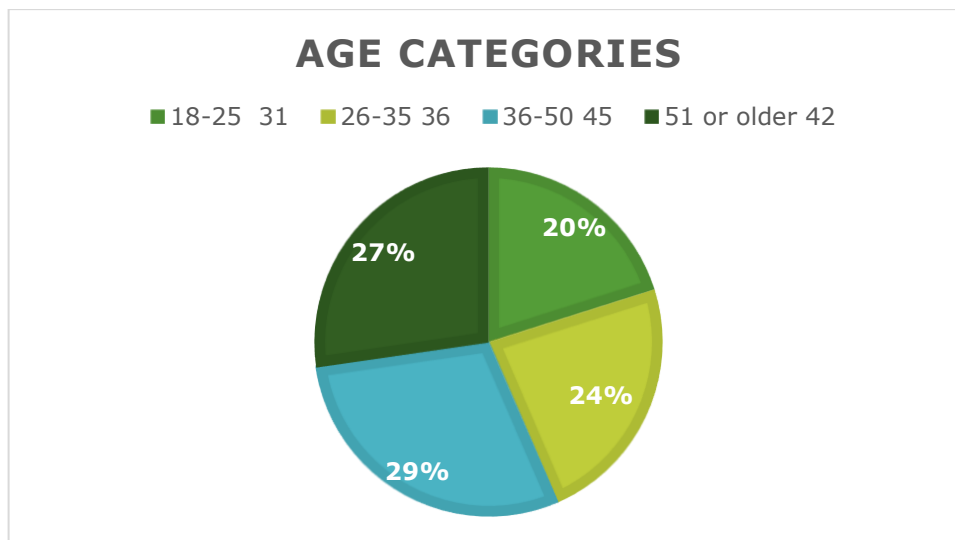


Figure 2. Age categories amongst the participants of the questionnaire

In Figure 3. the education categories amongst the participants of the survey are shown, 56 participants have a University or a University of Applied Sciences Degree (36%), 45 participants have a Vocational School or Technical College Degree (29%), 29 participants have a High School Degree (19%), and 24

participants have a Secondary School Certificate (16%). There were no participants with no degree.

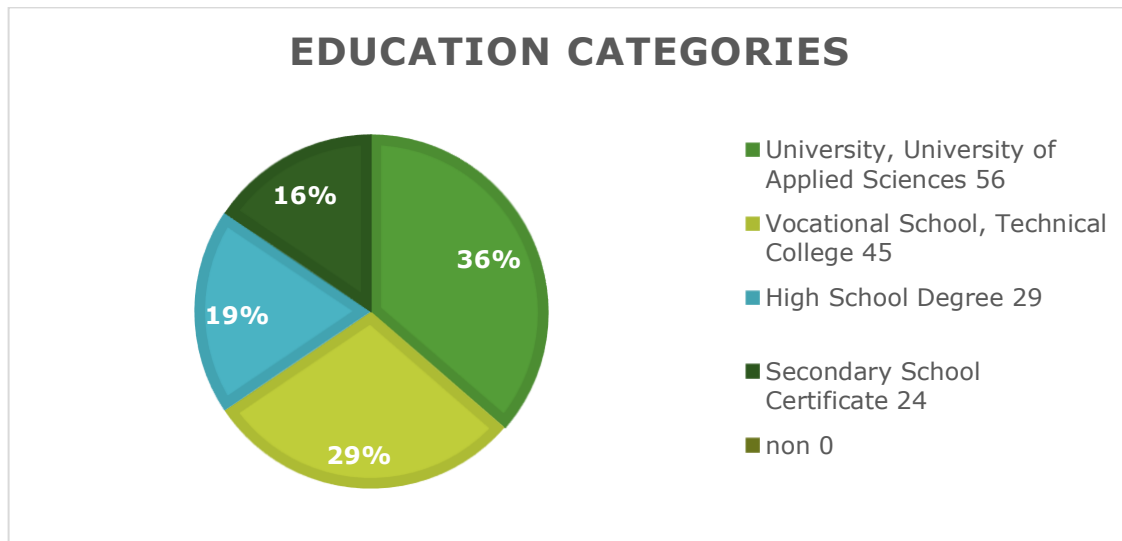


Figure 3. Education categories amongst the participants of the survey

Figure 4. shows the importance of buying sustainable food among the participants. Seventy-one participants (43%) find it "very important" to buy sustainable food, 83 participants (50%) find it "important", 12 participants (7%) find it "not important", and no participant finds it "not important at all." Therefore, it was decided to exclude the participants that found it "not important" to buy sustainable food to receive a clearer study result.

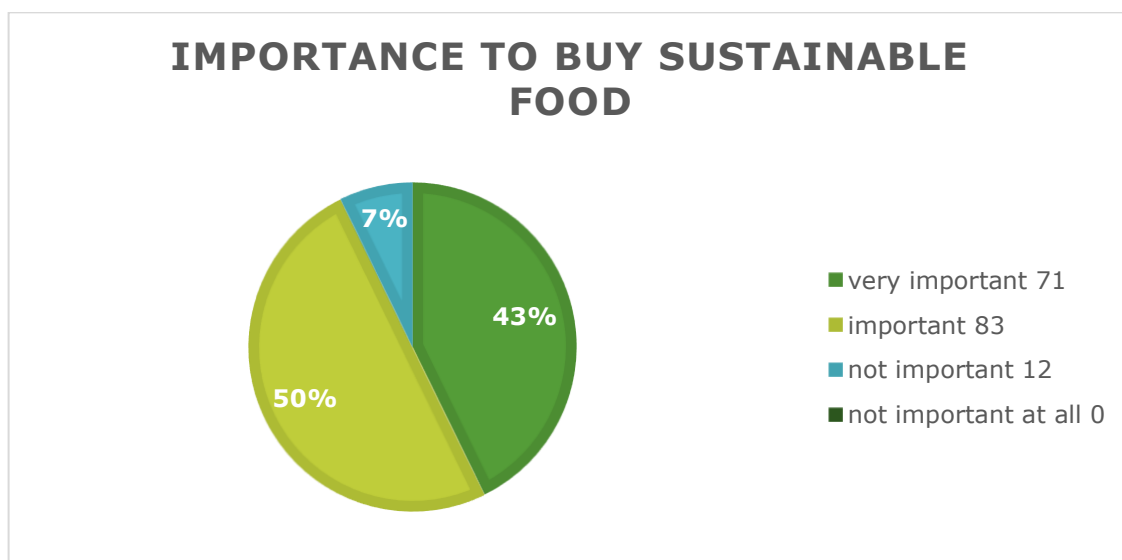


Figure 4. Importance to buy sustainable food

3.1 PERCEPTION OF SUSTAINABILITY LABELS

Survey questions five, six, seven and eight were analyzed to identify how comparable consumers perceive the different food options when seeing the sustainable information on the packaging. First, the participant was asked a “yes” or “no” question about their understanding and comparability of the current information on the product packaging to select the most sustainable food choice. If the participant answered “no”, the participant had to explain their choice. Additionally, the participant received two pictures with the same food product (chocolate) with different labels to select the one they found more comparable. Afterwards, the participant had to explain their selection. Finally, question 9 was analyzed with the Cross table and Chi-Square Analysis.

Table 2. shows the perception of the participants' experience if they find the information on the food packaging comparable and understandable. It shows that 97 of 154 participants (63%) do not find the information understandable, and 94 of 154 participants (61%) do not find the information comparable.

Table 2. Count of participants that experience the current information on the food label understandable and comparable.

	Yes		No	
	Number	Percentage	Number	Percentage
Information is understandable	57	37%	97	63%
Information is comparable	60	39%	94	61%

If the participants answered “no”, they had to give an explanation. Table 3. shows the information the participants are missing to decide on sustainable food choices. For example, 25 of 97 participants (26%) mentioned that they would like to have more options to compare the products and that they would like to be informed about the complete origin of the product, not only the last step in the

supply chain. Additionally, they would like more information regarding production and supply chain transparency (18 out of 97 participants).

Table 3. Participants' opinions about how the information on the food packaging can be improved.

Nr.	Understandability can be improved by:	Number of mentions out of 97 participants:
1	comparable label / sustainability score	25
2	origin of product (not only the last step in supply chain)	25
3	more information regarding production / supply chain transparency	19
5	water usage	16
6	Co2 footprint	14
7	government regulations needed/standardization	12
8	transportation / transportation ways	10
9	better visibility on packaging	8
10	working condition / social responsibility / fair trade	7
11	animal welfare	5
13	packaging material sustainability	4
14	bigger text on label	3
16	energy usage	3

In Table 4, the participants' perception of what information should be included on the food packing to support customers to make better sustainable choices is shown, where 29 of 94 participants (30%) mentioned that they would like to have a sustainability score or clear facts supporting them to differentiate between different food choices. In addition, 18 of 94 participants (19%) say that standardized or government-regulated labels are needed to compare the different options in the supermarket. Furthermore, 14 of 94 participants (15%) said they would need more detailed information regarding the product's origin.

Table 4. Participants' perception of what information should be included on the food packing to support customers to make better sustainable choices

Nr.	Comparability should be improved by:	number of mentioning out of 94 participants
1	sustainability score/ more info/ facts	29
2	standardized label/ government regulated	18
3	origin more detailed	14
4	production conditions	10
5	CO2 emission	8
6	water usage	7
7	origin of ingredients	6
8	supply chain transparency	5
9	cultivation conditions	4
10	social impact	3
11	packaging recycling	3
12	producer name	2
13	transport	1

When the participants had to choose their preferred label to compare a food choice (chocolate), 91 of 154 Participants (59%) chose the sustainability score, and 63 participants (41%) chose the regular label. Table 5. shows the most common reasons why the participants selected their option. 27 of 63 participants (43%) said they chose the regular label (FairTrade logo) as they knew the label and what it was for. Additionally, it was clearly visible on the packaging and supported them in making a fast selection. 51 of 91 participants (56%) said they chose the sustainability score because it has more factors to compare the different sustainability factors. 37 of 91 participants (41%) valued the more detailed information on the packaging.

Table 5. Participant's reason for preferring to choose a regular sustainability label or a sustainability score

Option A		Option B	
“Regular Label – Fairtrade”		“Sustainability Score – Eaternity”	
63 participants		91 participants	
known label, know what it stands for	27	more detailed information	37
clear visible on the packaging	14	easier decision	4
fast selection	11	more factors to compare	51
strict label, trust	9	uncomplicated/better understanding	6
easy, not too many details	8	faster decision	2
clear understanding	2	"i can decide myself"	2

For the preferred label, the different demographic categories were evaluated in more detail, and Chi-Square analysis was used to determine if there is a significant difference between gender, age and education and the preferred label.

