



# Environmentally Friendly Diets

## Perceptions and Behaviours of Sustainability Students

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Swedish University of Agricultural Sciences, SLU

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# Environmentally Friendly Diets. Perceptions and Behaviours of Sustainability Students

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## Abstract

The food sector has massive consequences on the environment as it causes, among others, GHG emissions, deforestation, water scarcity and climate change. Therefore, it is essential to transform the food sector and the related diets of individuals. For transforming diets, it is necessary to understand food behaviour which is why food choices should be investigated. However, only a few broad definitions exist on how an environmentally friendly diet can be constituted without providing a blueprint. This study aims to look closer into food choices of sustainability students in order to understand their perceptions and behaviour of environmentally friendly diets.

Eight semi-structured interviews were conducted to examine how Sustainable Development and Rural Development and Natural Resource Management master students perceive an environmentally friendly diet and the influences on the food choices they actually say they make. This research uses the Theory of Planned Behaviour as the theoretical framework as the theory variables help explain how individuals' dietary behaviour is influenced.

The results show a broad consensus on what constitutes an environmentally friendly diet. The main difference concerns the degree of meat consumption and how meat is produced. In general, the interviewees try to eat as ecologically friendly as possible but are restricted by personal and external factors.

The findings indicate the need for further research on why personal restrictions is more significant to certain individuals than others. Also, it would be interesting to compare the behaviour of sustainability students to non-sustainability students to investigate if it differs.

*Keywords:* Environmentally Friendly Diets, Sustainable Diets, Theory of Planned Behaviour, Sustainability Students, Food Choices, Food Behaviour, Eating Environmentally Friendly, Perceptions, Views

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# Abbreviations

IntRD	Interviewee Rural Development and Natural Resource Management
IntSD	Interviewee Sustainable Development
PBC	Perceived Behavioural Control
RDNRM	Rural Development and Natural Resource Management
RQ	Research Question
SD	Sustainable Development
SDG	Sustainable Development Goal
SLU	Swedish University of Agricultural Sciences
TPB	Theory of Planned Behaviour
UU	Uppsala University

# 1. Introduction

## 1.1 Background

Worldwide, the food sector accounts for up to 30 per cent of all human-caused greenhouse gas emissions (Bailey & Harper 2015; Wellesley et al. 2015). Livestock and feed crops alone cause nearly one-third of the world's deforestation and related carbon dioxide emissions (Wellesley et al. 2015). Hence, they are drivers of climate change and exceed the earth capacities (Theurl et al. 2020). In addition, the use of water, land, and energy is extremely resource intensive (Wellesley et al. 2015). Agriculture is one of the main causes of water scarcity, as irrigation requires about 70 per cent of freshwater withdrawals globally (Bailey & Harper 2015). Global dietary change, in particular the reduction of meat consumption, would contribute more than a quarter of the emission reductions needed by 2050 (Wellesley et al. 2015) as well as protecting forests (Theurl et al. 2020). Therefore, understanding personal dietary choices is paramount to transforming the present food system (Chen & Antonelli 2020). The construction of diets is complex and varies depending on the surroundings, cultural, social, psychological, economic, biological, and contextual factors (Jabs et al. 2000; Bisogni et al. 2002; Daivadanam et al. 2015). This study aims to look closer into food choices of sustainability students in order to understand their perceptions and behaviour of environmentally friendly diets.

Even though a joint agreement on the need for a dietary shift exists and the primary aspects of a healthy and sustainable lifestyle, there is no blueprint on eating in an environmentally friendly way (Bailey & Harper 2015). However, more general definitions are available. According to The Food and Agriculture Organization of the UN and the World Health Organization, sustainable diets are defined as

those diets with low environmental impacts which contribute to food and nutrition security and healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimising natural and human resources. (Food and Agriculture Organization of the United Nations & World Health Organization 2019)

This definition offers a broad comprehension of what is meant by environmentally friendly food diets. It provides health, societal, economic, and environmental dimensions (Nicholls & Drewnowski 2021). It explains in theory what criteria a sustainable diet should follow despite having limitations in the lack of clear goals, guidelines, and determinants to track and evaluate. Nevertheless, independent of the definition, indicators exist for measuring the ecological footprint through greenhouse gas emissions, land, and water usage (Perignon et al. 2017).

