Determining the Different Factors That Predict Pro-Environmental Behaviour in Vegans, Vegetarians, and Omnivores.

Aline-Florentina Sinn (s2071339)

Faculty of Behavioural Management and Social Sciences (Psychology), University of Twente

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1st Supervisor: Mirjam Radstaak

2nd Supervisor: Iris Klooster

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Abstract

Background: As the climate is changing, pro-environmental behaviour becomes more urgent and apparent. Previous research showed that there are different ways to engage in a more sustainable lifestyle. Kollmuss & Agyeman (2002) defined pro-environmental behaviour as seeking to minimize the negative impact of one's actions on the natural and built world. This paper sheds light on one specific behaviour, namely choice of diet (vegan, vegetarian, omnivore) as well as on general pro-environmental behaviour. Besides, the choice of diet is used as an indication of the willingness to protect the animal welfare. Moreover, Stern (2000) indicated that there are several underlying values, which have an influence on someone's willingness to invest into the environment.

Aim of the study: Thus, this study aimed to investigate different pro-environmental behaviours and their underlying values regarding the different diet groups. The focus was to estimate whether vegans show significantly different intentions, values and general pro-environmental behaviour compared to vegetarians and omnivores. Moreover, the present study focuses on the interaction between someone's values and their actual behaviour, by assessing whether their choice of diet has an effect on this interaction by assessing it for each diet separately. For this, several one-way ANOVAs were conducted as well as a mediator analysis and a coding for the different intentions.

Results and Discussion: Vegans in this study portrayed a high concern about the animal welfare (80%), closely followed by vegetarians (57.89%). Additionally, a meat-free diet has a positive effect on the interaction between someone's values and their general pro-environmental behaviour ($F(3, 113)= 10.19$, $p< .05$ predicting $R^2= 16{,}79\%$ of the variance [$b= .68$, *95% CI*(-.42; 1.58)]). However, contradicting to previous research, the results did not suggest significant differences ($p > 0.05$) in the underlying values between the three diet groups and vegetarians tend to act the most pro-environmentally in general ($F(2, 114)= 14.74$, $p< .05$), which was against the expectations of this study. Altogether this study, provided more insight into understanding the intentions and values behind someone's pro-environmental behaviour.

Keywords: pro-environmental behaviour, pro-environmental values, veganism, vegetarianism, omnivores

Determining the Different Factors That Predict Pro-Environmental Behaviour in Vegans, Vegetarians, and Omnivores.

Pro-environmental behaviour becomes more important and urgent throughout the 21st century, since past human behaviour has had an enormous negative impact on the environment (Steg et al., 2014). This negative effect resulted in climate change and global warming. Accordingly, researchers found evidence that the rapid increase in carbon dioxide (CO2) is the main cause for climate change, especially since it had a growth of more than 40% (Oppenheimer & Anttila-Hughes, 2016; Morison & Lawlor, 1999).

However, the past attempts of pro-environmental behaviour are not sufficient, since the human-produced effects on the environment have gotten worse (Ogunbode et al., 2019). In fact, people nowadays live in a high-consumption society, which increases the environmental damage (Gatersleben, 2012), due to an increased CO2 emission. Thus, it is of interest to investigate the different pro-environmental behaviours and underlying pro-environmental values of different people, especially in regard to their diet.

Factors for rising CO2 emissions

Due to this ever-rising consumerism, car-traffic and air-traffic have been increasing to import and export products as much and fast as possible (Amizadeh et al., 2016). Additionally, the number of people, who own and use cars, is rising compared to just a few years ago (Reckien et al., 2007). Furthermore, because of the expansion of the car industry and the heightened consumption-demand, a high quantity of cars is produced and driven. In specific, 20% of the world's energy consumption is attributed to traffic (Reckien et al., 2007). As a result, the amount of carbon dioxide emitted is greater than the environment can process and convert (MacCracken, 2008). Moreover, many products are imported and exported, as Western countries are relocating most of their production to the Far East (Asia) (Scholte, 2008). This is one reason for a rise in air travel, which leads to extreme quantities of CO2 (Amizadeh et al., 2016; Schlatzer, 2011; Lee et al., 2010). To conclude, the CO2 emissions caused by increased demand for transportation are an essential contributor to climate change.

Another factor that increases car- and air-traffic, and therefore increases carbon dioxide emissions, are mass livestock farms. The emissions are enormously higher than in the transport sector, so it must be acknowledged that livestock farming has a greater impact on climate change (Arena et al. 2010). Furthermore, mass livestock farming contributes to 80% of total greenhouse gas emissions (GHGE) to climate change and its adverse consequences (Schlatzer, 2011). The growth of the mass livestock farm sector is due to the great demand for meat and cheap animal products. In fact, there are 24 billion living farm livestock in the

world, which is three times as many animals as people (Schlatzer, 2011). Additionally, Schlatzer (2011) describes the problem as being: "More than 66 billion animals are slaughtered in one year. Our livestock take up most of the available land, require a good portion of our fresh water and are clearly responsible for ongoing deforestation and species loss". The more livestock exist, the more feed must be produced, which has to be cultivated. For this plantation, several hectares of rainforest are being burned down (Pendrill et al., 2019). This deforestation causes 6-8 billion tons of carbon, half of which remains in the atmosphere (Fritsche, 2008). The deforestation is another contributing factor that has a significant negative impact on the environment.

Regarding the increased transport, demand for animal products, and deforestation, neoliberal political economy of western society, concentrate their policy responses on this negative impact by focusing on the individual and thus, exemplifying that every human needs to change their behaviour to protect the environment (Revell, 2013). Meaning, that each and every person needs to adapt their behaviour into a more pro-environmentally friendly one. To conclude, the rise of the car- and air-traffic is of great importance due to its high amount of CO2 emissions. However, the focus lays on general pro-environmental behaviour and specific pro-environmental behaviour, namely deciding to engage in a sustainable diet.

Change of diet: a step towards pro-environmental behaviour

As the concern of behaving more pro-environmentally is on a rise, more and more people decide to change their diet into a rather plant-based one as a step toward a pro-environmental friendlier behaviour. Thus, becoming vegan has many advantages for the environment and for the movement against climate change. The first benefit is that less products must be imported (Martin & Brandão, 2017) as meat, and especially feed for farm animals, often are flown in (Erb et al., 2016). As a result, there is a decrease in transportation by road and air, which results in less CO2 and GHGEs. Thus, veganism is the best option to reduce mass livestock production and deforestation and to become more pro-environmentally engaged.

Fortunately, over the past decades, meat-free diets, such as veganism and vegetarianism, have increased across the globe, with estimated 600.000 vegans and 6.7 million vegetarians in the UK (McKeown & Dunn, 2021). The numbers of vegans and vegetarians are growing because it is nowadays easier to become vegan due to the production of more alternative plant-based products and they experience more positive attitudes towards them (Horta, 2018). Veganism is the most extreme version of the meat-free diet, due to the fact that vegans voluntarily waive not only meat but also eggs, diary, leather, gelatine and

other animal-based products. Furthermore, vegans are keen about only buying materials, such as make-up, which were certified as being produced in a cruelty-free manner (Francione, 2009). The usage of animal-free alternatives benefits animals, humans, and the environment (Vegan Society, n.d.). In contrast, vegetarians only refuse to consume meat, whereas omnivore people consume all animal products. Vegetarianism has positive effects on the environment as well because less livestock animals must suffer on mass farms and slaughtered. This affects the climate change similarly to being vegan.

Nonetheless, becoming vegan or vegetarian is not sufficient to stop global warming. Thus, every single person needs to adjust their daily behaviour by engaging in several pro-environmentally friendly actions.

Pro-environmental behaviour

Stern (2000) defined pro-environmental behaviour in two ways, namely as behaving either impact-oriented or intent-oriented. Stern (2000) stated, regarding the intent-oriented behaviour, that pro-environmental behaviour can be defined from the individual standpoint as "behaviour that is undertaken with the intention to change (normally, to benefit) the environment". Furthermore, it was addressed that environmental intent is seen as an independent cause of behaviour and thus, this individual intent offers the possibility to fail to result in a positive environmental impact (Stern, 2000). However, having the right intention and behaving pro-environmentally in some domains of one life, is already a greater contribution to the fight against climate change than doing nothing. Additional, Stern (2000) defined impact-oriented behaviour as "the extent to which it changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere itself". As an example, Stern (2000) stated that the clearing forests has a direct effect on environmental change and thus, is an impact-oriented behaviour.

There are several ways to engage in pro-environmental behaviour, which can be integrated to one's everyday life. Kollmuss & Agyeman (2002) defined pro-environmental behaviour as "behaviour that seeks to minimize the negative impact of one's actions on the natural and built world (e.g., minimize resource and energy consumption, use non-toxic substances, reduce waste production)" (p. 240). Additionally, Stern (2000) gave an example of four types of environmental behaviour, namely 'environmental activism', 'nonactivist behaviours in the public sphere', 'private-sphere environmentalism', and 'other environmentally significant behaviours. As this research, mainly focuses on the individual and their daily life, only the 'private-sphere environmentalism' and 'other environmentally significant behaviours' will be considered. 'Private-sphere environmentalism' is defined as

having different determinants and having direct environmental consequences, whereas 'other environmentally significant behaviours' are defined, for instance an individual significantly affecting the environment through other behaviours, such as influencing the actions of organizations (Stern, 2000). Table 1 provides some examples of private pro-environmental behaviours. This overview of some of the behaviours is in line with the focus and the survey of this study.

Table 1

Examples of pro-environmental behaviour

Cut off on heating or air conditioning to limit energy use
Limit shower time to conserve water
Turn off lights when leaving a room
Watching movies about environmental issues
Talking about environmental issues with others
Decrease meat consumption
Using Public transportation

The behaviours mentioned in table 1 are categorized as general pro-environmental behaviour (PEB) (Stern, 2000) in this study for a better understanding.