No significant difference was found for preferred label and age ($\chi^2(3) = 0.799^a$, $P = .850$, see table 6). Table 6. shows the preferred label by gender. 74% (20 of 27 participants) of the male participants prefer the sustainability score, whereby only 56% (71 of 127 participants) of the female participants prefer the sustainability score. It was different for the regular sustainability label: 44% of the female participants preferred this regular label, while only 26% of the men preferred the regular label. This indicates that male participants seem to prefer the sustainability score more than the female participants, but the difference was not significant ($\chi^2(1) = 3.041^a$, $P = .081$, see table 6).

Table 6. Preferred label by gender

	Regular label (FairTrade)		Sustainability score (Eaternity)		
Gender	Amount	Percentage	Amount	Percentage	Total
female	56	44%	71	56%	127
male	7	26%	20	74%	27

Figure 5. shows the preferred label by education level. It shows that the preference for people with a High School Degree is higher for sustainability scores (22 % of the participants) than for a regular label (14,3% of participants). For people with a Secondary School Degree, the preference is relatively evenly (15,9% regular label & 15,4% sustainability score). 42% (38 of 91 participants) with a University or University of Applied Sciences Degree prefer a sustainable score, whereas 26 of 63 participants (41,3%) with a Vocational School or Technical College Degree prefer the regular label.

A significant difference was found between the preferred label and the participant's education, $\chi^2(3) = 8.253$, $P = 0.041$. Therefore, it is significantly different that more people with a Vocational School or Technical College Degree prefer the regular label. Furthermore, significantly more people with a University or University of Applied Science Degree prefer the sustainability score.

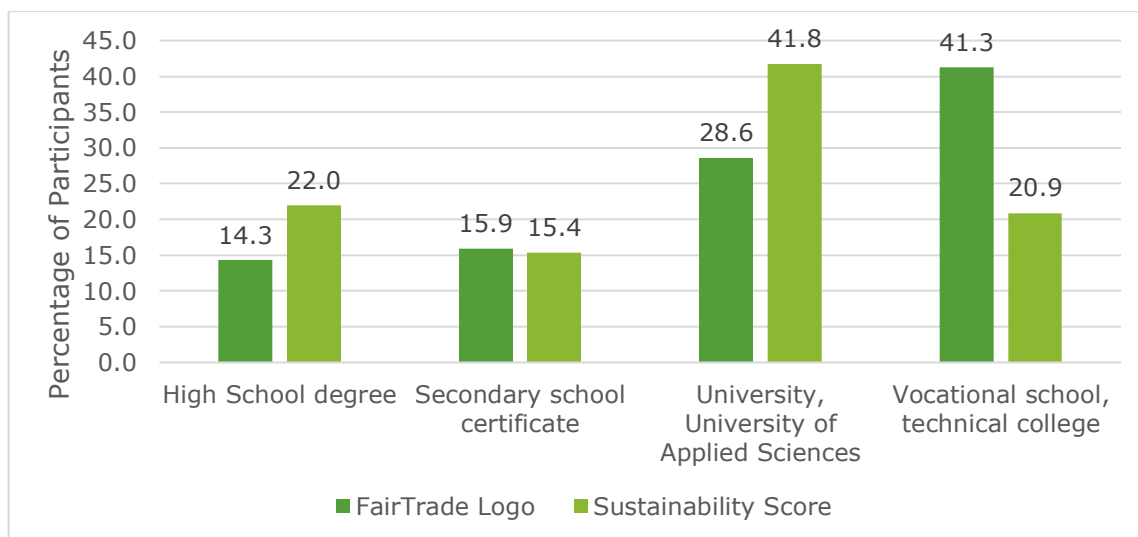


Figure 5. Preferred label by education

3.2 MOST IMPORTANT SUSTAINABILITY FACTORS

To find the most important sustainability factors for customers, the participants were asked to rate the importance of animal welfare, fair trade practices, water usage, rainforest protection, CO2 footprint and support of people in developing countries on the Likert scale (1 to 5).

Figure 6. shows the Likert scale rating of the importance of the sustainability factors. First, the sustainability factor "animal welfare" received the highest Score (4,4 of 5), followed by "FairTrade practices" (4,2 of 5) and thirdly, "water usage" (4,2 of 5). Lastly, "supporting people in developing countries" with a mean of 3,77 of 5.

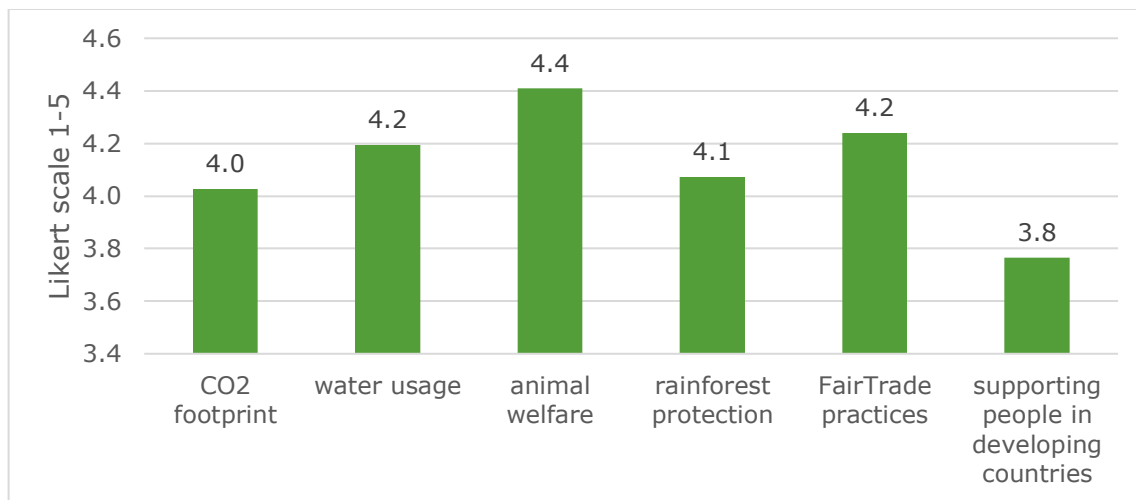


Figure 6. Likert Scale rating of the importance of the sustainability factors

The Chi-Square Analysis and Multivariate Test were used to analyze the significance between the different sustainability and demographic factors. Table 7. shows the results of the test regarding gender. The Chi-Square test shows a significant difference ($\chi^2(6) = 10.033$, $p = <.040$) for "animal welfare" and gender. In Figure 7. it can be seen that there is a clear difference between male and female responses. Women rated animal welfare higher than men.

The second difference can be seen by "supporting people in developing countries" with a significance of $\chi^2(6) = 12.772$, $p = <.012$. In Figure 8, it can be seen that significantly more male participants (51,9%) chose a 5-point rating for

“supporting people in developing countries”, whereby only 37,5% of the female participants chose a 5-points-rating. Therefore, 27,6% of the female participants gave a 4-point rating, and only 3,7% of the male participants gave four points.

Table 7. Results of testing sustainability factors by gender

Sustainability factor	Gender means rank		Chi-Square	Asymptotic Significance
	male	female		
CO2 footprint	4.296	3.969	9.371 ^a	.052
water usage	4.519	4.126	4.966 ^a	.291
animal welfare	4.333	4.425	10.033 ^a	.040
rainforest protection	4.333	4.016	3.465 ^a	.483
FairTrade practices	4.333	4.220	1.952 ^a	.745
Supporting people in developing countries	3.815	3.756	12.772 ^a	.012

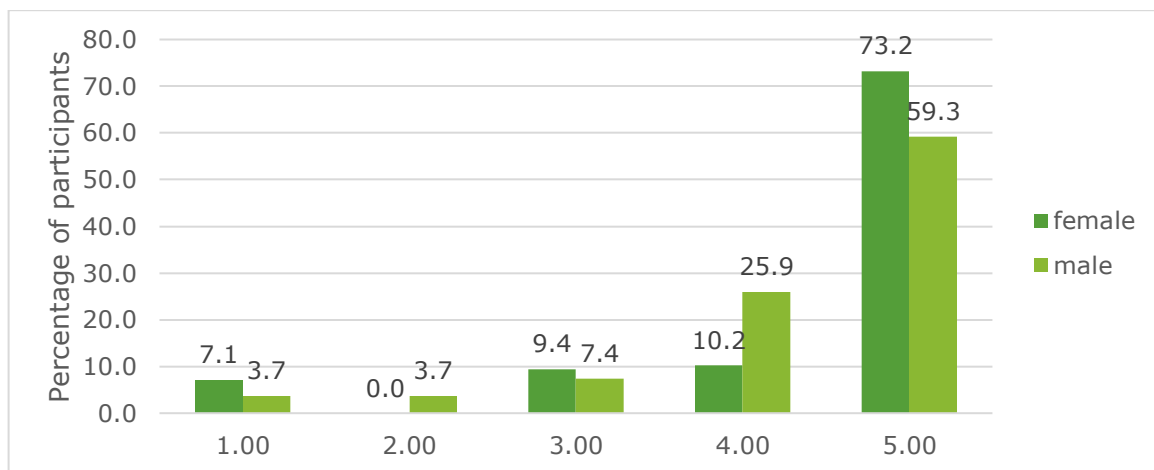


Figure 7. "Animal welfare" rating regarding gender differences

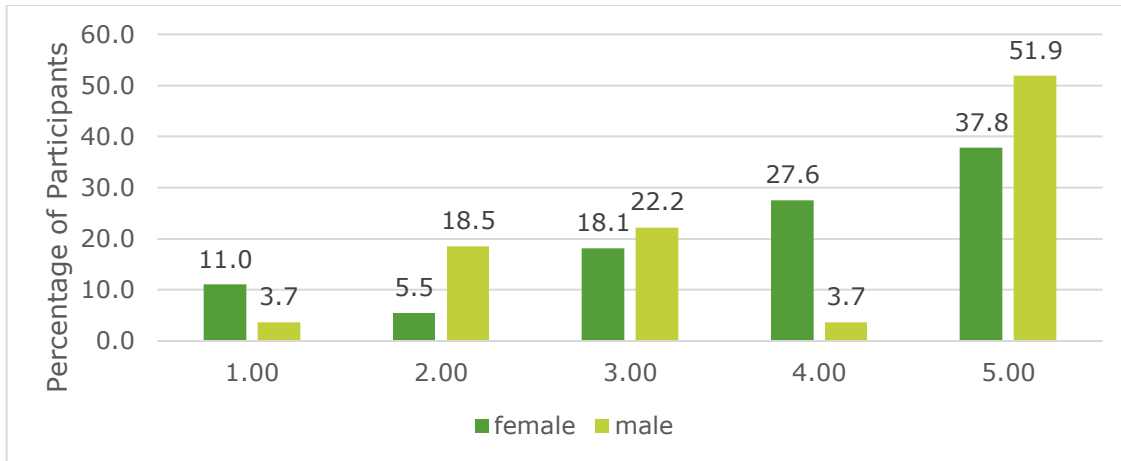


Figure 8. “Support for people living in developing countries” rating regarding gender differences

Table 8. shows the significant differences between the sustainability factors and age groups. For most factors, no significant differences were found ($p > 0.05$). A significant difference was found for “rainforest protection” and age ($\chi^2(6) = 23.465$, $p = <.024$). Figure 9 shows that the mean was the highest (4.5) for the age category “26 to 35 years”. The lowest mean has “51 or older” participants, with a mean of 3.8. Similarly, in Figure 10, the sustainability factor “FairTrade practices” has the highest mean for “26 to 35 years” participants with 4.6, and the lowest with 4 for participants of the age group “18 to 25 years”. A significant difference was found for “FairTrade practices” and age ($\chi^2(6) = 21.072^a$, $p = <.049$): this factor was valued the most for the age category 26-35 years.