In contrast, EAT<sup>1</sup> provides a more concise description of a planetary beneficial and healthy diet and creates the concept of the so-called planetary health diet:

The planetary health diet is a global reference diet for adults that is symbolically represented by half a plate of fruits, vegetables and nuts. The other half consists of primarily whole grains, plant proteins (beans, lentils, pulses), unsaturated plant oils, modest amounts of meat and dairy, and some added sugars and starchy vegetables. The diet is quite flexible and allows for adaptation to dietary needs, personal preferences and cultural traditions. Vegetarian and vegan diets are two healthy options within the planet health diet but are personal choices. (EAT n.d.c)

In short, EAT recommends a flexitarian, leaning towards a plant-based diet (EAT n.d.b, n.d.d). Figure 1 provides an overview of the nutritional classifications of the planetary health diet.



Figure 1 The Planetary Health Diet (EAT n.d.d.)

<sup>1</sup> Founded in 2013, the international non-profit initiative EAT connects food, health and sustainable development (EAT n.d.a). It aims to support meeting the SDG and Paris Agreement targets by helping create a transformation in food production and consumption through global interdisciplinary research (EAT 2019, n.d.c). Thus, according to Kristalina Georgieva, former CEO of the World Bank (2017-19), “EAT is an important part of the global discussion about fair and sustainable food systems” (EAT 2019:3).

EAT holds food companies and policy makers accountable, but also includes the vital role of the consumer (EAT 2019). EAT appeals to individuals to demand “the end to unhealthy, unsustainable and costly food policies and practices” (EAT 2019:12) and emphasises that consumers purchasing behaviour has an influence on demand patterns and thus adapts their buying actions (EAT 2019).

Moreover, the ecological behaviour of individuals and the effect of humans on nature is a topic of public matter and also the topic of numerous psychological studies (Kaiser 1998). People's inconsistency in their ecological behaviour is at the heart of the debate in environmental psychology over assessing ecological behaviour (Kaiser 1998). Yet, there is a lack of detailed insight into the decision-making process toward environmentally friendly food consumption (Vermeir & Verbeke 2006).

First, understanding the psychological determinants of pro-environmental conduct is required (Ienna et al. 2022). One controversial factor is knowledge since literature suggests various interpretations of the role of knowledge regarding environmental behaviour. Even though there is a shared consensus that expertise holds advantages for ecological change, the degree of its impact differs (Kaiser 1998; Gotschi et al. 2009; Fröhlich et al. 2013). For instance, Vermeir & Verbeke (2006) emphasise the importance of sufficient knowledge and information. Product choice unsettles consumers when either less, more complex, contradictory or confusing information is available (Vermeir & Verbeke 2006). Hence, having access to credible and accurate information in the purchasing selection process is critical (Vermeir & Verbeke 2006). Or according to Liu et al. (2020), knowledge creates a chain reaction because ecological knowledge positively impacts environmental attitudes, these in turn on behavioural intentions, and these again rum on pro-environmental behaviours. Plus, in their opinion, ecological knowledge can also directly influence pro-environmental behaviours (Liu et al. 2020). However, they also believe that besides knowledge, other factors should be considered to evaluate environmental behaviour (Liu et al. 2020). Other influential factors are, among others, feeling of environmental and societal responsibility (Vermeir & Verbeke 2006), habit (Levine & Strube 2012) and emotions (Rickinson et al. 2010; Fröhlich et al. 2013)

People's daily judgments and behaviours are shaped by various clashing and competing variables (Kollmuss & Agyeman 2002). Conversely, several elements affect our pro-environmental decisions (Kollmuss & Agyeman 2002). Hence, when attempting to understand environmentally friendly behaviour, it is critical to concentrate on several variables, influences, constraints, and degree of difficulty (Kaiser 1998; Levine & Strube 2012). Fröhlich et al. (2013) regard situational interest as the most impactful aspect of behavioural intention.

## 1.2 Problem Formulation

In today's world, the population cannot continue living inconsiderately using up all the resources and damaging the environment. One way for an individual to reduce their ecological footprint is to adapt their nutritional habits. This study aims to look closer into food choices of sustainability students in order to understand their perceptions and behaviour of environmentally friendly diets.