Aside from general pro-environmental behaviour, different diets can also be classified as environmentally friendly to a different extent. As livestock production is the cause for serious challenges for improving the climate change, a change in one's diet is another way to improve one's pro-environmental behaviour. Accordingly, becoming vegan or vegetarian is seen as beneficial for the environment. Thus, Chai et al. (2019) defined a sustainable diet as "one with production that has little environmental impact, is protective and respectful of biodiversity and of ecosystems, and is nutritionally adequate, safe, healthy, culturally acceptable and economically affordable" (p. 1). Furthermore, Sabate and Soret (2014) stated several important reasons in favour of a sustainable diet, in this case plant based. These two researchers found that the production of animal protein takes up 11% more fossil energy than being required for a plan-based protein production (Sabate & Soret, 2014). In addition, they found out a vegan diet reduces 48% of the agriculture and 34% of the overall greenhouse gas emission (GHGE) regarding the food system (Sabate & Soret, 2014). Overall, sustainable dietary patterns, such as veganism and vegetarianism, deliver environmental benefits due to partial replacement of animal products with plant-based foods (Aleksandrowicz et al., 2016).

Various researchers found evidence that deforestation can be avoided, and that meat is not a biophysical necessity to feed the increasing world population (Erb et al., 2016; Theurl et al., 2020). Erb et al. (2016) stated that human diets, in specific omnivore diets, turn out to be the strongest indicators of the biophysical option space. This means, that humans need this option space and thus, burn down hectors of forests to extend their livestock farming. Therefore, Erb et al. (2016) found out that "a vegan or vegetarian diet is associated with only half of the cropland demand, grazing intensity and overall biomass harvest of comparable meat-based diets" (p. 5). The choice of diet as well as the PEB's are central to this study because they both contribute to becoming more pro-environmentally involved to protect the environment. Becoming vegan or vegetarian is an intent-oriented behaviour, which takes place in one's private-sphere, but also an impact-oriented behaviour as it has a direct effect on the environment. However, not all vegans or vegetarians have the same intentions behind their diet and pro-environmental behaviour. Moreover, omnivores might behave pro-environmental as well despite of their meat-consumption. Gatersleben et al. (2012) and Stern (2000) both stated that the beliefs, motives, and values of individuals must be considered when trying to understand the variables that affect pro-environmental behaviours.

Underlying values of pro-environmental behaviour

In accordance to having different values, scientists have found evidence that people have different levels of awareness of the causes and consequences of their behaviour in relation to the environment (Gifford & Nilsson, 2014; Preisendörfer, 1999; Vincent-Molina et al., 2013). Therefore, Steg et al. (2011) made a distinction between the values, worldview, and environmental concerns of individuals. By doing this, they found out that beliefs, which are closely linked to behaviour, influence the reflection on opinions, evaluations, and norms regarding environmental behaviour, thus people may feel guilty if they do not satisfy their personal norms when not acting pro-environmentally. It is important to take the various values into consideration because these shed a light on the reason why not everyone behaves in the same way toward the environment. Thus, Steg et al. (2011) stated three value orientations that underly the intentions of such people, namely an egoistic, an altruistic, and a biosphere value orientation.

Stern (2000) has shed light on the different values as well by stating that "values […] that focus concern beyond a person's immediate social circle (values called self-transcendent or altruistic) are stronger among people who engage in pro-environmental activities" (p.411). Accordingly, Schwartz (2003) examined that altruistic behaviour is in line with someone's personal moral norms, which result in the person being aware of consequences. Regarding

pro-environmental behaviour, people possessing this value are more prone to be aware of the severe climate change consequences due to their and their peer's behaviour. In addition, Hansla et al. (2008) also stated that, people are most likely to engage in pro-environmental behaviour if they feel threatened by the environmental problems, and if they feel like experiencing harmful consequences for egoistic, social-altruistic, or biosphere values. As it can be seen, several researchers have conducted studies to examine which factors influence someone's pro-environmental behaviour, using different value systems to explain and predict these behaviours. Despite of these past research, there are not many studies that laid their focus on estimating the differences between vegans, vegetarians, and omnivores in regard to behaving pro-environmentally.

Gaps in Research

Although several previous studies have researched pro-environmental behaviour, the underlying values, and different diet groups, there are still a few gaps in knowledge. Research often focused on the underlying values without attributing them to certain diets, thus insights about the difference between vegans, vegetarians, and omnivores regarding these values are missing. Furthermore, it is still not completely researched why certain people act more pro-environmental than others and whether this distinction can be tracked back to someone's choice of diet. Hansla et al. (2008) found out that people act more pro-environmentally if they feel threaten by environmental problems, however this does not indicate whether vegans, vegetarians, and omnivores show the same amount of concern and threat.

Further, some previous studies (Souza et al., 2020) found out that omnivores possess similar underlying pro-environmental values as vegans, but do not live by these values. Accordingly, Krizanova et al. (2021) stated that veganism and higher values of pro-environmental behaviour are connected. Due to this, the present study will expand this previous research by assessing whether pro-environmental values influence someone's general pro-environmental behaviour and whether a vegan, vegetarian, or omnivore diet affects this interaction. Furthermore, research showed that veganism is already a great contribution against climate change, nonetheless insight about general pro-environmental behaviour despite being vegan, is still lacking.

Present study

The present study aims at examining whether vegans hold different values and reasons for their pro-environmental behaviour compared to vegetarians and omnivores and whether vegans act more pro-environmental in general. It is of interest if vegans, since their diet is already considered as one of the biggest contributors for acting against climate change,

can be categorized as having significantly different pro-environmental values and behaviour patterns compared to the other two diet groups. Accordingly, people who chose a plant-based diet already portray a high concern for the environment since refusing to consume meat reflects the willingness to invest effort into protecting the environment. Thus, the participants choice of diet, intention behind it, their underlying values, as well as general pro-environmental behaviour will be assessed and correlated. In line with this objective, the following research question is formulated:

RQ: To what extent do vegans hold different reasons for their pro-environmental behaviours compared to vegetarians and omnivores and do they behave more pro-environmentally in general than the other two diet groups?

It is expected that vegans not only have a higher desire to protect the animal welfare, but also that they show significant differences in their underlying values and general pro-environmental behaviour. Furthermore, it is expected that the underlying values of the participants influence their general pro-environmental behaviour, which can be explained by their choice of diet. Meaning that each diet displays a different interaction effect between the someone's values and their pro-environmental behaviour with vegans showing the highest positive effect. To be more concrete, the following hypotheses are formulated:

Hypothesis 1: Vegans have an even stronger desire to protect the animal welfare compared to vegetarians and omnivores.

Hypothesis 2: There are significant differences between the scores on the pro-environmental value questionnaire between the three diet groups

Hypothesis 3: Different diets affect the interaction between someones underlying pro-environmental values and general pro-environmental behaviour, with vegans displaying the highest effect on this interaction.

Hypothesis 4: Vegans act more pro-environmentally in many domains of their daily life, not only regarding their diet, (e.g., using more public transportation) compared to omnivores and vegetarians.

Methods

To assess the research question, and thus the hypotheses, an online survey was conducted. The survey used for this research can be found in appendix A. Furthermore, a non-probability sampling was used, in specific the voluntary response sampling method.

Participants

To be included in the study, the participants had to be older than 18 years and needed to possess advanced English reading and writing skills. In total, 174 individuals participated in the online study, however 54 people must be extracted from the data due to missing answers and thus, missing data points. The remaining 117 participants consisted of 81 females (69.23%) and 26 males (22.22%). 96 Germans (82.05% 13 Dutch (11.11%), (82.05%), and 8 people from other countries (6.84%), which were not specified, took part in the survey. The age of the individuals ranged from 18 to 84 with a mean of 27.36 (SD= 13.51). 69.2 % achieved a Highschool degree, 12.8% received a bachelor's degree, 11.1% a Master's Degree, 4.3 % participated in vocational training, 1.7% had a doctorate, and .9% had a different level of education, which was not specified further. Furthermore, 10 people indicated that they were vegan (8.55%), 38 that they were vegetarians (32.48%), and 69 that they were omnivores (58.97%).

Procedure and Design

At first, the study at hand was approved by the Ethics Committee BMS / Domain Humanities and Social Sciences of the University of Twente. The survey was uploaded on the platform "SONA Systems", which is a platform provided by the University of Twente. Bachelor and Master students can upload their studies on this platform to reach other students who will participate in their studies. Every student who filled in the survey via "SONA Systems" received 0.25 credit points. Another way participants were reached was by individual acquirement through the researcher, for example via social media. The survey had a duration of approximately 20 minutes. After the general participants information and informed consent (Appendix A) as read through and agreed on, a few demographic questions were asked (age, sex, nationality, degree, diet). Afterwards, the participants had to indicate their intentions behind their preferred diet, in form of an open-question, and had to filled out the Pro-environmental value questionnaire (Bronfman, et al., 2015) as well as the Pro-environmental behaviour (PEB) questionnaire (Stern et al., 2000). All used materials were provided in English. The duration of the data collection consisted of 23 days, from the 11th of April until the 3rd of May.

This study was a between-group design with a cross-sectional design, since the purpose was to indicate the differences between three diet groups (*vegans, vegetarians, omnivores*).

Measurements

The questionnaire (Appendix A) was designed and distributed by using Qualtrics. The first section of the questionnaire measured the demographics of each person as well as the

intentions of every person behind their preferred diet. The intentions were measured by an open-question: “What are your intentions behind your diet? Please give a brief answer”. The overall reliability of the whole questionnaire was measured with Cronbach’s alpha and contains α= .85.