Table 8. Results of testing sustainability factors and age groups

	Age mean rank					
Sustainability factor	18-25	26-35	36-50	51 or older	Chi-Square	Asymptotic Significance
CO2 footprint	4.226	4.222	3.933	3.810	10.650 ^a	.559
Water usage	4.355	4.306	4.156	4.024	17.590 ^a	.129
Animal welfare	4.323	4.556	4.533	4.214	18.316 ^a	.106
Rainforest protection	3.903	4.500	4.067	3.833	23.465 ^a	.024
FairTrade practices	4.000	4.639	4.333	3.976	21.072 ^a	.049
Supporting people in developing countries	3.613	3.861	3.867	3.690	11.863 ^a	.457

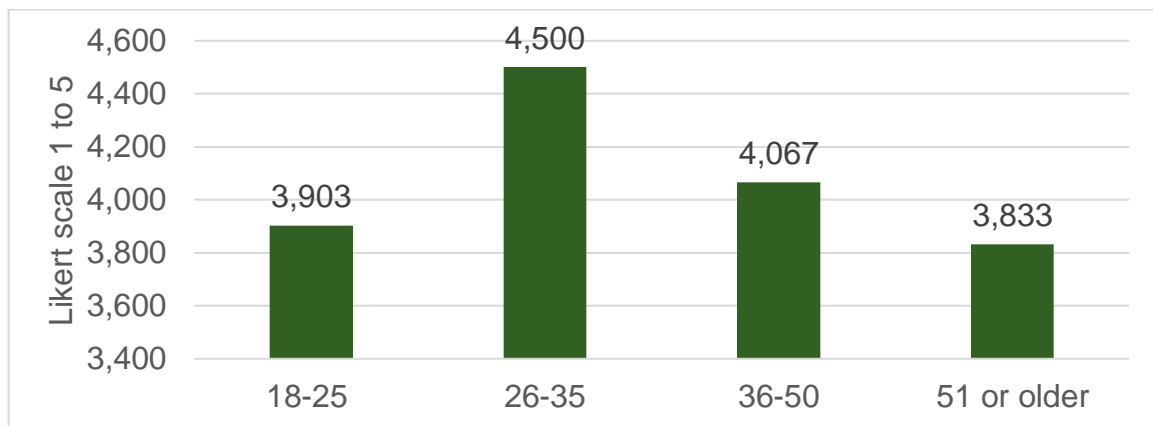


Figure 9. Mean differences between age groups for the sustainability factor "rainforest protection."

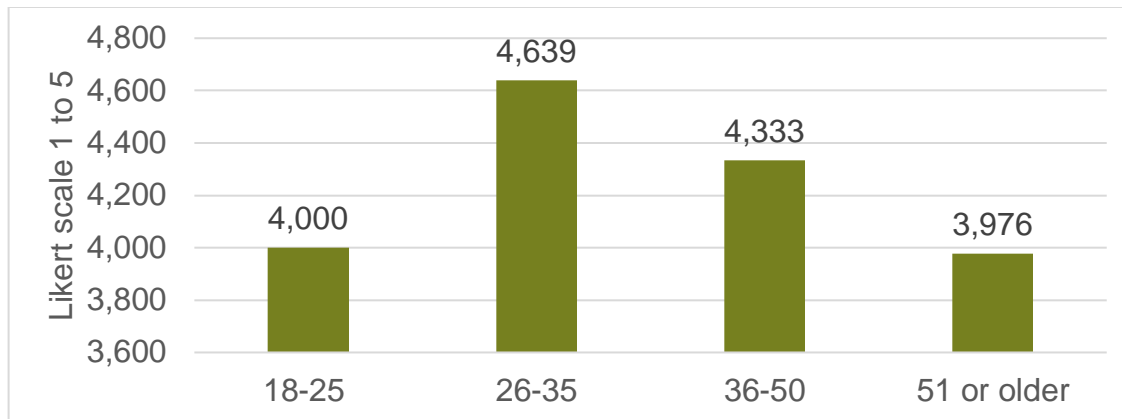


Figure 10. Mean differences between age groups for the sustainability factor "FairTrade practices."

Table 8. shows the significant differences between the sustainability factors and age groups. For most factors, no significant differences were found ($p > 0.05$). A significant difference was found for "rainforest protection" and age ($\chi^2(6) = 23.465$, $p = <.024$). Figure 9 shows that the mean was the highest (4.5) for the age category "26 to 35 years". The lowest mean has "51 or older" participants, with a mean of 3.8. Similarly, in Figure 10, the sustainability factor "Fairtrade practices" has the highest mean for "26 to 35 years" participants with 4.6, and the lowest with 4 for participants of the age group "18 to 25 years". A significant difference was found for "FairTrade practices" and age ($\chi^2(6) = 21.072^a$, $p = <.049$): this factor was valued the most for the age category 26-35 years.

Table 9. shows the significant differences between sustainability factors and education groups. A significant difference was found by "rainforest protection" and educational level ($\chi^2(6) = 31.243$, $p = <.002$). As a result of this, it can be seen that significantly more participants with a University and University of Applied Science degree (mean= 4.3) and Vocational School, Technical College Degree(mean=4,2) choose a much higher score than participants with a Secondary School Certificate (mean= 3.7) and High School Degree (mean= 3,7). Furthermore, a significant difference can be seen by "FairTrade practices" $\chi^2(6) = 22.664$, $p = <.03$. Participants with a University, University of Applied Sciences

degree gave an average score of 4.4 compared to participants with a Secondary School Certificate, who gave an average score of 3.9. Therefore, these results are significant.

Table 9. Results of testing sustainability factors and education groups

	Education means rank					
Sustainability factor	Secondary School Certificate	Vocational School, Technical College	High School Degree	University, University of Applied Sciences	Chi-Square	Asymptotic Significance
CO2 footprint	3.500	3.978	3.724	4.446	19.452 ^a	.078
water usage	3.875	4.000	4.172	4.500	17.914 ^a	.118
animal welfare	4.000	4.511	4.517	4.446	20.447 ^a	.059
rainforest protection	3.708	4.244	3.690	4.286	31.243 ^a	.002
FairTrade practices	3.917	4.267	4.069	4.446	22.664 ^a	.031
Supporting people in developing countries	3.250	3.778	3.759	3.982	16.130 ^a	.185

Overall, in Tables 7, 8 and 9, no significant differences were found for the demographic categories and the sustainability factors "CO2 footprint" and "water usage".

3.3 PREFERRED FORM OF INFORMATION SOURCE

To identify “In what form customers would like to be informed about the sustainability of their product via the packaging?” the participants were given three options, a sustainability score, QR code and regular sustainability labels. Figure 11. shows the likeliness the participants would like to be informed about the sustainability of the products. Most participants seem to prefer sustainability score as an information source: 90 of 154 participants (58%) choose “very likely” and 45 likely for this option. For the regular labels, most participants indicated that it is very likely (49 of 154) or likely (49) that they would like to be informed via this label. For the QR code, 46 of 154 participants (30%) chose “likely not,” and 35 of 154 participants (23%) said “not at all”.

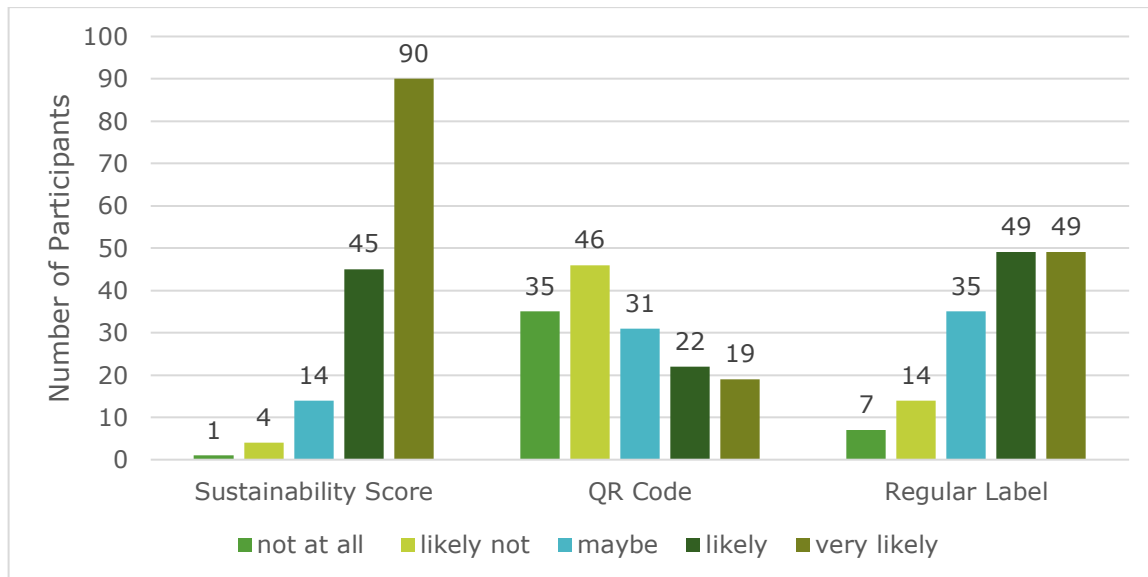


Figure 11. The likeliness of how the participants would like to be informed about the sustainability of the products.