Hence, I am focusing my research on students who possess over an understanding of environmental and sustainability topics. In order to answer my research questions, I have interviewed master students from the Sustainable Development (SD) program, a program jointly organised by Uppsala University (UU) and Swedish University of Agricultural Sciences (SLU). In this program, students come in contact with a “range of topics concerned with sustainable development, including theoretical and practical courses with natural resource use, society and the environment, and energy-water-food” (Lundqvist n.d.). In addition, I interviewed master students from the Rural Development and Natural Resource Management (RDNRM) program, as those students receive “in-depth understanding of rural livelihoods, governance of natural resources, food systems and power inequalities so that [they] can use [their] knowledge to have a positive impact on development, poverty and climate change” (SLU n.d.). Thus, both programs are exposed to discussions about food consumption and production in relation to sustainable transformation.

## 1.3 Research Aim and Questions

As I mention in the introduction, the aim of the thesis is to look closer into food choices of sustainability students in order to understand their perceptions and behaviour of environmentally friendly diets. Furthermore, what impacts their choice of diet. Therefore, I pose the following research questions:

**RQ1:** How do the students perceive what an environmentally friendly diet is?

**RQ2:** And what are the rationales (including influences) for the decisions and actions regarding their food choices?

## 2. Theoretical Framework

In this study, I use the Theory of Planned Behaviour (TPB), developed by Ajzen 1991. TPB is an established social psychological theory of human behaviour (Renzi & Klobas 2008; Dowd & Burke 2013). The TPB aims to predict and describe human behaviour in given situations (Ajzen 1991). I am focusing on the latter in order to understand why my interviewees eat how they do related to their awareness of the impact of diets on the environment. The theory shows why people do or do not exhibit a particular behaviour (Fishbein & Ajzen 2009). The TPB is primarily found in quantitative research; nevertheless, it can also be used for qualitative methods (e.g., Barberia et al. 2008; Renzi & Klobas 2008; White et al. 2015; Ajzen 2021). Among others, the TPB can support explaining dieting behaviours (Renzi & Klobas 2008) and is also applied in research involving sustainability, environmental worries, and pro-ecological attitude (Yu & Yu 2017).

The theory provides tools to clarify the antecedents of behaviour (De Groot & Steg 2007) and show the connection between individuals' claims and actual doings (Tornikoski & Maalaoui 2019). This will help me understand how my interviewees perceptions of environmentally friendly food diets affect their food behaviour. This will help me answer RQ1 and RQ2.

The basic version of TPB includes five variables: attitude, subjective norm, perceived behavioural control (PBC), intention, and behaviour (Ajzen 1991). The theory can be supplemented by other predictors (Ajzen 2021). Intention and its relating behaviour are influenced by the predictors of attitude, subjective norm, and PBC (Ajzen 2005) which is depicted in Figure 2. PBC can directly or indirectly influence the behaviour either through intention or the behavioural outcome directly (e.g., Fishbein & Ajzen 1975; Manstead & van Eekelen 1998).

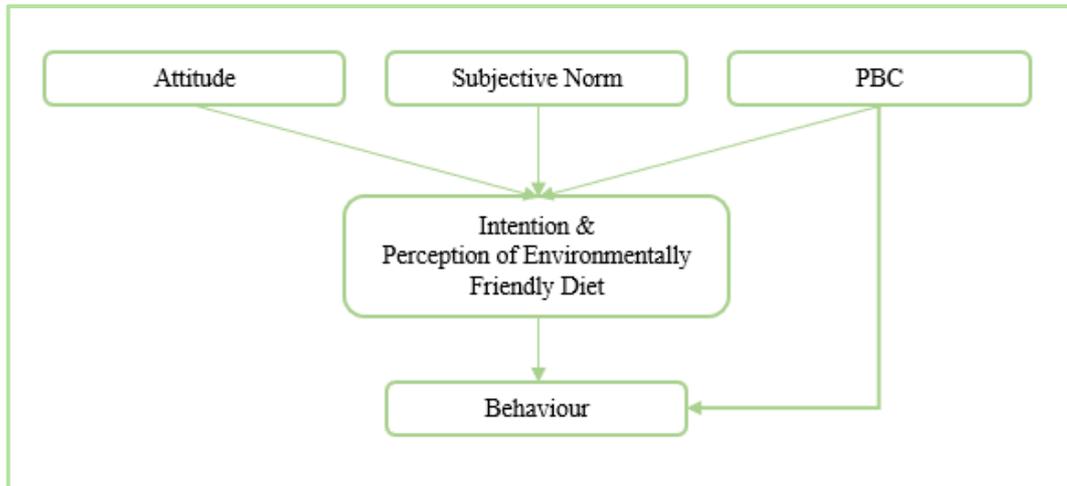


Figure 2 Adapted Graph of Theory of Planned behaviour (Ajzen 1991)