Pro-environmental values. The second section measured the values discussed in the introduction with several multi-items on a seven-point Likert-scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). The items were taken from previous researched and altered, i.e., the original statement ‘A person who believes that everyone must look after the environment’ was altered into ‘I am a person who believes that everyone must look after the environment’, to make it more personal. In this study the same constructs were used as in the original study by Bronfman et al. (2015). Next, each construct is briefly presented with the content, the number of used items, some examples, and the reliability of each construct.

Biospheric Values

The ‘Biospheric Values’ construct measured the values regarding the biosphere and to which extent each individual possess them. This construct was measured with two items. An example of an item is: “I am a person who believe that everyone must look after the environment”. The reliability was measured by using Spearman-Brown Coefficient and it consisted of *r*=.56.

Altruistic Values

This construct consists of two items, e.g.: “I am a person who believes it is important to help others around them”, which measure how altruistic the participant is. The reliability consisted of *r*=.52, by estimating the Spearman-Brown Coefficient.

Egoistic Values

This construct contained three items to measure whether a person does possess egoistic values and to which degree. An example of an item is: “I am person who makes decisions and likes to be a leader”. The Cronbach’s alpha of these items (α=.28) is below the cut-off point (.7), however deleting one or two items would have not improved the Cronbach’s alpha. That is why, all three items were still included.

Ecological Values

Ecological Values is a construct, which contains ten items to measure how ecological a person is (α= .72). An example of one of the items is: “In recent times, the human population has grown at a faster rate than the planet can support”.

Awareness of Consequences

This construct, which consists of six items (α= .80), measures whether the participant is aware of the consequences of their actions regarding the environment and thus, climate change. For instance, "In the next 10 years, thousands of animal and plant species will go extinct".

Ascription of Responsibility

The original questionnaire contained of six questions for this measure, however due to the low Cronbach's alpha (α=.31) three items were excluded. Thus, this construct contains three items for the analysis (α= .78), e.g. "My household is responsible for reducing environmental degradation', and 'All households are responsible for reducing environmental degradation". This construct measures whether the participant feels responsible for their actions and the protection of the environment.

Personal Norms

Respondents were asked to answer five items, such as "I have a moral obligation to protect the environment" to assess whether pro-environmental behaviour belongs to their personal norms. The reliability of this construct consists of α=.82.

Pro-environmental behaviour (PEB). The second questionnaire (Appendix A) was derived from Stern et al. (2000). There were some mistakes at the beginning on the side of the researcher, since the researcher did not add every item to the survey right from the beginning, and only added the remaining items after a while. Therefore, the not all participants were able to answer the whole questionnaire. By reason of this, eleven items had to be extracted from the data. The remaining eight items (α=.49) were eliminated to seven items (α=.56) because the cut-off point of the Cronbach's alpha consists of .7 or above, which means that the internal consistency reliability would be acceptable. However, after several analysis, deleting more items would not have raised the Cronbach's alpha of the PEB and thus, did not increase the internal consistency reliability. The researcher chose to use seven items because the Cronbach's alpha was still higher than of the eight even though the cut-off point could not be reached. That is why, the results for this PEB must be analysed from a critical viewpoint. The seven items measured general pro-environmental behaviour. An example of one of the items: "How often do you cut off on heating or air conditioning to limit energy use?". The first 6 questions were measured with a 5 point-Likert scale ranging from 'Never' (1) to Constantly (5), the last question was measured with a 3 point-Likert scale.

Diet intention. The first question, which the participants had to answer, was an open question. To measure the different intentions and to compare them with each other, they were categorized into eight sub-categories, namely *Animal Welfare, Health, Environment,*

Convenience, Balanced diet/nutrition, weight lose/no weight gain, Taste, and *Others*. At the end of the questionnaire, the participants were asked if they ever would consider changing their diet and if so, why they would do so. This question is another indication about someone's pro-environmental behaviour due to the fact that staying omnivore is also a decision against becoming more environmentally friendly involved.

Data Analysis

The data was analysed in SPSS. First, the dataset has been prepared by deleting missing values of people who did not finish the answers and recoding necessary items.

Then the descriptive statistics were analysed and reported for the demographics, intentions behind each diet, and each value. Descriptives (*M* and *SD*) for the dependent variables, namely vegans, vegetarian, omnivore, and total, were computed with the independent variables being: Biospheric Values, Altruistic Values, Egoistic Values, Ecological Values, Awareness of Consequences, Ascription of Responsibility, Personal Norms, and PEB. After that step, descriptives for each type of diet separately (*Biospheric Values, Altruistic Values, Egoistic Values, Ecological Values, Awareness of consequences, Ascription of Responsibility, and Personal Norms, PEB*) were calculated

Internal Consistency Analysis. The internal consistency of each scale was checked by either analysing the Cronbach's alpha or the Spearman-Brown-coefficient. The suggested value for an acceptable consistent scale is anything above .7 for Cronbach's alpha. The Spearman-Brown-coefficient was used if a scale consisted of only two items, and had a cut-off point of .5, which means that anything above this point would show that the scale has a moderate to very strong consistency.

For *Hypothesis 1,* whether vegans have a stronger desire to protect the animal welfare in comparison to vegetarians and omnivores, the open question regarding one's diet choice and one's intention behind it were analysed inductively. Frist, a frequency table was designed and afterwards the researcher allocated the answers into eight categories (*Animal Welfare, Health, Environment, Convenience, Balanced diet/nutrition, weight lose/no weight gain, Taste, and Others*.) These categories were made by the researcher, who coded them manually into the eight distinct categories. An inductive coding approach was used to do so. Afterwards, the distribution of each category, per diet, was estimated by calculating the percentages.

For *Hypothesis 2,* a one-way ANOVA, as well as a post-hoc, were conducted to estimate whether vegans, vegetarians, and omnivores score significantly different on the Pro-environmental value scale. The Variable diet, which contains of vegan, vegetarian, and

omnivore, is the independent variable with the Pro-environmental value scale being the dependent variable.

For *Hypothesis 3* two moderation analyses were conducted. Thus, it was assessed whether the underlying values (*Biospheric Values, Altruistic Values, Egoistic Values, Ecological Values, Awareness of consequences, Ascription of Responsibility, and Personal Norms)* influence the general pro-environmental behaviour, which is being measured with the PEB. Furthermore, it was assessed whether the score of the PEB was only influenced by the values or if the diets have an effect on the interaction between the values and the PEB. This effect was tested for each diet group as well as the total variable 'diet' containing all three diets to estimate if there are significant differences between them and if the above-mentioned values have a greater effect on PEB with vegans as the moderator in comparison to the two other diet groups. Therefore, the diet groups were giving different scores: vegan = 1, vegetarians =2, and omnivores =3. To run the moderation analyses, the program Process by Hayes had to be added to SPSS and model 1 had to be chosen. The Pro-environmental values were used as the independent variable, the PEB as the dependent variable, and the coded 'diet' as the moderator. Beforehand, it needed to be checked if the model was significant, with *p*- values <.05.

For *Hypothesis 4,* a one-way ANOVA was used to measure whether vegans act more pro-environmentally in general compared to omnivores and vegetarians. Thus, the ANOVA was used to compare the means of the PEB of the three diet groups and afterwards, a post-hoc (Tukey HSD) was conducted to estimate whether these differences are significant.

Results

To analyse the above-mentioned measurements, the next paragraph presents the results of each analysis, starting with the descriptive statistics and then displaying the results of each hypothesis.

Descriptive Statistics

Table 2 shows the descriptive statistics of each variable, in specific the means and standard deviations regarding each diet and the total score. This table serves as a display to directly compare the means for each variable between the three diet groups. It can clearly be seen that vegans and vegetarians mainly score higher on the values than omnivore people, except for the variables egoistic and ecological values.

Table 2

Descriptives of vegans (n=10), vegetarians (n=38), omnivores (n=69), and totals (N=117)

	Vegan *Mean (Std. Deviation)*	Vegetarian *Mean (Std. Deviation)*	Omnivore *Mean (Std. Deviation)*	Total *Mean (Std. Deviation)*
Biospheric Values	6.20	6.41	5.94	6.12
	(.95)	(.53)	(.83)	(.78)
Altruistic Values	6.55	6.34	6.14	6.24
	(.69)	(.63)	(.77)	(.73)
Egoistic Values	3.27	3.27	3.69	3.52
	(1.00)	(1.09)	(1.26)	(1.20)
Ecological Values	4.31	4.34	4.34	4.34
	(.24)	(.39)	(.43)	(.40)
Awareness of Consequences	6.28	6.05	5.73	5.88
	(.74)	(.82)	(.81)	(.83)
Ascription of responsibility	5.13	5.04	5.05	5.06
	(.40)	(.52)	(.55)	(.53)
Personal Norms	6.70	6.46	6.01	6.22
	(.35)	(.52)	(.77)	(.71)
PEB	3.44	3.47	3.02	3.20
	(.41)	(.40)	(.45)	(.48)
N	10	38	69	117

Table 3 shows the categories, which were coded by the researcher, of the intentions behind each diet. Eight categories were established and the answer of each vegan, vegetarian, and omnivore was distributed to one of these categories. As it can be seen, there are only 10 vegans, however the total score of their answer distribution to the categories is 20. This is due to the fact, that some people indicate more than one reason for their diet, thus their answers were split into more than one category. An example for this is: “1. Animal welfare, 2. Environment, 3. Health”. Furthermore, the percentages of each category per diet are displayed for a better comparison between the diet groups.