The Chi-Square analysis was used to see the differences between the demographic factors regarding the information source preference. In Table 10. the results of Chi-Square analysis regarding sustainability information source with demographic factors can be seen. It shows that there is only a significant difference between the regular label and gender ($\chi^2(4) = 17.664^a$, $p = <.001$), in Figure 12. It can be seen that more female participants chose “very likely” (35%)

and “likely” (34%) compared to the male respondents (19% of male participants chose “very likely”, and 22% chose “likely”). Therefore, significantly more female participants are likely to prefer the regular label than male participants.

Table 10. Results of Chi-Square analysis testing sustainability information source with demographic factors.

Information Source	Demographic factor	Chi-Square	Asymptotic Significance
Sustainability Score	Gender	3.642 ^a	.457
	Age	15.269 ^a	.227
	Education	15.201 ^a	.231
QR Code	Gender	5.185 ^a	.394
	Age	20.928 ^a	.139
	Education	10.468 ^a	.789
Normal Label	Gender	17.664 ^a	.001
	Age	13.672 ^a	.322
	Education	15.230 ^a	.229

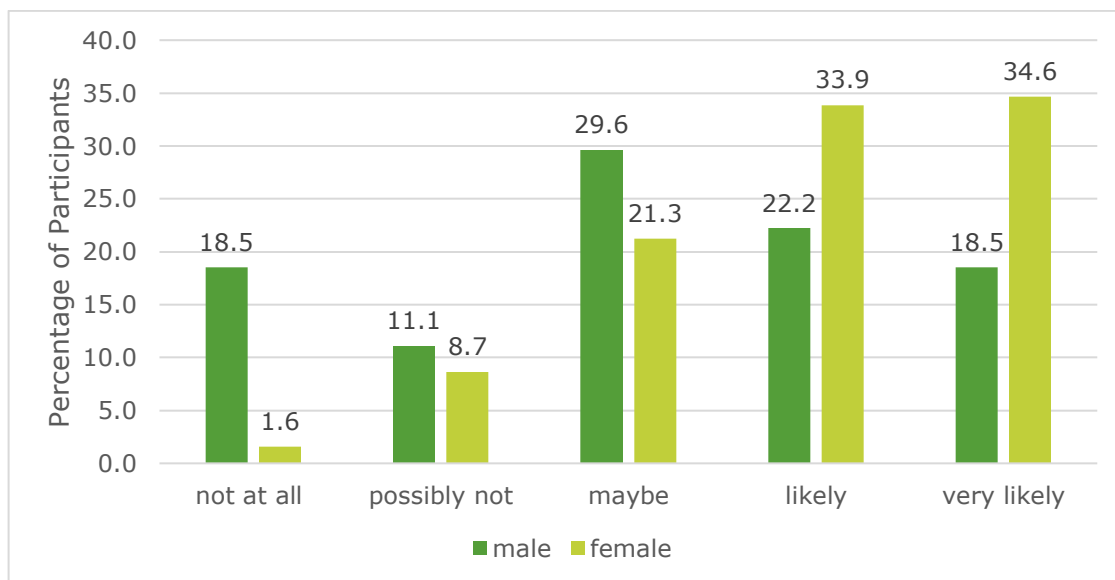


Figure 12. Percentage of participants' preference for normal label based on gender.

3.4 WILLINGNESS TO PAY MORE

The last sub-question was, "How much more are consumers willing to pay extra for a product having a higher sustainability scoring compared to a product with lower sustainability scoring?" This sub-question was evaluated with the survey question, where the participant received two pictures of a chocolate bar, one with high sustainability scoring in all factors and one with bad sustainability scoring in all factors. In addition, the regular chocolate bar was priced at 1,50€. Finally, the participant was asked how much more the participant would pay for the more sustainable option.

Figure 13. shows the willingness of the participant to pay extra for one more sustainable chocolate bar. It shows that 80 of 154 participants (52%) would spend 0,50€ to 1,00€ more, and 65 of 154 participants (42%) are willing to pay between 1,50€ and 2,50€ for a bar of more sustainable chocolate. Only 9 participants said they would be willing to spend 0,00€ -0,10€. The average amount the participants were willing to spend was 1,23€. When comparing this amount to the regular chocolate price, it can be seen that this price is nearly double. During the study, a few participants commented that they do not like to eat chocolate. Furthermore, they mentioned that they are looking at different sustainability factors when buying chocolate, as they understand the impact they make with their buying behaviour.

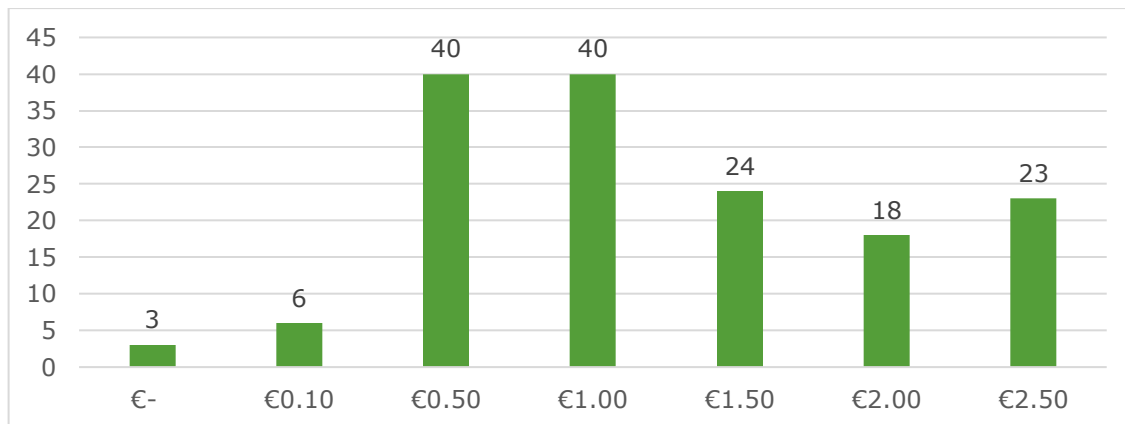


Figure. 13 The amount of the participant's willingness to pay extra for a more sustainable chocolate bar (regular price of € 1.50).

4. DISCUSSION OF RESULTS

This thesis was written to support consumers in making more informed sustainable food buying decisions in supermarkets. A survey with 154 participants was conducted, and the participants were asked to share their perception of the understandability and comparability of the sustainability of the food packaging. Additionally, their preference for the sustainability factors was observed and the way they would like to have the sustainability information presented on the food packaging. Lastly, it was observed how much more consumers would be willing to pay for more comparable food choices. In this discussion, the key findings of the results are highlighted and compared to similar studies.

4.1 PERCEPTION OF SUSTAINABILITY LABELS

The results have shown that 63% of the participants (97 of 154) perceived the information about the different food choices in the supermarket as not understandable, and 61% (94 of 154 participants) did not find the information comparable. 25 of 94 participants (27%) said they would like more options to compare the products. Furthermore, 25 of 94 participants (27%) mentioned that they would like to be informed about the complete origin of the product, not only the last step in the supply chain. To make the information more comparable, 29 of 94 participants (30%) mentioned that they would like to have the information in the form of a sustainability score and 18 of 97 participants (19%) said that standardized labels or government-regulated labels are needed to support them by decision making.

The result shows that the participants would like much more information regarding the sustainability shown on the product packaging. They would like to be informed about the complete origin and way the product goes and what impact the whole chain makes, considering aspects such as CO₂ footprint, water usage, and production condition. To compare this information, they prefer having a sustainability score, standardized labelling or government-regulated labels. Standardized labels or government-regulated labels could also increase the

consumer's trust as the information source will become clearer, and it will be easier to decide between the huge amount of different sustainability labels on the market. More understanding and trust can increase the motivation to select more sustainable choices.

These results align with the study of Annauziata (2019), where it was found that understanding sustainability information on food packaging is crucial. Furthermore, the findings of the study by Vermei et al. (2020) and Potter et al. (2021) suggested that more and clearer information is a strong intrinsic motivation to buy more sustainable.

When the participants had to choose their preferred label to compare a food choice (chocolate), 91 of 154 Participants (59%) chose the sustainability score, and 63 participants (41%) chose the regular label (FairTrade). The most common reason the participants selected the regular label was that they knew what it was for, and it was clearly visible on the packaging, which supported them in making a fast buying decision. On the other hand, participants that chose the sustainability score made decisions as it has more factors to compare the different sustainability factors as they valued the more detailed information on the packaging.

By analyzing the significant differences in the preferred label, it becomes visible that most participants, 42% (38 of 91) with a University or University of Applied Sciences Degree prefer a sustainable score, whereby 26 of 63 of the participants (41,3%) with Vocational School or Technical College Degree prefer the regular label (FairTrade). This result shows that participants with a higher education degree are more likely to select a sustainability score.

Overall, it can be seen that there are different preferences and reasons why the participants selected a specific label. Some preferred the sustainability score as they wanted to have more precise sustainability information and make their own choice based on the information, whereby the participants that selected the regular label valued the trust and easiness of selecting a known label. To conclude, these results show that both participants would like to clearly

understand sustainability but would like to utilize the information provided differently. Therefore, it is crucial to create a label that meets both consumers' needs or increase the familiarity of such labels to educate consumers better. Another essential factor to look at is why there is a huge difference in the preference for sustainability scores of people with a University or University of Applied Science degree and a preference for a regular label for people with a Vocational School or Technical College Degree. To conclude, familiarity with labels supports the consumers' buying decisions and providing more and clearer information could support consumers to make more informed buying decisions.

These findings align with the study of Annauziata (2019), which found that well-known and well-labelled information supports the customers buying decisions and motivates them to select sustainable food options. Grunert et al. (2014) and Hanss & Böhm (2011) found that familiarity and trust in the label are prerequisites for consumer decision-making. In addition, Van Loo et al. (2015) found that consumers with a greater understanding of sustainability aspects value more information on the food choice. However, in this study, it was not defined in what form the consumer would like the information presented.

4.2 MOST IMPORTANT SUSTAINABILITY FACTORS

The most important sustainability factors for the participants were “animal welfare”, “FairTrade practices,” and “water usage. The results of the study of Grunert et al. (2014) are not in line with these findings as this study suggested that consumers are mainly interested in environmental factors rather than ethical factors. A study by Hanss & Böhm (2011) suggested that the most important attributes are related to “protection and distribution of resources”, medium importance had attributes of “natural pureness and animal protection,” and “economic” attributes were least important. Even if this study does not align with the study of Hanss & Böhm (2011) and Grunert et al. (2014), it can be stated that the three main sustainability factors covered ethical and environmental sustainability factors. Therefore, this study gives an important direction on the consumers' preferences at the moment. Therefore, it is also important to consider

that the preferences for specific sustainability factors might differ for specific product categories.