### **Attitudes**

Attitudes towards a behaviour offer a favourable or unfavourable evaluation of the actual execution of the behaviour (Ajzen 1991, 2006). In my case, how likely my interviewees perceive it to eat in an environmentally friendly way.

### **Subjective Norm**

Subjective norm “refers to the perceived social pressure to perform or not to perform the behavior” (Ajzen 1991:188).

### **Perceived Behavioural Control (PBC)**

PBC represents an individual’s assessment on how feasible the performance of the behaviour is (Ajzen & Madden 1986). The PBC also includes limitations and reasons for decisions and actions (Ajzen 1991; Harland et al. 1999), which would contribute to answering RQ2. PBC can also be indicated by motivation (Ajzen & Madden 1986).

### **Intention**

“Intention is an indication of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior” (Ajzen 2019) and describes the motivational elements that affect the behaviour (Ajzen 1991). Among others I try to descry whether my interviewees perception of an environmentally friendly diet alligns with their behaviour. Henceforth, I regard their perception of an environmentally friendly diet as an intention.

## **Behaviour**

Behaviour responds to a particular situation concerning a particular goal (Ajzen 2019), which is environmentally friendly diets in this research. The behavioural outcome I am investigating is the actual performance of diets. In TPB, behaviour is a combined function of intentions and perceived behavioural control (Ajzen 1991, 2019). In general, individuals have the intention to carry out behaviour when their attitude is positive, when they feel social pressure to behave a certain way, and when they have the impression to have the opportunities and methods to perform the behaviour (Ajzen 2011).

I will be looking at the views of environmentally friendly diets and the correlation between the perception of an environmentally friendly diet and their actual (food) behaviour. I intend to equate intention partly with meaning-making because as they are studying something related to sustainability, they probably want to do something good for the environment. Then I can see if they say they behave that way.

## 3. Methodology

My thesis is based on a social constructivist worldview with the perception of individuals trying to construct meaning for the world they live in, creating and assigning subjective meaning to their experiences (Creswell 2014; Robson & McCartan 2016). In my role as a researcher, I examine the complexities of my interviewees' views, expressed by language, where I am dependent on the participants' view of the studied situation (Creswell 2014). The social constructivist worldview fits my qualitative research because I am researching individuals' subjective perceptions of environmentally friendly food diets.

Moreover, I will take on a social psychological lens because I am using the Theory of Planned Behaviour to discuss my results (De Groot & Steg 2007). There I try to understand my interviewees' behaviours around environmentally friendly diets.

### 3.1 Data Collection

For my data collection, I conducted semi-structured interviews. I have chosen interviews because of the production of unexpected or unanticipated answers (Robson & McCartan 2016). Semi-structured interviews enable me to be organised, keep the red thread, and have comparable answers. In addition, I can react flexibly in case an answer requires following up (Robson & McCartan 2016) and can hence deviate from my questionnaire. Interviews also have the benefit that I can make sense of the interviewees' language, expressions, and perceptions. However, I must consider how my presence and questioning could influence the answers. Therefore, conducting interviews enable me to ascribe numerous opinions on ecologically friendly food diets, what motivates my interviewees to be environmentally friendly and why, and if their behaviour aligns with their perception of what an environmentally friendly diet is.

However, I am acknowledging that I am relying on the self-reports of my respondents rather than observing their actual behaviour. Environmental psychological studies commonly use self-reports as a data collection method if observation is not possible (Steg & Vlek 2009) which applies to my research as I would have needed to observe my participants actual behaviour over a longer period

of time. Some studies have found great differentiations between the self-described and monitored behaviour, other studies revealed similar outcomes between reported and observed (Steg & Vlek 2009). Kaiser (1998) recommends that no distinction is needed to make between self-reports and objective measurements as long as the statements are applied as behavioural indicator. Conducting interviews has the advantage to have material to comprehend the reasoning, motivational, and underlying aspects and processes of non-environmentally friendly behaviour to counteract (King & Dennis 2006; Steg & Vlek 2009).