Table 3

Intentions behind veganism (n=10), vegetarianism (n=38), and being omnivore (n=69)

	Vegan	Vegetarian	Omnivore
Animal welfare	8 (80%)	22 (57.89%)	-
Health	3 (30%)	8 (21.05%)	22 (31.88%)
Environment	8 (80%)	22 (57.89%)	6 (8.70%)
Convenience	-	-	12 (17.39%)
Balanced diet/ nutrition	-	-	16 (23.19%)
Weight lose/ no weight gain	-	-	3 (4.35%)
Taste	-	-	15 (21.74%)
Others	1 (10%)	7 (18.42%)	12 (17.39%)

Table 4 displays the answer options of the last open question regarding whether the individuals consider changing their diet. The table shows the answer scores, as well as the percentage, for each diet group and the total score.

Table 4

Considerations of changing one's diet and reasons

	Yes	No	Total
Vegan	1 (10%)	9 (90%)	10
Vegetarian	4	34	38

	(10.53%)	(89.47%)	
Omnivore	14	55	69
	(20.29%)	(79.71%)	
Total	19	98	117
	(16.24%)	(83.76%)	

Hypothesis 1

To answer the first hypothesis, the answers of the open question were assessed and analysed. As table 3 demonstrates, 80% of the vegans stated that they chose to become vegan to protect the animal welfare, 57.89% of the vegetarians indicated animal welfare as one of their main reasons, and 0% of the omnivores were concerned about the welfare of the animals. These results show that vegans and vegetarians are more inclined to state that they are willing to a stop their meat consumption to protect the life and general welfare of animals. Furthermore, as table 4 shows, around 11% of the vegetarians and around 20% of the omnivores considered changing their diet. Most vegetarians stated that they would like to live more sustainable and environmentally friendly, thus they would consider to either become vegan or at least change their consumption behaviour to a more seasonal and local one (Appendix B). An example for an answer is: “I think it would be important to mainly buy food locally that also grows in the region instead of buying things that are shipped from foreign countries”. The omnivores mainly stated that they would consider changing their diet to be a better version of themselves and to be more sustainable: “everybody has to change their lifestyle to protect our environment”, “Be the change you want”. Only one vegan indicated that they consider changing their diet into becoming more sustainable by buying more regional and seasonal produce. 90% of the vegans did not want to change their diet, which shows that they are still willing to cut-out meat from their diet due to the above-mentioned reasons. Additionally, around 90% of the vegetarians stated that they wanted to keep their diet. Thus, no vegetarian considered to go back to an omnivore diet. However, approximately 80% of the omnivores did not take into consideration to change their diet. Taking both open questions into account, it can be stated that the hypothesis can be accepted, thus vegans and vegetarians are more inclined to protect the animal welfare.

Hypothesis 2

The Levene statistic test revealed that the variance of each comparison group is equal because every *p*-value was higher than .05 and thus, not significant. Therefore, the

homogeneity of the variance has been met. The one-way ANOVA showed that there are differences between the diet groups. The post-hoc analysis revealed whether these differences were significant. Vegans score higher on *Biospheric Values* ($F(2, 114)= 4.71$, $p= .01$), on *Altruistic Values* ($F(2, 114)= 2.00$, $p= .14$), on *Awareness of Consequences* ($F(2, 114)= 3.30$, $p= 0.4$), *Ascription of Responsibility* (F(2, 114)=.13, $p=.88$), and *Personal Norms* ($F(2, 114)= 8.12$, $p<.05$). They score lower than omnivores on *Egoistic Values* ($F(2, 144)=1.77$, $p= .18$) and lower than omnivores and vegetarians for *Ecological values* ($F(2, 114)= .03$, $p= .97$). As the *F*-values and *p*-values show the difference between the diet groups for the variables *Altruistic Values, Awareness of Consequences, Ascription of Responsibility, Egoistic Values,* and *Ecological Values* are not significant because the *p*-values are higher than .05. However, the Tukey HSD revealed that there is only a significant difference ($p< .05$) for the variable *Personal Norms* between vegans and omnivores. Due to the fact that more than half of the variables do not present significant differences between the three diet groups, the hypothesis has to be rejected.

Hypothesis 3

The first moderation analysis was run to determine whether the interaction between 'diet' and 'pro-environmental values' predicts 'general pro-environmental behaviour'. The overall model was significant $F(3, 113) = 13.72$, $p< .05$, predicting $R^2= 27.04\%$ of the variance [$b= -.22$, *95% CI*(-.61; .15)]. This shows that the interaction between 'diet' and 'pro-environmental values' has a negative influence on someone's general pro-environmental behaviour. Next the same moderation analysis was run but exchanging the moderator 'diet' with the moderator 'vegan'. The overall model was significant $F(3, 113)= 10.19$, $p< .05$, predicting $R^2= 16{,}79\%$ of the variance [$b= .68$, *95% CI*(-.42; 1.58)]. The interaction effect between 'vegan' and 'pro-environmental values' was estimated to be positive regarding someone's general pro-environmental behaviour. Then, the moderation analysis was run again, and the moderator was changes into 'vegetarian'. For this analysis, the overall model was significant $F(3, 113)= 12.65$, $p< .05$, predicting $R^2= 26{,}16\%$ of the variance [$b=.16$, *95% CI*(-.38; .68)]. The results show a positive interaction effect between 'vegetarian' and 'pro-environmental values' on someone's general pro-environmental behaviour. Lastly, the third moderation analysis was run to see whether the interaction between the diet group 'omnivores' and 'pro-environmental values' predicts 'general pro-environmental behaviour'. This model was significant as well, $F(3, 113)= 15.32$, $p< .05$, predicting $R^2= 30{,}52\%$ of the variance [$b=-29$, *95% CI*(-.77; .19)]. The interaction between 'omnivores' and 'pro-environmental values' was estimated to be negative regarding someone's general pro-

environmental behaviour. Thus, veganism and vegetarianism have a positive moderation effect on someone's general pro-environmental behaviour, whereas an omnivore diet does not. The moderation effect for the vegan group was the highest, which is why the hypothesis is accepted.

Hypothesis 4

The Levene statistic test revealed that the homogeneity of the variance has been met ($p > .05$). The one-way ANOVA showed that vegetarians score the highest on the PEB ($F(2, 114) = 14.74$, $p < .05$) closely followed by vegans. As table 2 shows vegans ($M = 3.44$) and vegetarians ($M = 3.47$) have almost the same mean, nonetheless vegetarians scored higher in general. The Tukey HSD revealed a significant difference between vegans and omnivores ($p = .01$) and a significant difference between vegetarians and omnivores ($p < .05$). In conclusion, vegetarians tend to act the most pro-environmental in general, followed by vegans, and then omnivores. Thus, the hypothesis must be rejected.

Discussion

The current study aimed at exploring the different values that underly someone's pro-environmental behaviour. The research at hand laid its focus on measuring the general pro-environmental behaviour of each participant and assessing which values they possess. Furthermore, the individuals had to indicate which diet they follow and state why they chose to be either vegan, vegetarian, or omnivore. By assessing the general pro-environmental behaviour, the underlying values, the chosen diet, including the intention behind it, it was central to the study to answer the question to what extent vegans hold different reasons for their PEB compared to the other two diet groups and if they act more pro-environmentally many domains of their life. In general, due to previous research, it was expected that vegans behave more pro-environmentally regardless of their diet. In addition, becoming vegan is a great contribution in the movement against climate change, thus it was hypothesized that vegans possess higher underlying values as well.

The first hypothesis (*Vegans have an even stronger desire to protect the animal welfare compared to vegetarians and omnivores.*) was supported as almost every vegan stated that animal welfare is their main reason to choose a plant-based diet and rarely any vegan considered to change their diet. The remaining vegans, who indicated that they might change their diet, wrote that they would like to consume more seasonal and local goods. Vegetarians showed that animal welfare is a main intention behind their diet as well. As expected, omnivores did not indicate their concern about the animal welfare as an indication

and only the minority considered to change their diet. This finding is in line with previous research. Some prior studies found out that 82% of the vegan participants indicated animal welfare as their reason for changing their diet and 76.56% of the vegetarians (Hirschler, 2011; Souza et al., 2020). Furthermore, Souza et al. (2020) study showed that omnivores did not answer the question about the animal welfare. This finding is similar to the results at hand due to the fact that the omnivore participants did not mention their compassion towards animal while answering the question about their intentions behind their diet. Another factor in support of the hypothesis is the fact that the majority of the omnivores did not consider changing their diet. The majority of the vegan and vegetarian participant also did not consider changing their diet. However, based on the given intentions behind each diet, it can be assumed that, deciding to stay vegan or vegetarian can be traced back to aiming at improving the welfare of animals, whereas staying omnivore will result in the opposite. Interestingly, the findings at hand are contradicting to the findings of Krizanova et al. (2021) because they concluded that many vegans or vegetarians eventually lapse back into a meat-based diet. However, the researchers stated that plant-based dieters with strong pro-environmental values are more likely to adhere to their diet, which is in line with the present results.

Regarding the second hypothesis (*There are significant differences between the scores on the pro-environmental value questionnaire between the three diet groups*), the expected outcomes were not met. Vegans portrayed that they have higher values regarding biosphere, altruism, higher awareness of consequences, higher ascription of responsibility, and higher personal norms. Nonetheless, the results revealed that the differences between the three diet groups are not significant and that the only significant variable is *Personal Norms.* By reason of this, it cannot be concluded that vegans possess different or higher values regarding their pro-environmental behaviour. A possible explanation for this finding was also stated by prior research. Souza et al. (2020) found out that omnivores might have the same pro-environmental values as vegans and vegetarians but do not live by them. These findings are contradicting some previous research, in which was found that veganism and higher values of pro-environmental behaviour are connected (Krizanova et al., 2021).