When analyzing the preferences of the sustainability factors and the demographic factors, it was found that the importance of “animal welfare” is higher for female than male participants. The same results were found in a study by Cornish et al. (2020), where significantly more women were concerned about “animal welfare”. Another significance was found that the sustainability factor “FairTrade practices” is clearly preferred by participants with a University, University of Applied Sciences Degree. This aligns with the study of Taylor & Boasson where people where the participants with a higher degree show a significantly greater concern for “FairTrade practices” Therefore, the educational level could play an influence as the awareness of the importance of sustainability is raised at the University or University of Applied Sciences.

4.3 FORM OF PRESENTATION OF INFORMATION

The results of “In what form customers would like to be informed about sustainability on the product packaging” were significant. 90 of 154 participants (58%) chose “very likely” that they would like to have a sustainability score presented. For the regular label, 49 of 154 participants (32%) said that it is “very likely and “likely” that they would like this label. 46 of 154 participants (30%) chose “likely not” that they would like to have presented a “QR Code” and 35 of 154 participants (23%) said, “not at all”.

One reason for the high voting for the sustainability score could be that customers receive more information about the food product than on regular labels (Annunziata et al., 2019). All participants of this study are very interested in buying sustainable and appreciate receiving more information, which is provided in the sustainability score. During this study, the participants were asked to select between a regular label and a sustainability score. They selected the sustainability score as they wanted to have more information provided. Another observation of these results was that the participants wanted a label that was easy and fast to read. This factor might not be given when using the QR code.

Many steps are involved in finding out about the product's sustainability and reflecting that different participants have different needs. The study of van Loo (2015) found that the more consumers are interested in buying sustainable, the more information they want to see on the product packaging. That is an important finding as marketers can use that information to target specific customers.

4.4 WILLINGNESS TO PAY MORE FOR MORE SUSTAINABLE FOOD CHOICES

When looking at customers' willingness to pay more for more sustainable food choices, it can be seen that they indicate that they are willing to pay more. On average, the study participants were willing to pay 1,23 € more for a sustainably chocolate than the presented 1,50€ chocolate bar. These results align with the findings of Bastounis et al. (2021) that consumers are willing to pay more if they know that their food choice is more sustainable than others (Bastounis et al., 2021). This study also suggested that it is hard to generalize one food product category to others. This same result was found during this survey. Comments from participants revealed that chocolate has a specific reputation regarding sustainability and that some participants do not like to eat chocolate. As a result, it can be concluded that one product category cannot be compared to another and that it would be helpful to test the willingness to pay more for different products in different categories.

Nevertheless, this study showed that consumers are willing to spend significantly more for a bar of more sustainable chocolate.

4.5. RESEARCH AND METHODOLOGY REFLECTION

As a reflection of this research, it can be said that the planned amount of 385 participants was not reached to achieve a confidence level of 95%. Even though the survey was distributed on many social media channels and had an assertive to win one of two 25€ Amazon gift cards, the survey only reached 166 participants, which relates to a confidence level of 80%. Due to the time limitation, no more survey results could be collected. Another reason for the low

amount of participants could be that the people were not aware of the importance of the study. It could have been better to select a target group and reach out to this group more directly. As a result of this, it would help to create a clear text about the importance of contributing to this study and how the participant could help.

A limitation of the research was that 83% of the participants were female. Thereby, not the whole German population is represented. It could be that the high number of female participants does not reflect the overall picture of the survey. Next time, it would be better to set requirements that need to be met to fully reflect the population that should be observed during the survey.

A limitation that became visible during the survey was that some people could not clearly see the pictures shown during the survey. For instance, some participants reported that the picture of the sustainability score was too small when they were asked to select their preferred label between the regular label (FairTrade logo) and the sustainability score (Eaternity). As a result, they could not make clear decisions, as they were not able to see the full content of the sustainability score. That could have resulted in the participants being less likely to choose the picture they could not clearly see. That is a clear influence on my results as the participants were not able to make a conscious choice between two label options. The next time, all versions of the survey and pictures should be tested on multiple devices to ensure high-quality pictures on every survey device.

A limitation of evaluating the results was that the fifth and sixth survey questions did not seem clear to the participant. For example, it might have been unclear to them what “understandability” and “comparability” meant. This misunderstanding resulted in not clear survey answers. That can be seen when looking at the answers the participants gave for survey questions 6 and 8. Both answers were similar. This influenced the study results as both questions can not be clearly differentiated and answered. Next time, it is crucial to think through clearer about the questions asked in the survey. Also, when translating a survey from one language to another, it might be considered how specific questions are

understood in another language to ensure the exact meaning. One possibility to avoid misunderstandings could be to give precise definitions for specific words.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

This research aims to determine what kind of sustainability information on food packaging needs to be provided to support consumers in making more sustainable food buying decisions. This research was conducted with an online survey on social media, where 166 participants filled in the survey.

The research results show that most participants did not find the current sustainability information on food packaging understandable and comparable. Consumers would like to have more comparable options in the form of sustainability scores, standardized labelling or government-regulated labels. Some consumers prefer having a sustainability score to receive more information and compare different sustainability options. Other consumers prefer regular labels, as these are more familiar to them and support them by making faster buying decisions. If the consumers have a higher education, they prefer more information and would like to make more informed decisions. Hence, it is essential to combine both needs and create a label with high familiarity and clear sustainability factors.

The most important sustainability factors consumers would like to see on food packaging are "animal welfare", "FairTrade practices," and "water usage". There are differences in the preference of these factors regarding demographic factors. Female consumers prefer the sustainability factor "animal welfare" more than male consumers. Consumers with a higher degree have a higher preference for the sustainability factor "FairTrade practices".

There is a clear preference in what form consumers would like to have the information on the product packaging presented. Consumers clearly prefer a sustainability score as they would like to have more information provided quickly and conveniently. Regular labels provide them with known and clear information but do not help them to compare different options. A QR code is not convenient for consumers as it takes too much time to access sustainability data.

This research suggests that consumers are willing to pay more for a more sustainable chocolate bar. These results are not representative of other food

categories but clearly show the willingness to pay more for sustainable food when the consumers can clearly see the sustainable impact of their food choice.

To conclude, consumers do not feel supported by sustainability logos on food packaging in making sustainable food buying decisions. Sustainability scores could help provide consumers with clear and comparable information when buying food. The most important sustainability factors that should be presented are “animal welfare”, “FairTrade practices,” and “water usage”.

5.2 RECOMMENDATIONS

5.2.1 Short-Term Recommendation

Food Companies should implement sustainability scores on their food packaging or at least provide more information to the consumer and standardize the information. The cost of implementing this information can be reflected in the product price, as consumers are willing to pay more if the sustainable impact is clearly stated. The most important sustainability factors that they should provide are "animal welfare", "FairTrade practices," and "water usage". This information should be adjusted based on the product category and updated frequently.

Companies that are providing sustainability scores need to find a way to increase the popularity of their labelling, increase trust and familiarity to increase the incentives of all consumer groups to select and compare products with their label. For instance, they could partner with popular sustainable brands.

5.2.2 Long-Term Recommendations

Governments should support food companies and sustainability providers in taking action. Governments should make regulated standards for sustainability information on food packaging. Thereby, standardization of sustainability information can be forced. Furthermore, governments should support sustainability score providers with funds to do more research, collect sustainability data and do advisement campaigns to increase their popularity.

More research should be done on consumers' perception and selection of sustainable food choices to increase the number of people buying more

sustainable. Then, marketers can use this information to increase the motivation of consumers to buy more sustainably.

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APPENDIX 1: SURVEY ENGLISH

1. What is your gender?

- a. female
- b. male

2. How old are you?

- a. 18-25
- b. 26-35
- c. 36-50
- d. Older than 50

3. What is your highest education?

- a. University, University of Applied Sciences
- b. Vocational school, technical college
- c. High School degree
- d. secondary school certificate
- e. non

4. Is it important for you to buy sustainable food?

- a. very important
- b. important
- c. not important
- d. not important at all

5. Do you feel that the current information on the product label supports you in understanding what would be sustainable food choices?

- a. yes
- b. no

6. If no, which information are you missing at the moment to decide about sustainable food choices?

7. Do you feel that the current information on the product label supports you in comparing products and decide what would be the most sustainable food choice?

- a. yes

b. no

8. If no, which information are you missing at the moment to compare products on sustainability?

9. In the figure, you see the packaging of two chocolate bars. The Fair Trade logo is used on one bar, while on the other, a sustainability scoring is shown. **Which logo do you prefer when you need to make buying decisions related to sustainability?**

a. A

Why did you choose this option?

b. B

Why did you choose this option?



10. About which sustainability factors do you want to be informed via the product packaging?

a. *carbon footprint*

don't agree 1 – 2 – 3 – 4 – 5 completely agree

b. *water usage*

don't agree 1 – 2 – 3 – 4 – 5 completely agree

c. *animal welfare*

don't agree 1 – 2 – 3 – 4 – 5 completely agree

d. *rainforest protection*

don't agree 1 – 2 – 3 – 4 – 5 completely agree

- e. *Fairtrade practices* (fair prices for farmers, fair wages and education for people in developing countries)

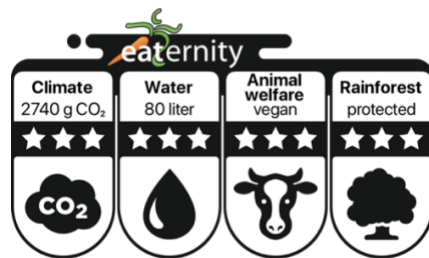
don't agree 1 – 2 – 3 – 4 – 5 completely agree

- f. *Contribution to the society in developing countries* (e.g. support infrastructure, financial support, education)

don't agree 1 – 2 – 3 – 4 – 5 completely agree

11. How would you like to be informed about the sustainability via the packaging?

- a. *Sustainability score rating* (makes different options comparable)



1. not at all
2. possibly not
3. maybe
4. likely
5. very likely

- b. *QR code to scan and find the information on the company website*



1. not at all
2. possibly not
3. maybe
4. likely
5. very likely

c. Logos or labels of certified organizations



1. not at all
2. possibly not
3. maybe
4. likely
5. very likely

12. In the figure, you see the packaging of two hazelnut chocolate bars with Eaternity Score. One bar has the category climate, animal welfare and rainforest protection with the highest Score, while the second bar has in each category the lowest sustainability scoring. The chocolate bar with the low sustainability score from Fin Carre costs 1,50€.