In total, I have interviewed eight master's students whose study involve sustainable transformation, and hence are exposed to environmental topics. I am aware of the limitation of merely interviewing eight people. Nevertheless, I believe that it can indicate the direction environmentally friendly diets follow and if they are performed. All interviews were held in English and lasted between 35 minutes and an hour. I have interviewed four Sustainable Development students, a program cooperatively organised by Uppsala University (UU) and the Swedish University of Agricultural Sciences (SLU), as well as four Rural Development and Natural Resource Management students from SLU. They were partly first and second-year master's students.

Regarding contacting and finding my interviewees, I shared previous courses with RDNRM students and asked them to be part of my research without disclosing my exact research topic. We mostly had zoom lectures together, so their diet choice was previously unknown to me, except IntrD3 (Interviewee Rural Development and Natural Resource Management 3). For my SD interviewees, I contacted one SD student for an interview. From then, I used the snowball method because that interviewee gave me the contacts of fellow program students who were willing to take part in my project. For that reason, I previously did not know about their eating behaviours and general attitudes. They were all of European origin, and that with a more diverse group of interviewees the result might have been different. Table 1 provides an overview of the demographic information of my interviewees. Those background factors serve as enabling a comparable basis among as they have similar prerequisites.

In hindsight, and if more time were available, it would have been beneficial first to send out a survey to filter more diverse understandings of environmentally friendly diets. The opinions stated are all unique but go in a similar direction.

		Gender <sup>2</sup>	Age	Country of Origin	Rural/Urban	Educational Background	Children
Interviewees SD	IntSD1	male	24	Italy	Grew Up: urban Now: urban (Uppsala)	Political Science	no
	IntSD2	male	23	Netherlands	Grew Up: rural Now: urban (Uppsala)	International Business	no
	IntSD3	female	23	Portugal	Grew Up: urban Now: urban (Uppsala)	Biological Engineering	no
	IntSD4	female	25	Germany	Grew Up: urban Now: urban (Uppsala)	International Business Administration	no
Interviewees RDNRM	IntRD1	male	26	Sweden	Grew Up: rural Now: Urban (Stockholm)	Agronomy (Gastronomic Sciences)	no
	IntRD2	male	22	French	Grew Up: rural lived in urban Now: urban (Uppsala)	Philosophy Political Sciences	no
	IntRD3	female	25	Austria	Grew Up: rural Now: urban (Uppsala/Vienna)	Agricultural Sciences	pregnant
	IntRD4	female	26	Germany	Grew Up: rural Now: rural (Uppsala)	Human and Environment (Ecological Sciences)	no

*Table 1 Demographics Interview Participants*

In my zoom and in person interviews, I asked for permission to record and transcribe the interviews which I used for analysing. Furthermore, I considered further ethical procedures before and during my project as I am researching individuals (Long et al. 2016) which I should protect (Creswell 2014). Hence, I anonymised my participants and clarified the risks and benefits of my study and their potential withdrawal at any time. For the safety of my interviewees and mine as a researcher, I made them sign consent forms to ensure a mutual understanding.

I have conducted six interviews in real life and two on zoom. Considering that we have been living in the pandemic for a while now and therefore, are familiar with zoom, I have not noticed any crucial difference between the interviews held in person or on zoom. For both interview settings, I audio recorded the sessions and

<sup>2</sup> I have asked my interviewees how they identify; I did not assume their gender.

transcribed them verbatim. Plus, I have taken notes on what has been said for backup and support of my recordings.

My interview guideline (Appendix 1) is sectioned into seven parts:

- 🗣️ Introduction
- 🗣️ Background Information
- 🗣️ Definitions/Understandings
- 🗣️ Behaviour
- 🗣️ Values
- 🗣️ Diet
- 🗣️ Wrap-Up

And consists of a total of 22 questions (excluding introduction, background, and wrap-up). At the beginning of the interviews, I asked for my interviewee's understanding/definitions of four terms: sustainability, environment, environmental awareness, and environmental friendliness. The meaning-making questions help motivate and explain why the environment is vital to them and offer encouragement to protect the environment and understand why to act environmentally friendly. With my interview guide, I can learn about my participants' opinions and views on environmental friendliness, especially on food, and how they are created, influenced and reasoned. Thus, I hope to identify their meaning-making and justifications around environmentally friendly food diets.