For hypothesis 3 (*Different diets affect the interaction between someones underlying pro-environmental values and general pro-environmental behaviour, with vegans displaying the highest effect on this interaction*), results indicate that veganism and vegetarianism have a positive moderation effect on the interaction between pro-environmental values and general pro-environmental behaviour. In contrast, the results show that an omnivore diet has a negative effect on this interaction. By reason of this, the hypothesis was accepted. This

finding is in line with the study of Fox (2000). Fox (2000) stated that a plant-based diet has a direct effect on the ecologically sustainable actions of humans, which results and seeking to minimize one's impact on the planet and the amount of harm one causes by looking for own essential needs. This finding, as well as the present study, shows that possessing certain pro-environmental values leads to an increased engagement in general pro-environmental behaviour. Moreover, containing a plant-based diet, which is a strong sustainable action, increases the interaction effect further. Additionally, Fox (2000) mentioned that being plant-based is a purpose-driven action, which has great benefits for the environment and its inhabitants. This is in line with the intent-oriented pro-environmental behaviour, defined by Stern (2000), which can be seen as another indication of why veganism has the greatest positive effect on the interaction between values and general behaviour.

The results of hypothesis 4 (*Vegans act more pro-environmentally in many domains of their daily life, not only regarding their diet, (e.g., using more public transportation) compared to omnivores and vegetarians.*) depict that vegetarians tend to act the most pro-environmental in general, followed by vegans, and lastly omnivores. However, the difference between pro-environmental actions of vegetarians and vegans is very small. Thus, the hypothesis cannot be accepted, nonetheless it can be concluded that meat-free dieters, which includes both diets, are most pro-environmentally engaged. This can be supported by prior studies. In fact, McKeown and Dunn (2021), Souza et al. (2020), and Romo and Donovan-Kicken (2010) all stated that vegans and vegetarians are more pro-environmental and climate change-oriented because cutting meat is one of the biggest contributors for the fight against global warming. As Pimentel and Pimentel (2003) said that a meat-based diet requires significant quantities of non-renewable fossil energy to produce the food also found out. Thus, being conscious about this issue and deciding, based on this, to change one's diet, is another indication of pro-environmental behaviour. A possible explanation for the rejection of the hypothesis might be that vegans and vegetarians differed in their sample size in this study. Therefore, if the sample size would have been the same, it might have become apparent that vegans are behaving more pro-environmental than vegetarians and omnivores.

Theoretical Contributions

Four significant contributions to the research of the different factors that predict pro-environmental behaviour in vegans, vegetarians, and omnivores can be drawn. The present research mainly confirmed prior studies, which investigated pro-environmental behaviour and pro-environmental values regarding the three diet groups. By reason of this, the following

contributions mainly add to prior research, however one of the findings is contradicting to previous work.

First, the majority of vegans and vegetarians indicated that they are most concerned about the welfare of animals as well as the environment. This concern drives them to maintain a meat-free diet. In contrast, most of the omnivore diet group indicate rather personal intentions, such as health, nutrition, or convenience. Thus, it can be concluded that vegans and vegetarians seem to be more concerned about the general wellbeing of animals, humans, and the protection of the environment, whereas omnivores tend to be more concerned about their own wellbeing.

The second contribution is the finding that underlying values regarding pro-environmental behaviour led to a higher engagement in general pro-environmental behaviour. On top of this, veganism and vegetarianism have a positive effect on the interaction, meaning that these diets influence someone's general pro-environmental behaviour. In contrast, an omnivore diet has a negative influence.

Third, which is closely linked to the second theoretical contribution, is that vegans and vegetarians do act more pro-environmentally in general in direct comparison to omnivores. Thus, a meat-free diet is an indication of someone's willingness to invest into protecting the planet.

Fourth, the results showed that vegans and vegetarians do not consider to ever switch back to a meat-based diet and rather adhere to their diet or become more sustainable. This finding is contradicting to previous studies, which stated that a majority of vegans and vegetarians eventually lapse-back into becoming omnivore.

Strengths, Limitation, and Future Research

The present study had strengths which need to be highlighted. The research is mainly quantitative but has a qualitative feature since each participant was asked to write a brief indication about their intentions behind their diet and whether they consider changing their diet. This made the data more personal and individual. Additionally, it needs to be stated that each person had to answer questions regarding their underlying values but writing down their intentions in their own words gave the data more depth. The written intentions revealed even more values and beliefs behind each diet. Furthermore, the aim of this research was to gain a wide range of answers from as many people as possible, which is why a mainly quantitative design was the best choice. In addition, the combination of a quantitative research with some qualitative questions provided a complete overview of a wide area, but also focused on some

specific insights, which differed between each participant. Thus, the researcher was able to assess someone's general pro-environmental behaviour and underlying values, which were derived from prior studies. On top of this, the depth of each participants intentions and their consideration of changing their diet provided a great insight into understanding why people decide to engage in pro-environmental behaviour and if they are willing to give up certain habit to protect the environment.

Although this study was developed and executed thoughtfully and in cooperation with other researchers and supervision, this study does have a rather impacting limitation. First, and foremost, 11 out of the 19 PEB questions had to be deleted prior the analysis since some questions were not included in the survey right from the start. This resulted in an incomplete questionnaire, which was provided to the majority of the participants. Therefore, almost half of the questionnaire was not being included into the analysis. By reason of this, the Cronbach's alpha was highly insufficient. After the reliability analysis, another item had to be extracted, which resulted in 10 remaining items. This led to having insufficient indication whether the participants practice general pro-environmental behaviour.

For this research, a large scope was desirable, even though this goes along with accepting the risk of missing some variables that might be as equally important as the ones assessed by the items (Verschuren & Doorewaard, 2010). However, the sample size consisted of 117 participants, which is a rather small sample size, and thus, a second limitation.

The third limitation is that the sample does not contain a great variety of nationalities, as most participants were German or Dutch. A varied distribution of nationalities could have added more insights into different cultures and peoples regarding their pro-environmental behaviour and values.

The last limitation is that it was expected that the results will show significant differences between the three diet groups in regard to their pro-environmental values. However, the present study did not show significantly different results, which leaves room for further investigation.

The results of the present study regarding the different factors, that influence people with different diets, to act pro-environmentally are still ambiguous. By reason of this, future research should shed further light on this topic. As no significant differences regarding the pro-environmental values were found, future research should investigate these results further by redoing the survey and analysis. As previous research suggests, plant-based dieters have higher pro-environmental values (Krizanova et al., 2021). Furthermore, some omnivores possess these high values as well, but do not seem to live by them (Souza et al., 2020). Thus,

future research should focus on the reason behind this dissonance to get a better understanding of why certain people value the protection of the environment but still behave contradictory.

Next, it is important to consider that veganism and vegetarianism is on the rise (McKeown & Dunn, 2021), thus a research including only these two diet groups will lead to a better insight into their pro-environmental values, reason for choosing to become meat-less dieters, and their general pro-environmental behaviour. Moreover, more diets can be taken into consideration, such as flexitarians, to examine whether these dieters indicate different reasons for behaving pro-environmentally. In line with this, the findings of this study present some values. It would be interesting to further investigate whether there are more underlying pro-environmental values, such as culture or religion, and factors, for example age or income, that could predict an individual's willingness to invest into the environment.

Finally, pro-environmental behaviour is a rather broad term and thus, future researchers could add more behaviours to the questionnaire and add an open question to assess the individual behaviours of each person. This investigation might show different results from the present study due to the fact that climate change and therefore, acting against it becomes more urgent in the upcoming years. Besides, pro-environmental behaviour might change throughout the next years because present actions might not be enough in the future. Over and above, it would be of interest to investigate a greater variety of diet groups, examining whether there are different underlying values, and lastly, whether pro-environmental behaviour changes throughout the upcoming years.

Conclusion

In total, the results of this study revealed more insight into someone's intentions behind their diets, their possession of specific values, and to which extent they act pro-environmentally. It became apparent that pro-environmental behaviour is a broad term and can be defined in different ways and by different actions. As an example, becoming vegan or vegetarian is a mostly pro-environmental decision, however omnivores might behave more sustainable in other domains. Besides, the results of this study suggest that meat-free eaters do act more pro-environmentally in other domains of their life as well, regardless of their diet. This is something future research should investigate further to understand the behaviour and values of different people better. As it was found out, a plant-based diet has a positive effect on the interaction between someone's pro-environmental values and their behaviour, whereas omnivores portrayed a negative effect. In conclusion, the present study confirmed previous studies, namely high pro-environmental values lead to a higher engagement in pro-

environmental behaviour, meat-free dieters are more willing to protect the animal welfare, and that most people want to adhere their diet. Nonetheless, some results were not in line with previous research. The present study did not suggest that meat-free eaters will eat meat again and there are no significant differences between the pro-environmental values of the three groups. This is something future research should particularly focus on. Understanding the intentions and values behind someone's pro-environmental actions, can help to challenge non-pro-environmental behaviour. Awareness of these differences is the first step to help people to adapt a more pro-environmental lifestyle.

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Appendices

Appendix A – Questionnaire

Bachelor Thesis: Environmental behavior and compassion

Beginn des Blocks: Condition

Q90

Consent Form You are being invited to participate in a research study titled **Pro-environmental Behaviour and Compassion.** This study is being done by **students** from the Faculty of Behavioural, Management and Social Sciences at the University of Twente. The purpose of this research study is **to investigate the effect of pro-environmental behaviour on compassion. The study consists of two parts. The first part is this survey, which** will take you approximately **15-20** minutes to complete. The second part is a follow-up survey, which will be sent to you in two weeks. The collected data will be used for the students' bachelor theses. Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any question. We believe there are no known risks associated with this research study; however, as with any online related activity, the risk of a breach is always possible. To the best of our ability, your answers in this study will remain confidential. We will minimize any risks by storing data confidentially. **Collecting personal contact information (e-mail addresses) is essential for this study as it requires a follow-up study in two weeks.**

Study contact details for further information: Josie Vorhauer (j.vorhauer@student.utwente.nl) Aline Sinn (a.sinn@student.utwente.nl) Malin Holtemeyer (m.holtemeyer@student.utwente.nl) Leo Rütgers (l.ruetgers@student.utwente.nl) Cheyenne Schley (c.j.m.schley@student.utwente.nl)

○ I consent to the use of my data. (1)

Ende des Blocks: Condition

Beginn des Blocks: Demographics

Q60 Sex

▼ Male (1) ... Diverse (3)

Q61 Age

_____

Q72 Please indicate your e-mail address. This information is needed for receiving the follow-up survey in 2 weeks.