How much more would you pay for the more sustainable hazelnut chocolate bar (90g)?

- a. 0,00€
- b. 0,10€
- c. 0,50€
- d. 1,00€
- e. 1,50€
- f. 2,00€
- g. 2,50€



APPENDIX 2: SURVEY GERMAN

1. Was ist dein Geschlecht?

- a. weiblich
- b. männlich

2. Wie alt bist du?

- a. 18- 25
- b. 26-35
- c. 36-50
- d. 50 oder älter

3. Was ist dein höchster Bildungsabschluss?

- a. Universität, Hochschule
- b. Vocational school, technical college
- c. Abitur
- d. secondary school certificate
- e. kein Abschluss

4. Ist nachhaltige Ernährung wichtig für dich?

- a. sehr wichtig
- b. wichtig
- c. nicht wichtig
- d. überhaupt nicht wichtig

5. Findest du, dass die momentane Informationen auf der Produktverpackung dich unterstützt beim Verständnis das nachhaltigste Produkt zu kaufen?

- a. ja
- b. nein

6. Wenn nein, welche Informationen fehlen dir im Moment um nachhaltige Kaufentscheidungen zu machen?

7. Findest du, dass die momentane Information auf den Produktverpackungen dich unterstützt beim Vergleichen von

nachhaltigen Produkten und bei der Entscheidungen des nachhaltigsten Lebensmittel?

- a. ja
- b. nein

8. Wenn nein, welche Informationen fehlen dir im Moment, um die Produkte zu vergleichen?

9. Im Bild kannst du zwei Schokoladen Verpackungen sehen. Auf einem Riegel ist das FairTrade Logo abgebildet, während auf dem anderen die Nachhaltigkeit anhand von Punkten abgebildet ist.

Welches Logo bevorzugst du, um eine nachhaltige Kaufentscheidung zu treffen?



- a. A
Warum hast du diese Option ausgewählt?

- b. B
Warum hast du diese Option ausgewählt?

10. Über welchen Nachhaltigkeitsfaktor würdest du gerne auf der Produkt Verpackung informiert werden?

- a. *CO2 Fußabdruck*
stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu
- b. *Wasser Verbrauch*
stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu

c. *Tierschutzmaßnahmen*

stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu

d. *Regenwald Schutz*

stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu

e. *FairTrade Praktiken* (faire Preise für die Bauern, fairer Lohn für die Arbeiter und Bildung für die Menschen in Entwicklungsländern)

stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu

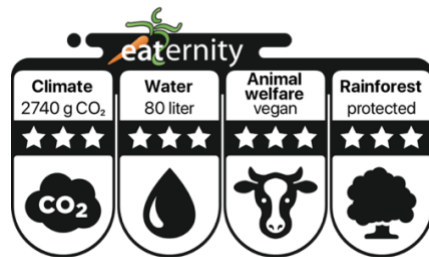
f. *Unterstützung von Menschen in Entwicklungsländern* (z.B. Infrastruktur, finanzielle Unterstützung, Bildung)

stimme überhaupt nicht zu 1 – 2 – 3 – 4 – 5 stimme komplett zu

11. Wie würdest du gerne über Nachhaltigkeit auf der Produkt

Verpackung informiert werden?

a. *Nachhaltigkeit Score (macht die verschiedenen Faktoren vergleichbar mit anderen Produkten)*



1. überhaupt nicht
2. wahrscheinlich nicht
3. vielleicht
4. wahrscheinlich
5. sehr wahrscheinlich

- b. QR Code der mit dem Smartphone gescannt werden kann und dann auf einer Webseite alle Nachhaltigkeit Themen anzeigt



1. überhaupt nicht
2. wahrscheinlich nicht
3. vielleicht
4. wahrscheinlich
5. sehr wahrscheinlich

- c. Reguläre Labels und Logos



1. überhaupt nicht
2. wahrscheinlich nicht
3. vielleicht
4. wahrscheinlich
5. sehr wahrscheinlich

12. Im Bild kannst du zwei Schokoladen Riegel mit Eaternity Score sehen. Ein Riegel hat in der Kategorie Klima, Tierschutz, und Regenwald Schutz die höchste Punktzahl, während der andere Riegel in jeder Kategorie die niedrigste Punktzahl hat. Die Schokolade mit dem niedrigen Nachhaltigkeitsstore von Fin Carre kostet 1,50€.

Wie viel mehr Geld würdest du für eine nachhaltigere Haselnuss Schokolade (90g) ausgeben?

- a. 0,00€
- b. 0,10€
- c. 0,50€
- d. 1,00€
- e. 1,50€
- f. 2,00€
- g. 2,50€



APPENDIX 3: STATISTICAL ANALYSIS IN SPSS

Preferred Label Analysis

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Preferred Label	154	100.0%	0	0.0%	154	100.0%
Age * Preferred Label	154	100.0%	0	0.0%	154	100.0%
Education * Preferred Label	154	100.0%	0	0.0%	154	100.0%

Gender * Preferred Label

Crosstab

Count

	Preferred Label		Total
	FairTrade Logo	Sustainability Score	
Gender female	56	71	127
male	7	20	27
Total	63	91	154

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.041 ^a	1	.081		

Continuity Correction ^s	2.335	1	.126		
Likelihood Ratio	3.183	1	.074		
Fisher's Exact Test				.089	.061
N of Valid Cases	154				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.05.

b. Computed only for a 2x2 table

Age * Preferred Label

Crosstab

Count

		Preferred Label		
		FairTrade Logo	Sustainability Score	Total
Age	18-25	13	18	31
	26-35	16	20	36
	36-50	16	29	45
	51 or older	18	24	42
Total		63	91	154

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	.799 ^a	3	.850
Likelihood Ratio	.806	3	.848
N of Valid Cases	154		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.68.

Education * Preferred Label

Crosstab

Count

		Preferred Label		
		FairTrade Logo	Sustainability Score	Total
Education	High School degree	9	20	29
	Secondary school certificate	10	14	24
	University, University of Applied Sciences	18	38	56
	Vocational school, technical college	26	19	45
Total		63	91	154

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	8.253 ^a	3	.041
Likelihood Ratio	8.226	3	.042
N of Valid Cases	154		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.82.

Preferred Sustainability factors

NPar Tests

Friedman Test

Ranks

	Mean Rank
CO2 footprint	3.35
water usage	3.62
animal welfare	4.00
rainforest protection	3.37
FairTrade practices	3.72
Supporting people in developing countries	2.94

Test Statistics

N	154
Chi-Square	53.774
df	5
Asymp. Sig.	<.001

a. Friedman Test

Gender * CO2 footprint

Crosstab

			CO2 footprint					
			1	2	3	4	5	Total
Gender	female	Count	12	3	25	24	63	127
		Expected Count	9.9	4.9	22.3	24.7	65.1	127.0
	male	Count	0	3	2	6	16	27
		Expected Count	2.1	1.1	4.7	5.3	13.9	27.0
Total	Count	12	6	27	30	79	154	
	Expected Count	12.0	6.0	27.0	30.0	79.0	154.0	

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	9.371 ^a	4	.052
Likelihood Ratio	10.767	4	.029
N of Valid Cases	154		

a. 4 cells (40.0%) have expected count less than 5.

The minimum expected count is 1.05.

Estimates

Dependent Variable	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CO2 footprint	female	3.969	.110	3.750	4.187
	male	4.296	.240	3.823	4.770

water usage	female	4.126	.105	3.919	4.333
	male	4.519	.228	4.069	4.968
animal welfare	female	4.425	.099	4.229	4.622
	male	4.333	.216	3.907	4.760
rainforest protection	female	4.016	.107	3.804	4.228
	male	4.333	.233	3.874	4.793
FairTrade practices	female	4.220	.108	4.007	4.434
	male	4.333	.235	3.870	4.797
Supporting people in developing countries	female	3.756	.117	3.524	3.988
	male	3.815	.254	3.312	4.317

Estimates

Dependent Variable	Age	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CO2 footprint	18-25	4.226	.224	3.784	4.668
	26-35	4.222	.208	3.812	4.633
	36-50	3.933	.186	3.566	4.300
	51 or older	3.810	.192	3.430	4.189
water usage	18-25	4.355	.214	3.931	4.778
	26-35	4.306	.199	3.913	4.699
	36-50	4.156	.178	3.804	4.507
	51 or older	4.024	.184	3.660	4.388
animal welfare	18-25	4.323	.201	3.925	4.720
	26-35	4.556	.187	4.187	4.924
	36-50	4.533	.167	4.204	4.863

	51 or older	4.214	.173	3.873	4.556
rainforest protection	18-25	3.903	.215	3.479	4.327
	26-35	4.500	.199	4.106	4.894
	36-50	4.067	.178	3.715	4.419
	51 or older	3.833	.184	3.469	4.198
FairTrade practices	18-25	4.000	.215	3.575	4.425
	26-35	4.639	.200	4.244	5.033
	36-50	4.333	.179	3.980	4.686
	51 or older	3.976	.185	3.611	4.341
Supporting people in developing countries	18-25	3.613	.238	3.142	4.084
	26-35	3.861	.221	3.424	4.298
	36-50	3.867	.198	3.476	4.257
	51 or older	3.690	.205	3.286	4.095

Estimates

Dependent Variable	Education	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CO2 footprint	High School degree	3.724	.224	3.281	4.167
	Secondary school certificate	3.500	.246	3.013	3.987
	University, University of Applied Sciences	4.446	.161	4.128	4.765
	Vocational school, technical college	3.978	.180	3.622	4.333

water usage	High School degree	4.172	.218	3.742	4.603
	Secondary school certificate	3.875	.240	3.401	4.349
	University, University of Applied Sciences	4.500	.157	4.190	4.810
	Vocational school, technical college	4.000	.175	3.654	4.346
animal welfare	High School degree	4.517	.207	4.108	4.926
	Secondary school certificate	4.000	.228	3.550	4.450
	University, University of Applied Sciences	4.446	.149	4.152	4.741
	Vocational school, technical college	4.511	.166	4.183	4.839
rainforest protection	High School degree	3.690	.221	3.253	4.127
	Secondary school certificate	3.708	.243	3.228	4.189
	University, University of Applied Sciences	4.286	.159	3.971	4.600
	Vocational school, technical college	4.244	.178	3.894	4.595
FairTrade practices	High School degree	4.069	.225	3.624	4.514
	Secondary school certificate	3.917	.247	3.428	4.405
	University, University of Applied Sciences	4.446	.162	4.126	4.766
	Vocational school, technical college	4.267	.181	3.910	4.624
	High School degree	3.759	.243	3.279	4.238

Supporting people in developing countries	Secondary school certificate	3.250	.267	2.723	3.777
	University, University of Applied Sciences	3.982	.175	3.637	4.327
	Vocational school, technical college	3.778	.195	3.393	4.163

Gender * water usage

Crosstab

		water usage					Total
		1	2	3	4	5	
Gender female	Count	10	5	14	28	70	127
	Expected Count	8.2	5.8	12.4	27.2	73.4	127.0
male	Count	0	2	1	5	19	27
	Expected Count	1.8	1.2	2.6	5.8	15.6	27.0
Total	Count	10	7	15	33	89	154
	Expected Count	10.0	7.0	15.0	33.0	89.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	4.966 ^a	4	.291
Likelihood Ratio	6.888	4	.142
N of Valid Cases	154		

a. 3 cells (30.0%) have expected count less than 5.
The minimum expected count is 1.23.