_____

Q101 What is your Nationality?

- ○ Dutch (1)
- ○ German (2)
- ○ Other (3)

Q102 What is the highest level of education you have obtained so far?

- ○ No Formal Education (1)
- ○ High School Degree or Equivalent (2)
- ○ Vocational Training (3)
- ○ Bachelor's Degree (e.g. BA, BS) (4)
- ○ Master's Degree (e.g. MA, MS) (5)
- ○ Doctorate (e.g. PhD) (6)
- ○ Other (7)

Ende des Blocks: Demographics

Beginn des Blocks: sustainable food consumption

Q97 Green eating includes participating in most of the following behaviors:
- eating locally grown foods, produce that is in season and a limited amount of processed foods
- consuming foods and beverages that are labelled fair trade certified or certified organic
- consuming meatless meals weekly and (if consuming animal products) selecting meats, poultry and dairy that do not contain hormones or antibiotics

Based on the definition of green eating, which of the following best describes you now:

- ○ I do not regularly practice green eating and do not intend to start within the next 6 months (1)
- ○ I am thinking about practicing green eating within the next 6 months (2)
- ○ I am planning on practicing green eating within the next 30 days (3)
- ○ I regularly practice green eating and have been doing so for less than 6 months (4)
- ○ I regularly practice green eating and have been doing so for 6 months or more (5)

Q98 Please select the answer that best describes your usual behavior.

	Hardly ever (1)	Rarely 25% (2)	Sometimes 50% (3)	Often 75% (4)	Almost always (5)	I do not eat meat/ poultry products (6)
How often do you buy meat or poultry products labelled "free range" or "cage free"? (1)	○	○	○	○	○	○
How often do you choose foods labelled organic? (2)	○	○	○	○	○	○
How often do you select food or beverages labelled fair-trade certified? (3)	○	○	○	○	○	○
How often to you choose food that is imported by an airplane? (4)	○	○	○	○	○	○
Locally grown foods are grown within your country. Based on this, how often to you eat locally grown food? (5)	○	○	○	○	○	○
How often do you shop directly at a farm? e.g. for eggs, milk,etc. (6)	○	○	○	○	○	○
How often do you select food with a sustainability label? (7)	○	○	○	○	○	○

How often do you eat seasonal fruits and vegetables? (8)	○	○	○	○	○	○
How often do you do a meat-free day in your week? (9)	○	○	○	○	○	○

Q100 Here are some advantages and disadvantages to Green Eating. Please indicate how important each one is in your deciding to eat green.

	Not at all important (1)	Somewhat important (2)	Neutral (3)	Very important (4)	Extremely important (5)
Eating green is not practical in my life right now. (1)	○	○	○	○	○
Eating green can be too expensive. (2)	○	○	○	○	○
By eating green, I can help protect the planet. (3)	○	○	○	○	○
Eating green would be too difficult. (4)	○	○	○	○	○
Eating minimally processed food is better for my health. (5)	○	○	○	○	○
By eating green I can improve the quality of my diet. (6)	○	○	○	○	○
By eating green I can support the local economy. (7)	○	○	○	○	○
Sustainably produced foods are not available to me. (8)	○	○	○	○	○
I am proud that I can help the environment by eating green. (9)	○	○	○	○	○
I can't find green foods where I shop. (10)	○	○	○	○	○

Ende des Blocks: sustainable food consumption

Beginn des Blocks: Compassion

Q106

	Almost never (1)	Rarely (2)	Occasionally (3)	Very frequently (4)	Almost always (5)
I pay careful attention when other people talk to me about their troubles. (1)	○	○	○	○	○
If I see someone going through a difficult time, I try to be caring toward that person. (2)	○	○	○	○	○
I am unconcerned with other people's problems. (3)	○	○	○	○	○
I realize everyone feels down sometimes, it is part of being human. (4)	○	○	○	○	○
I notice when people are upset, even if they don't say anything. (5)	○	○	○	○	○
I like to be there for others in times of difficulty. (6)	○	○	○	○	○
I think little about the concerns of others. (7)	○	○	○	○	○
I feel it's important to recognize that all people have weaknesses and no one's perfect. (8)	○	○	○	○	○
I listen patiently when people tell me their problems. (9)	○	○	○	○	○

My heart goes out to people who are unhappy. (10)	○	○	○	○	○
I try to avoid people who are experiencing a lot of pain. (11)	○	○	○	○	○
I feel that suffering is just a part of the common human experience. (12)	○	○	○	○	○
When people tell me about their problems, I try to keep a balanced perspective on the situation. (13)	○	○	○	○	○
When others feel sadness, I try to comfort them. (14)	○	○	○	○	○
I can't really connect with other people when they're suffering. (15)	○	○	○	○	○
Despite my differences with others, I know that everyone feels pain just like me. (16)	○	○	○	○	○

Ende des Blocks: Compassion

Beginn des Blocks: Mindfulness

Q107

	Never or very rarely true (1)	Not often true (2)	Sometimes true (3)	Often true (4)	Very often or always true (5)
I'm good at finding words to describe my feelings. (1)	○	○	○	○	○
I can easily put my beliefs, opinions, and expectations into words. (2)	○	○	○	○	○
I watch my feelings without getting carried away by them. (3)	○	○	○	○	○
I tell myself I shouldn't be feeling the way I'm feeling. (4)	○	○	○	○	○
It's hard for me to find the words to describe what I'm thinking. (5)	○	○	○	○	○
I pay attention to physical experiences, such as the wind in my hair or sun on my face. (6)	○	○	○	○	○
I make judgments about whether my thoughts are good or bad. (7)	○	○	○	○	○
I find it difficult to stay focused on what's happening in the present moment. (8)	○	○	○	○	○
When I have distressing thoughts or images, I don't let myself be carried away by them. (9)	○	○	○	○	○

Generally, I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing. (10)	○	○	○	○	○
When I feel something in my body, it's hard for me to find the right words to describe it. (11)	○	○	○	○	○
It seems I am "running on automatic" without much awareness of what I'm doing. (12)	○	○	○	○	○
When I have distressing thoughts or images, I feel calm soon after. (13)	○	○	○	○	○
I tell myself that I shouldn't be thinking the way I'm thinking. (14)	○	○	○	○	○
I notice the smells and aromas of things. (15)	○	○	○	○	○
Even when I'm feeling terribly upset, I can find a way to put it into words. (16)	○	○	○	○	○
I rush through activities without being really attentive to them. (17)	○	○	○	○	○

Usually when I have distressing thoughts or images I can just notice them without reacting. (18)	○	○	○	○	○
I think some of my emotions are bad or inappropriate and I shouldn't feel them. (19)	○	○	○	○	○
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow. (20)	○	○	○	○	○
When I have distressing thoughts or images, I just notice them and let them go. (21)	○	○	○	○	○
I do jobs or tasks automatically without being aware of what I'm doing. (22)	○	○	○	○	○
I find myself doing things without paying attention. (23)	○	○	○	○	○
I disapprove of myself when I have illogical ideas. (24)	○	○	○	○	○

Ende des Blocks: Mindfulness

Beginn des Blocks: Egoism

Q65 Select how much you agree with the statements

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
1. Nowa days a person has to live pretty much for today and let tomorrow take care of itself. (1)	○	○	○	○	○	○	○
2. A person should obey only those laws that seem reasonable. (2)	○	○	○	○	○	○	○
3. These days a person doesn't really know whom he can count on. (3)	○	○	○	○	○	○	○
4. Next to health money is the most important thing in life. (4)	○	○	○	○	○	○	○
5. It is hard to get ahead without cutting corners here and there. (5)	○	○	○	○	○	○	○

Ende des Blocks: Egoism

Beginn des Blocks: Environmental behavioural scale

Q22 Which diet do you follow?

- ○ Vegan (1)
- ○ Vegetarian (2)
- ○ Omnivore (3)

Q23 What are your intentions behind your diet? Please give a brief answer

_____

Q25 How pro-environmental would you consider yourself to be? Please indicate your guessed percentage

	Pro-environmental behaviour in percentage 0 10 20 30 40 50 60 70 80 90 100
0%: not at all; 100%: very much ()	

Q24 Biospheric Values

	Strongly disagree (1)	Disagree (2)	Disagree somewhat (3)	Neither agree nor disagree (4)	Agree somewhat (5)	Agree (6)	Strongly agree (7)
1. I am a person who believes that everyone must look after the environment (1)	○	○	○	○	○	○	○
2. I am a person who respects the environment and believes that we should live in harmony with other living beings (2)	○	○	○	○	○	○	○

Q26 Altruistic values

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
3. I am a person who believes it is important to help others around them (1)	○	○	○	○	○	○	○
4. I am a person who believes in the fair treatment of all people, including persons who are unknown to me (2)	○	○	○	○	○	○	○

Q27 Egoistic values

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
5. I am a person who makes decisions and likes to be a leader (1)	○	○	○	○	○	○	○
6. I am a person who believes it is important to have a lot of money. (2)	○	○	○	○	○	○	○
7. I am a person who believes it is important to have influence over people and their actions (3)	○	○	○	○	○	○	○

Q28 Ecological values

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
8. in recent times, the human population has grown at a faster rate than the planet can support (1)	○	○	○	○	○	○	○
9. The earth has limited resources and space (2)	○	○	○	○	○	○	○
10. Human beings have the right to modify the environment as fits their needs. (3)	○	○	○	○	○	○	○
11. Plants and animals have the same right to life as human beings (4)	○	○	○	○	○	○	○
12. Nature is sufficiently strong to support the impacts produced as a result of modern life (5)	○	○	○	○	○	○	○
13. The balance of nature is very fragile and easily disrupted (6)	○	○	○	○	○	○	○

14. Most environmental problems can be solved through the application of more and better technology (7)	○	○	○	○	○	○	○
15. Human beings will learn enough about how nature works to be able to control it (8)	○	○	○	○	○	○	○
16. Environmental degradation is not as bad as people normally say it is (9)	○	○	○	○	○	○	○
17. If things continue on the current path, we will soon experience a major natural disaster (10)	○	○	○	○	○	○	○

Q29 Awareness of consequences

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
18. Protecting the environment benefits everyone. (1)	○	○	○	○	○	○	○
19. Protecting the environment will help to improve the quality of life for everyone (2)	○	○	○	○	○	○	○
20. Protecting the environment will create a better world for me and my family (3)	○	○	○	○	○	○	○
21. Degradation of the environment directly affects my health (e.g., air pollution) (4)	○	○	○	○	○	○	○
22. Environmental degradation caused in my neighborhood will often affect people in other parts of the world (5)	○	○	○	○	○	○	○
23. In the next 10 years, thousands of animal and plant species will go extinct (6)	○	○	○	○	○	○	○

Q30 Ascription of responsibility

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
24. Every person is responsible for protecting the environment (1)	○	○	○	○	○	○	○
25. The government bears the most responsibility for protecting the environment (2)	○	○	○	○	○	○	○
26. Corporations bear the most responsibility for reducing environmental degradation (3)	○	○	○	○	○	○	○
27. My household is responsible for reducing environmental degradation. (4)	○	○	○	○	○	○	○
28. All households are responsible for reducing environmental degradation. (5)	○	○	○	○	○	○	○
29. I am unwilling to cooperate to reduce environmental degradation if others do not do same (6)	○	○	○	○	○	○	○

Q31 Personal Norms

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither disagree nor agree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
30. I have a moral obligation to protect the environment (1)	○	○	○	○	○	○	○
31. Environmental problems cannot be ignored (2)	○	○	○	○	○	○	○
32. I think it is important that people protect the environment (3)	○	○	○	○	○	○	○
33. The government should require greater environmental protections (4)	○	○	○	○	○	○	○
34. Corporations should reduce their impact in degrading the environment (5)	○	○	○	○	○	○	○

Q32 How pro-environmental would you consider yourself to be? Please indicate your guessed percentage

	Pro-environmental behaviour in percentage 0 10 20 30 40 50 60 70 80 90 100
0%: not at all; 100%: very much ()	

Q33 Would you change your diet after answering these questions?

- ○ If yes, please indicate why: (1) _____
- ○ No (2)

Ende des Blocks: Environmental behavioural scale

Beginn des Blocks: Specific pro environmental behaviour

Q66 Indicate how often you are performing the behaviours

	Never (1)	Rarely (2)	Sometimes (3)	Usually (4)	Always (5)
How often do you cut off on heating or air conditioning to limit energy use? (1)	○	○	○	○	○
How often do you limit your time in the shower in order to conserve water? (2)	○	○	○	○	○
How often do you turn off the lights when you are leaving a room? (3)	○	○	○	○	○

Q67 Indicate how often you are performing the behaviours

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Constantly (5)
How often do you watch television programs, movies or internet videos about environmental issues? (1)	○	○	○	○	○
How often do you talk to others about their environmental behaviour? (2)	○	○	○	○	○

Q68 Indicate if your behaviour has changed

	No (1)	Yes (2)	I do not eat beef/pork/poultry (3)
During the past year have you decreased the amount of beef you consume? (1)	○	○	○
During the past year have you decreased the amount of pork you consume? (2)	○	○	○
During the past year have you decreased the amount of poultry you consume? (3)	○	○	○

Q69 Indicate how often you performed the behaviours

	Never (1)	(2)	Occasionally (3)	(4)	Frequently (5)
During the past year how often have you used public transportation? (1)	○	○	○	○	○
During the past year how often have you walked or cycled instead of driving? (2)	○	○	○	○	○
During the past year how often have you car-pooled? (3)	○	○	○	○	○

Q45 Indicate how often you are performing the behaviours

	Never (1)	Rarley (2)	Sometimes (3)	Usually (4)	Always (5)
How often do you switch off standby modes of appliances or electronic devices? (1)	○	○	○	○	○
How often do you turn off the TV when leaving a room? (2)	○	○	○	○	○
How often do you wait until you have a full load to use the washing machine or dishwasher? (3)	○	○	○	○	○

Q46 Please indicate

	Yes (1)	No (2)
Are you currently a member of any environmental, conservation, or wildlife protection group? (1)	○	○
During the past year have you contributed money to an environmental, conservation, or wildlife protection group? (2)	○	○
During the past year have you increased the amount of organically grown fruits and vegetables you consume? (3)	○	○

Q47 Please indicate

	Hot (1)	Warm (2)	Cold (4)
At which temperature do you wash most of your clothes? (1)	○	○	○

Q50 Please answer the folllowing question based on the vehicle you drive most often

	5.8 or less (1)	6.7-6 (2)	7.8-6.9 (3)	9.4-8.1 (4)	9.8 or more (5)
Approximately how many liters does your vehicle use per 100 kilometers? (1)	○	○	○	○	○

Ende des Blocks: Specific pro environmental behaviour

Beginn des Blocks: Values

Q64 Please indicate how important these values are to you

	Opposed to my principles		Not important		Important			Of supreme importance
	0	1	2	3	4	5	6	7	8
1. POWER (social power, authority, wealth) ()									
2. ACHIEVEMENT (success, capability, ambition, influence on people and events) ()									
3. HEDONISM (gratification of desires, enjoyment in life, self-indulgence) ()									
4. STIMULATION (daring, a varied and challenging life, an exciting life) ()									
5. SELF-DIRECTION (creativity, freedom, curiosity, independence, choosing one's own goals) ()									
6. UNIVERSALISM (broad-mindedness, beauty of nature and arts, social justice, a world at peace, equality, wisdom, unity with nature, environmental protection) ()									
7. BENEVOLENCE (helpfulness, honesty, forgiveness, loyalty, responsibility) ()									
8. TRADITION (respect for tradition, humbleness, accepting one's portion in life, devotion, modesty) ()									
9. CONFORMITY (obedience, honouring parents and elders, self-discipline, politeness) ()									
10. SECURITY (national security, family security, social order, cleanliness, reciprocation of favors) ()									

Ende des Blocks: Values

Beginn des Blocks: Average Meat Consumption

Q73 Please indicate to what extent you agree with the following statements.

	0 (Never) (1)	Once a week (2)	Twice a Week (3)	3 Times a week (4)	4 Times a Week (5)	5 Times a Week (6)	6 Times a Week (7)	7 (Every Day) (8)
How many days a week do you eat meat for breakfast? (1)	○	○	○	○	○	○	○	○
How many days a week do you eat meat for lunch? (2)	○	○	○	○	○	○	○	○
How many days a week do you eat meat for dinner? (3)	○	○	○	○	○	○	○	○
How many times a week do you eat meat for a snack in between? (4)	○	○	○	○	○	○	○	○

Ende des Blocks: Average Meat Consumption

Beginn des Blocks: Farm Experience

Q74 Please indicate to what extent you agree with the following statement.

	Entirely Disagree (1)	Mostly Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Mostly Agree (6)	Entirely Agree (7)
I have a lot of experience with farm animals or farm life. (1)	○	○	○	○	○	○	○

Ende des Blocks: Farm Experience

Beginn des Blocks: Control

Q104 Please have a look at the following picture. Look at it for a few minutes and then answer the following questions.

Q80

Q81 Please indicate to what extent you agree with the following statement.

	Totally Disagree (1)	Mostly Disagree (2)	Somewhat Disagree (3)	Neither Disagree Nor Agree (4)	Somewhat Agree (5)	Mostly Agree (6)	Totally Agree (7)
The first thing I thought about when I saw the picture above was a living being. (1)	○	○	○	○	○	○	○

Q83 Please indicate to what extent you agree with the following statement.

	Very Difficult (1)	Difficult (2)	Somewhat Difficult (3)	Neither Difficult Nor Easy (4)	Somewhat Easy (5)	Easy (6)	Very Easy (7)
How difficult or easy do you find it to imagine what was displayed on the picture was part of a living being? (1)	○	○	○	○	○	○	○

Q84 Please indicate to what extent you agree with the following statement.

	Not At All (1)	Very Little (2)	Somewhat (3)	Neutral (4)	Much (5)	Very Much (6)	Perfectly (7)
How much does the picture above remind you of a living being? (1)	○	○	○	○	○	○	○

Q85 Please indicate to what extent you agree with the following statement.

	Extremely Negative (1)	Mostly Negative (2)	Somewhat Negative (3)	Neither Negative Nor Positive (4)	Somewhat Positive (5)	Mostly Positive (6)	Extremely Positive (7)
Hypothetically speaking, how negative or positive do you feel about eating the meat on the picture? (1)	○	○	○	○	○	○	○

Ende des Blocks: Control

Beginn des Blocks: Manipulation

Q103 Please have a look at the following picture. Look at it for a few minutes and then answer the following questions.

Q75

Q76 Please indicate to what extent you agree with the following statement.