Gender * animal welfare

Crosstab

		animal welfare					Total
		1	2	3	4	5	
Gender female	Count	9	0	12	13	93	127
	Expected Count	8.2	.8	11.5	16.5	89.9	127.0
male	Count	1	1	2	7	16	27
	Expected Count	1.8	.2	2.5	3.5	19.1	27.0
Total	Count	10	1	14	20	109	154
	Expected Count	10.0	1.0	14.0	20.0	109.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	10.033 ^a	4	.040
Likelihood Ratio	8.172	4	.085
N of Valid Cases	154		

a. 5 cells (50.0%) have expected count less than 5.
The minimum expected count is .18.

Gender * rainforest protection

Crosstab

			rainforest protection					
			1	2	3	4	5	Total
Gender	female	Count	10	8	13	35	61	127
		Expected Count	9.1	6.6	14.0	33.8	63.5	127.0
	male	Count	1	0	4	6	16	27
		Expected Count	1.9	1.4	3.0	7.2	13.5	27.0
	Total	Count	11	8	17	41	77	154
		Expected Count	11.0	8.0	17.0	41.0	77.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	3.465 ^a	4	.483
Likelihood Ratio	4.896	4	.298
N of Valid Cases	154		

a. 3 cells (30.0%) have expected count less than 5.

The minimum expected count is 1.40.

Gender * FairTrade practices

Crosstab

		FairTrade practices					Total	
		1	2	3	4	5		
Gender	female	Count	12	2	9	27	77	127

	Expected Count	10.7	2.5	9.9	26.4	77.5	127.0
	Count	1	1	3	5	17	27
male	Expected Count	2.3	.5	2.1	5.6	16.5	27.0
	Count	13	3	12	32	94	154
Total	Expected Count	13.0	3.0	12.0	32.0	94.0	154.0
	Count						

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	1.952 ^a	4	.745
Likelihood Ratio	2.015	4	.733
N of Valid Cases	154		

a. 4 cells (40.0%) have expected count less than 5.

The minimum expected count is .53.

Gender * Supporting people in developing countries

Crosstab

		Supporting people in developing countries					Total
		1	2	3	4	5	
Gender female	Count	14	7	23	35	48	127
	Expected Count	12.4	9.9	23.9	29.7	51.1	127.0
male	Count	1	5	6	1	14	27

	Expected Count	2.6	2.1	5.1	6.3	10.9	27.0
Total	Count	15	12	29	36	62	154
	Expected Count	15.0	12.0	29.0	36.0	62.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	12.772 ^a	4	.012
Likelihood Ratio	14.390	4	.006
N of Valid Cases	154		

a. 2 cells (20.0%) have expected count less than 5.

The minimum expected count is 2.10.

Age * CO2 footprint

Crosstab

			CO2 footprint					Total
			1	2	3	4	5	
Age	18-25	Count	2	1	2	9	17	31
		Expected Count	2.4	1.2	5.4	6.0	15.9	31.0
	26-35	Count	2	1	5	7	21	36
		Expected Count	2.8	1.4	6.3	7.0	18.5	36.0
	36-50	Count	4	2	8	10	21	45
		Expected Count	4.0	2.0	8.0	10.0	21.0	45.0

	Expected Count	3.5	1.8	7.9	8.8	23.1	45.0
	Count	4	2	12	4	20	42
51 or older	Expected Count	3.3	1.6	7.4	8.2	21.5	42.0
	Count	12	6	27	30	79	154
Total	Expected Count	12.0	6.0	27.0	30.0	79.0	154.0
	Count						

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	10.650 ^a	12	.559
Likelihood Ratio	11.218	12	.510
N of Valid Cases	154		

a. 8 cells (40.0%) have expected count less than 5.

The minimum expected count is 1.21.

Age * water usage

Crosstab

			water usage					Total
			1	2	3	4	5	
Age	18-25	Count	2	0	1	10	18	31
		Expected Count	2.0	1.4	3.0	6.6	17.9	31.0
	26-35	Count	0	3	3	10	20	36
		Expected Count	0.0	2.5	2.5	8.8	13.8	36.0

	36-50	Expected Count	2.3	1.6	3.5	7.7	20.8	36.0
		Count	2	3	6	9	25	45
	51 or older	Expected Count	2.9	2.0	4.4	9.6	26.0	45.0
		Count	6	1	5	4	26	42
		Expected Count	2.7	1.9	4.1	9.0	24.3	42.0
		Count	10	7	15	33	89	154
Total	Expected Count	10.0	7.0	15.0	33.0	89.0	154.0	

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	17.590 ^a	12	.129
Likelihood Ratio	21.022	12	.050
N of Valid Cases	154		

a. 12 cells (60.0%) have expected count less than 5.

The minimum expected count is 1.41.

Age * animal welfare

Crosstab

			animal welfare					Total
			1	2	3	4	5	
Age	18-25	Count	2	0	4	5	20	31

	Expected Count	2.0	.2	2.8	4.0	21.9	31.0
	Count	1	0	4	4	27	36
26-35	Expected Count	2.3	.2	3.3	4.7	25.5	36.0
	Count	0	1	5	8	31	45
36-50	Expected Count	2.9	.3	4.1	5.8	31.9	45.0
	Count	7	0	1	3	31	42
51 or older	Expected Count	2.7	.3	3.8	5.5	29.7	42.0
	Count	10	1	14	20	109	154
Total	Expected Count	10.0	1.0	14.0	20.0	109.0	154.0
	Count						

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	18.316 ^a	12	.106
Likelihood Ratio	20.365	12	.060
N of Valid Cases	154		

- a. 14 cells (70.0%) have expected count less than 5.
The minimum expected count is .20.

Age * rainforest protection

			Crosstab					
			rainforest protection					
			1	2	3	4	5	Total
Age	18-25	Count	2	1	7	9	12	31
		Expected Count	2.2	1.6	3.4	8.3	15.5	31.0
	26-35	Count	0	0	1	16	19	36
		Expected Count	2.6	1.9	4.0	9.6	18.0	36.0
	36-50	Count	3	4	4	10	24	45
		Expected Count	3.2	2.3	5.0	12.0	22.5	45.0
	51 or older	Count	6	3	5	6	22	42
		Expected Count	3.0	2.2	4.6	11.2	21.0	42.0
Total	Count	11	8	17	41	77	154	
	Expected Count	11.0	8.0	17.0	41.0	77.0	154.0	

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	23.465 ^a	12	.024
Likelihood Ratio	26.963	12	.008
N of Valid Cases	154		

a. 12 cells (60.0%) have expected count less than 5.

The minimum expected count is 1.61.

Age * FairTrade practices

Crosstab

			FairTrade practices					Total
			1	2	3	4	5	
Age	18-25	Count	2	1	5	10	13	31
		Expected Count	2.6	.6	2.4	6.4	18.9	31.0
	26-35	Count	0	1	2	6	27	36
		Expected Count	3.0	.7	2.8	7.5	22.0	36.0
	36-50	Count	3	0	4	10	28	45
		Expected Count	3.8	.9	3.5	9.4	27.5	45.0
	51 or older	Count	8	1	1	6	26	42
		Expected Count	3.5	.8	3.3	8.7	25.6	42.0
	Total	Count	13	3	12	32	94	154
		Expected Count	13.0	3.0	12.0	32.0	94.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	21.072 ^a	12	.049
Likelihood Ratio	23.419	12	.024
N of Valid Cases	154		

a. 12 cells (60.0%) have expected count less than 5.

The minimum expected count is .60.

Age * Supporting people in developing countries

Crosstab

			Supporting people in developing countries					Total
			1	2	3	4	5	
Age	18-25	Count	2	3	8	10	8	31
		Expected Count	3.0	2.4	5.8	7.2	12.5	31.0
	26-35	Count	3	1	8	10	14	36
		Expected Count	3.5	2.8	6.8	8.4	14.5	36.0
	36-50	Count	3	5	7	10	20	45
		Expected Count	4.4	3.5	8.5	10.5	18.1	45.0

51 or older	Count	7	3	6	6	20	42
	Expected Count	4.1	3.3	7.9	9.8	16.9	42.0
Total	Count	15	12	29	36	62	154
	Expected Count	15.0	12.0	29.0	36.0	62.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	11.863 ^a	12	.457
Likelihood Ratio	12.178	12	.431
N of Valid Cases	154		

a. 8 cells (40.0%) have expected count less than 5.

The minimum expected count is 2.42.

Education * CO2 footprint

Crosstab

		CO2 footprint			
		1	2	3	4
High School degree	Count	3	3	4	8

Education	Secondary school certificate	Expected Count	2.3	1.1	5.1	5.6
		Count	4	1	7	3
	University, University of Applied Sciences	Expected Count	1.9	.9	4.2	4.7
		Count	2	0	6	11
	Vocational school, technical college	Expected Count	4.4	2.2	9.8	10.9
		Count	3	2	10	8
	Total	Expected Count	3.5	1.8	7.9	8.8
		Count	12	6	27	30
		Expected Count	12.0	6.0	27.0	30.0
		Count				

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	19.452 ^a	12	.078
Likelihood Ratio	20.235	12	.063
N of Valid Cases	154		

a. 10 cells (50.0%) have expected count less than 5.
The minimum expected count is .94.

Education * water usage

Crosstab

			water usage			
			1	2	3	4
Education	High School degree	Count	1	2	2	10
		Expected Count	1.9	1.3	2.8	6.2
	Secondary school certificate	Count	4	0	4	3
		Expected Count	1.6	1.1	2.3	5.1
	University, University of Applied Sciences	Count	1	1	4	13
		Expected Count	3.6	2.5	5.5	12.0
	Vocational school, technical college	Count	4	4	5	7
		Expected Count	2.9	2.0	4.4	9.6
	Total	Count	10	7	15	33
		Expected Count	10.0	7.0	15.0	33.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	17.914 ^a	12	.118
Likelihood Ratio	18.210	12	.109
N of Valid Cases	154		

a. 11 cells (55.0%) have expected count less than 5.

The minimum expected count is 1.09.

Education * animal welfare

Crosstab

			animal welfare			
			1	2	3	4
Education	High School degree	Count	0	1	4	3
		Expected Count	1.9	.2	2.6	3.8
	Secondary school certificate	Count	5	0	0	4
		Expected Count	1.6	.2	2.2	3.1
	University, University of Applied Sciences	Count	2	0	7	9
		Expected Count	3.6	.4	5.1	7.3
	Vocational school, technical college	Count	3	0	3	4
		Expected Count	2.9	.3	4.1	5.8
	Total	Count	10	1	14	20
		Expected Count	10.0	1.0	14.0	20.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	20.447 ^a	12	.059
Likelihood Ratio	20.752	12	.054
N of Valid Cases	154		

a. 13 cells (65.0%) have expected count less than 5.

The minimum expected count is .16.

Education * rainforest protection

Crosstab

			rainforest protection			
			1	2	3	4
Education	High School degree	Count	2	3	7	7
		Expected Count	2.1	1.5	3.2	7.7
	Secondary school certificate	Count	5	0	3	5
		Expected Count	1.7	1.2	2.6	6.4
	University, University of Applied Sciences	Count	0	3	4	23
		Expected Count	4.0	2.9	6.2	14.9

	Vocational school, technical college	Count	4	2	3	6
		Expected Count	3.2	2.3	5.0	12.0
Total		Count	11	8	17	41
		Expected Count	11.0	8.0	17.0	41.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	31.243 ^a	12	.002
Likelihood Ratio	33.079	12	<.001
N of Valid Cases	154		

a. 11 cells (55.0%) have expected count less than 5.

The minimum expected count is 1.25.

Education * FairTrade practices

Crosstab

		FairTrade practices			
		1	2	3	4
High School degree	Count	2	1	2	12

Education	Secondary school certificate	Expected Count	2.4	.6	2.3	6.0
		Count	5	0	2	2
	University, University of Applied Sciences	Expected Count	2.0	.5	1.9	5.0
		Count	1	1	5	14
	Vocational school, technical college	Expected Count	4.7	1.1	4.4	11.6
		Count	5	1	3	4
	Total	Expected Count	3.8	.9	3.5	9.4
		Count	13	3	12	32
		Expected Count	13.0	3.0	12.0	32.0
		Count				

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	22.664 ^a	12	.031
Likelihood Ratio	23.376	12	.025
N of Valid Cases	154		

a. 13 cells (65.0%) have expected count less than 5.

The minimum expected count is .47.

Education * Supporting people in developing countries

Crosstab

			Supporting people in developing countries			
			1	2	3	4
Education	High School degree	Count	1	3	7	9
		Expected Count	2.8	2.3	5.5	6.8
	Secondary school certificate	Count	6	1	6	3
		Expected Count	2.3	1.9	4.5	5.6
	University, University of Applied Sciences	Count	3	3	10	16
		Expected Count	5.5	4.4	10.5	13.1
	Vocational school, technical college	Count	5	5	6	8
		Expected Count	4.4	3.5	8.5	10.5
	Total	Count	15	12	29	36
		Expected Count	15.0	12.0	29.0	36.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	16.130 ^a	12	.185
Likelihood Ratio	15.267	12	.227
N of Valid Cases	154		

a. 8 cells (40.0%) have expected count less than 5.

The minimum expected count is 1.87.

Preferred Information Source

Crosstabs

Gender * Eaternity Score

Crosstab								
			Eaternity Score					
			likely	maybe	not at all	possibly not	very likely	Total
Gender	female	Count	34	13	1	4	75	127
		Expected Count	37.1	11.5	.8	3.3	74.2	127.0
	male	Count	11	1	0	0	15	27
		Expected Count	7.9	2.5	.2	.7	15.8	27.0
Total		Count	45	14	1	4	90	154
		Expected Count	45.0	14.0	1.0	4.0	90.0	154.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	3.642 ^a	4	.457
Likelihood Ratio	4.623	4	.328
N of Valid Cases	154		

a. 5 cells (50.0%) have expected count less than 5.

The minimum expected count is .18.

Gender * QR Code

Crosstab

			QR Code					
				likely	maybe	not at all	possibly not	very likely
Gender	female	Count	1	16	23	29	41	17
		Expected Count	.8	18.1	25.6	28.9	37.9	15.7
	male	Count	0	6	8	6	5	2
		Expected Count	.2	3.9	5.4	6.1	8.1	3.3
Total		Count	1	22	31	35	46	19

Expected Count	1.0	22.0	31.0	35.0	46.0	19.0
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Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	5.185 ^a	5	.394
Likelihood Ratio	5.313	5	.379
N of Valid Cases	154		

a. 4 cells (33.3%) have expected count less than 5.

The minimum expected count is .18.

Gender * Normale label

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	17.664 ^a	4	.001
Likelihood Ratio	13.701	4	.008
N of Valid Cases	154		

a. 2 cells (20.0%) have expected count less than 5.

The minimum expected count is 1.23.

Age * Eaternity Score

Crosstab

			Eaternity Score					Total
			likely	maybe	not at all	possibly not	very likely	
Age	18-25	Count	10	1	0	0	20	
		Expected Count	9.1	2.8	.2	.8	18.1	3
	26-35	Count	7	4	0	1	24	
		Expected Count	10.5	3.3	.2	.9	21.0	3
	36-50	Count	16	2	1	3	23	
		Expected Count	13.1	4.1	.3	1.2	26.3	4
	51 or older	Count	12	7	0	0	23	
		Expected Count	12.3	3.8	.3	1.1	24.5	4
Total		Count	45	14	1	4	90	1
		Expected Count	45.0	14.0	1.0	4.0	90.0	15

Chi-Square Tests

Value	df	Asymptotic significance (2-sided)

Pearson Chi-Square	15.269 ^a	12	.227
Likelihood Ratio	16.541	12	.168
N of Valid Cases	154		

a. 12 cells (60.0%) have expected count less than 5.

The minimum expected count is .20.

Age * QR Code

Crosstab

				QR Code				
				likely	maybe	not at all	possibly not	very likely
Age	18-25	Count	0	6	5	5	12	
		Expected Count	.2	4.4	6.2	7.0	9.3	
	26-35	Count	0	8	2	12	10	
		Expected Count	.2	5.1	7.2	8.2	10.8	
	36-50	Count	1	5	9	11	14	
		Expected Count	.3	6.4	9.1	10.2	13.4	
	51 or older	Count	0	3	15	7	10	
		Expected Count	.3	6.0	8.5	9.5	12.5	
Total	Count	1	22	31	35	46		
	Expected Count	1.0	22.0	31.0	35.0	46.0	1	

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	20.928 ^a	15	.139
Likelihood Ratio	21.485	15	.122
N of Valid Cases	154		

a. 7 cells (29.2%) have expected count less than 5.

The minimum expected count is .20.

Age * Normale Label

Crosstab

			Normale Label					Total
			likely	maybe	not at all	possibly not	very likely	
Age	18-25	Count	9	8	2	3	9	
		Expected Count	9.9	7.0	1.4	2.8	9.9	3
	26-35	Count	15	8	3	3	7	
		Expected Count	11.5	8.2	1.6	3.3	11.5	3
	36-50	Count	14	11	2	6	12	
		Expected Count	14.3	10.2	2.0	4.1	14.3	4
	51 or older	Count	11	8	0	2	21	
		Expected Count						

	Expected Count	13.4	9.5	1.9	3.8	13.4	4
Total	Count	49	35	7	14	49	1
	Expected Count	49.0	35.0	7.0	14.0	49.0	15

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	13.672 ^a	12	.322
Likelihood Ratio	14.990	12	.242
N of Valid Cases	154		

a. 8 cells (40.0%) have expected count less than 5.

The minimum expected count is 1.41.

Education * Eaternity Score

Crosstab

			Eaternity Score			
			likely	maybe	not at all	possibly not
Education	High School degree	Count	10	3	1	2
		Expected Count	8.5	2.6	.2	.8

	Secondary school certificate	Count	9	2	0	0
		Expected Count	7.0	2.2	.2	.6
	University, University of Applied Sciences	Count	13	3	0	0
		Expected Count	16.4	5.1	.4	1.5
	Vocational school, technical college	Count	13	6	0	2
		Expected Count	13.1	4.1	.3	1.2
Total		Count	45	14	1	4
		Expected Count	45.0	14.0	1.0	4.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	15.201 ^a	12	.231
Likelihood Ratio	15.559	12	.212
N of Valid Cases	154		

a. 11 cells (55.0%) have expected count less than 5.

The minimum expected count is .16.

Education * QR Code

Crosstab

		QR Code				
			likely	maybe	not at all	
Education	High School degree	Count	0	6	6	5
		Expected Count	.2	4.1	5.8	6.6
	Secondary school certificate	Count	0	2	5	6
		Expected Count	.2	3.4	4.8	5.5
	University, University of Applied Sciences	Count	1	9	9	12
		Expected Count	.4	8.0	11.3	12.7
	Vocational school, technical college	Count	0	5	11	12
		Expected Count	.3	6.4	9.1	10.2
	Total	Count	1	22	31	35
		Expected Count	1.0	22.0	31.0	35.0

Chi-Square Tests

Value	df	Asymptotic significance (2-sided)

Pearson Chi-Square	10.468 ^a	15	.789
Likelihood Ratio	10.388	15	.795
N of Valid Cases	154		

a. 9 cells (37.5%) have expected count less than 5.

The minimum expected count is .16.

Education * Normale Label

Crosstab

			Normale Label			
			likely	maybe	not at all	possibly not
Education	High School degree	Count	14	6	0	2
		Expected Count	9.2	6.6	1.3	2.6
	Secondary school certificate	Count	7	4	2	1
		Expected Count	7.6	5.5	1.1	2.2
	University, University of Applied Sciences	Count	20	12	2	8
		Expected Count	17.8	12.7	2.5	5.1
	Vocational school, technical college	Count	8	13	3	3
		Expected Count	14.3	10.2	2.0	4.1
	Total	Count	49	35	7	14
		Expected Count	49.0	35.0	7.0	14.0

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	15.230 ^a	12	.229
Likelihood Ratio	16.453	12	.171
N of Valid Cases	154		

a. 7 cells (35.0%) have expected count less than 5.

The minimum expected count is 1.09.