	Totally Disagree (1)	Mostly Disagree (2)	Somewhat Disagree (3)	Neither Disagree Nor Agree (4)	Somewhat Agree (5)	Mostly Disagree (6)	Totally Agree (7)
The first thing I thought about when I saw the picture above was a living being (1)	○	○	○	○	○	○	○

Q77 Please indicate to what extent you agree with the following statement.

	Very Difficult (1)	Difficult (2)	Somewhat Difficult (3)	Neither Difficult Nor Easy (4)	Somewhat Easy (5)	Easy (6)	Very Easy (7)
How difficult or easy do you find to imagine what was displayed on the picture was part of a living being? (1)	○	○	○	○	○	○	○

Q78 Please indicate to what extent you agree with the following statement.

	Not At All (1)	Very Little (2)	Somewhat (3)	Neutral (4)	Much (5)	Very Much (6)	Perfectly (7)
How much does the picture above remind you of a living animal? (1)	○	○	○	○	○	○	○

Q79 Please indicate to what extent you agree with the following statement.

	Extremely Negative (1)	Mostly Negative (2)	Somewhat Negative (3)	Neither Negative Nor Positive (4)	Somewhat Positive (5)	Mostly Positive (6)	Extremely Positive (7)
Hypothetically speaking, how negative or positive do you feel about eating the meat on the picture? (1)	○	○	○	○	○	○	○

Ende des Blocks: Manipulation

Beginn des Blocks: Block 13

Q105 **DON'T FORGET TO CLICK ON THE ARROW DOWN BELOW, OTHERWISE YOUR ANSWER WILL NOT BE COUNTED.**

Thank you for participating in our survey! You will receive the follow-up questionnaire in 2 weeks, which will take less than 5 minutes to complete. If you have any questions don't hesitate to contact us:

Josie Vorhauer (j.vorhauer@student.utwente.nl)
Aline Sinn (a.sinn@student.utwente.nl)

Malin Holtemeyer (m.holtemeyer@student.utwente.nl)
Leo Rütgers (l.ruetgers@student.utwente.nl)
Cheyenne Schley (c.j.m.schley@student.utwente.nl)

Ende des Blocks: Block 13

Appendix B – Reasons to change diet

Table 1

Reasons of changing one's diet

	Vegan	Vegetarian	Omnivores
Reason	"*I am already vegan but I'll try to implement more regional and sessional food to reduce waste and emissions"*	- "*I might want to become vegan"* - *"I think it would be important to mainly buy food locally that also grows in the region instead of buying things that are shipped from foreign countries"* - *"More aware of non-sustainable behaviour. Everyone has to be more sustainable, small steps count"* - *"The questionnaire made me think if I do enough yet so I will pay more attention to this topic from now on"* - *"I wanted to do so anyways because I was aware of the environmental damage. But I never did because of convenience and laziness. The questions made the realize it's not acceptable for me to sustain my diet"* - *"I war offen fruits, that comes with plane to Germany"* - *"I would like to eat more environmental*	- *"Be the change you want"* - *"Because some forms of agriculture in particular harm the environment. However, "better" food sadly is still quite expensive"* - *"Better Tomorrow"* - *"everybody has to change their lifestyle to protect our environment"* - *"*

		friendly, to save the planet" *- "I would try to reduce behaviour that is counterproductive for the environment"* *- "These questions made me realize how this topic relates to so many basic aspects of life"* *-"To be vegetarian is better than being a omnivore"* *- "try new lifestyle and try to protect the environment"* *-"Wake up call"* *- "Yes, if I haven't already changed it"*	

Appendix C - Syntax

Descriptive Statistics

```
* Encoding: UTF-8.
RECODE Ego_1(1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Ego_2 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Ego_3 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Eco_3 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Eco_5 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Eco_8 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Eco_9 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /Resp_2 (1=5) (2=4) (3=3) (4=2) (5=1)
                                    /REsp_3 (1=5) (2=4) (3=3) (4=2) (5=1)


COMPUTE Biospheric_Values = mean (Bio_1, Bio_2).
EXECUTE.

COMPUTE Altruistics_Values = mean (Alt_1,Alt_2).
EXECUTE.

COMPUTE Egoistic_Values = mean (Ego_1, Ego_2, Ego_3).
EXECUTE.

COMPUTE Egological_Values = mean (Eco_1, Eco_2, Eco_3, Eco_4, Eco_5, Eco_6, Eco_7, Eco_8,
Eco_9, Eco_10).
EXECUTE.

COMPUTE Awareness_of_Consequences = mean (Con_1, Con_2, Con_3, Con_4, Con_5, Con_6).
EXECUTE.

COMPUTE Ascription_of_responsibility = mean (Resp_1, Resp_2, Resp_3, Resp_4, Resp_5,
Resp_6).
EXECUTE.

COMPUTE Personal_Norms = mean (Pers_1, Pers_2, Pers_3, Pers_4).
EXECUTE.

COMPUTE PEB = mean (PEB_1, PEB_2, PEB_3,
PEB_4,PEB_5,PEB_6,PEB_7,PEB_8,PEB_9,PEB_10,PEB_11,PEB_12,PEB_13,PEB_14,PEB_15,P
EB_16,PEB_17,PEB_18,PEB_19).
EXECUTE.


COMPUTE Meat_consumption = mean (Meat_1, Meat_2, Meat_3, Meat_4).
EXECUTE.

COMPUTE Pro_env_scale = mean
(Biospheric_Values,Altruistics_Values,Egoistic_Values,Egological_Values,Awareness_of_Conseque
nces,Ascription_of_responsibility,Personal_Norms).
EXECUTE.


COMPUTE Vegan = mean (Diet).
EXECUTE.
```

```
COMPUTE PEB_altered= mean (PEB_1, PEB_2, PEB_3, PEB_4, PEB_5, PEB_6, PEB_9).
EXECUTE.

Descriptives Age, Sex, Degree, Diet, Nationality
/statistics Mean STDDEV max min.

FREQUENCIES VARIABLES=Sex Age Nationality Degree Diet
  /ORDER=ANALYSIS.


 NONPAR CORR
  /VARIABLES=Bio_1 Bio_2
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.

NONPAR CORR
  /VARIABLES=Alt_1 Alt_2
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.

 RELIABILITY
  /VARIABLES=Ego_1 Ego_2 Ego_3
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

 RELIABILITY
  /VARIABLES=Eco_1 Eco_2 Eco_3 Eco_4 Eco_5 Eco_6 Eco_7 Eco_8 Eco_9 Eco_10
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES=Con_1 Con_2 Con_3 Con_4 Con_5 Con_6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES=Resp_1 Resp_2 Resp_3 Resp_4 Resp_5 Resp_6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

 RELIABILITY
  /VARIABLES=Pers_1 Pers_2 Pers_3 Pers_4 Pers_5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

DATASET ACTIVATE DataSet1.

RELIABILITY
  /VARIABLES=Resp_1 Resp_2 Resp_3 Resp_4 Resp_5 Resp_6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.
```

```
RELIABILITY
  /VARIABLES=Resp_1 Resp_4 Resp_5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES=Ego_1 Ego_2 Ego_3
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.

 NONPAR CORR
  /VARIABLES=Ego_1 Ego_2
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.

RELIABILITY
/VARIABLES=PEB_1 PEB_2 PEB_3 PEB_4 PEB_5 PEB_6 PEB_7 PEB_8 PEB_9 PEB_10
PEB_11 PEB_12 PEB_13 PEB_14 PEB_15 PEB_16 PEB_17 PEB_18 PEB_19
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES=PEB_1 PEB_2 PEB_3 PEB_4 PEB_5 PEB_6 PEB_7 PEB_8 PEB_9 PEB_10
PEB_11 PEB_12 PEB_13 PEB_14 PEB_15 PEB_16 PEB_17 PEB_18 PEB_19
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.

RELIABILITY
  /VARIABLES=PEB_1 PEB_2 PEB_3 PEB_4 PEB_5 PEB_6 PEB_9
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.

RELIABILITY
  /VARIABLES= PEB_1 PEB_2 PEB_3 PEB_4 PEB_5 PEB_6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL CORR.

RELIABILITY
  /VARIABLES=Meat_1 Meat_2 Meat_3 Meat_4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.

SORT CASES BY Diet.
SPLIT FILE SEPARATE Diet.
DESCRIPTIVES VARIABLES= Biospheric_Values Altruistics_Values Egoistic_Values
Ecological_Values Awareness_of_Consequences Ascription_of_responsibility Personal_Norms
    /STATISTICS=MEAN STDDEV MIN MAX.
```

```
SPLIT FILE Off.

SORT CASES BY Diet.
SPLIT FILE SEPARATE Diet.
DESCRIPTIVES VARIABLES= Biospheric_Values Altruistics_Values Egoistic_Values
Ecological_Values Awareness_of_Consequences Ascription_of_responsibility Personal_Norms PEB
Meat_consumption
   /STATISTICS=MEAN STDDEV MIN MAX.
SPLIT FILE Off.
```

Hypothesis 1

```
FREQUENCIES VARIABLES=Diet_change
  /ORDER=ANALYSIS.

CROSSTABS
  /TABLES=Diet BY Diet_change
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Diet BY Diet_change_reason
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
```

Hypothesis 2

```
ONEWAY Biospheric_Values Altruistics_Values Egoistic_Values Ecological_Values
    Awareness_of_Consequences Ascription_of_responsibility Personal_Norms BY Diet
  /STATISTICS DESCRIPTIVES HOMOGENEITY BROWNFORSYTHE
  /MISSING ANALYSIS
  /POSTHOC=LSD ALPHA(0.05).
```

Hypothesis 4

```
ONEWAY PEB_altered BY Diet
  /STATISTICS DESCRIPTIVES HOMOGENEITY BROWNFORSYTHE
  /MISSING ANALYSIS
  /POSTHOC=LSD ALPHA(0.05).
```