For preventing confirmation bias, I only told my interviewees that I am researching something about sustainability and prevent impacting their opinions. Also, at the beginning of the interviews, I emphasised that I am merely interested in their opinions and that I am not here to judge and rather listen to them and try to understand them. Hence, my questions were also quite broad in the beginning, asking about their definitions, and understandings, moving on to general behaviours, then values, and then to diet. First, in question 16, I ask them about their idea of an environmentally friendly diet. So, by question 18, which is my ranking question<sup>3</sup>, they most probably have guessed my interview topic, so their ranking could have been influenced by that. Also, my proceedings to avoid confirmation bias can never be completely eliminated.

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<sup>3</sup> In my ranking question, I ask my informants to rank 14 aspects concerning nutrition from most to least important (see Appendix 1).

## 3.2 Data Analysis

I transcribed the recorded interviews through the transcription software otter.ai for simplifying and time-saving purposes. I relistened to the interviews to eradicate any mistakes. This allowed me to relive the interviews with their reactions, behaviours, and opinions which I retained by taking further notes. Reading thoroughly prevented me from jumping to conclusions about what I think my data is trying to tell me.

First, I started by reading through all my transcript materials and highlighting emerging themes, sub-themes and common data patterns, focusing on statements answering my two research questions (Renzi & Klobas 2008; Zoellner et al. 2012). After some interviews I had an idea what to look for and hence, reread through my material again. Following by adding all the collected thoughts, themes, and interpretations into a table. This table juxtaposes all my notes from all my interviewees, organised by the interview questions. My next step was to colour code themes as the participants would mention things in different places.

With the lens of the Theory of Planned Behaviour (TPB), I allocated the theory's variables (attitudes, subjective norm, PBC, intention, and behaviour) to my transcripts. In style of the TPB figure, I created further tables for each interviewee. I went through all the tables again to find some overarching themes. By looking at my material, I realised that often their statements overlap in the theme, making it difficult to decide to which TPB variable their statements belong. Therefore, I looked at my interview questions if some questions could be assigned to the TPB factors. Notwithstanding, some interviewees drift from my questions, so in some cases I had to find other methods for sectioning the TPB factors. To overcome this obstacle, I clearly differentiated the variables from each other and assigned clear roles to them. Below I will specify how aspects fit the criteria of the five predictors.

### **Attitudes**

As TPB is frequently used in quantitative research, researchers often use a standard attitude scaling procedure (Ajzen 2002). In my case, as I am conducting qualitative research, I look at the meaning of attitudes. The terminology of attitudes depends on the context in which theoretical framework it is being used which leads to attitudes being understood in various ways (Fishbein & Ajzen 1975). I base my definition on Ajzen (1991), where attitudes are described as how likely it is to act out the behaviour. In other words, attitudes show if individuals have a favourable or unfavourable feeling towards a behaviour (Ajzen 1985, 1991, 2002). For my research, attitudes represent how likely my interviewees perceive to perform an environmentally friendly food behaviour. The following questions of my interview guide helped my allocate attitudes:

- (4) What comes to your mind when acting environmentally friendly?
- (6) In your opinion, what is the easiest behaviour change an individual can pursue to reduce their ecological footprint?
- (7) What do you do in your personal life in being environmentally friendly?
- (9) What are your values concerning the environment?
- (10) What are your values concerning nutrition?

The answer to these questions provides me insight if they have a favourable estimation if diet has influence on reducing one's ecological footprint and if they already do it.

### **Subjective Norm**

As subjective norms reflects on social influence (Ajzen 2005), I focused on what my interviewees mentioned about their surroundings, and culture. Furthermore, two of my interview questions concern subjective norm:

- (21) Do you think your program influenced you (in your diet)? How? Tell me more about it.
- (22) Do you feel social pressure from your peers? What happens? How does it feel? How do you handle it?

### **Perceived Behavioural Control (PBC)**

PBC predicates about the capability to execute the behaviour (Ajzen 2005). Hence, I look at the limitations and restraints mentioned by my interviewees. I distinguish between external and internal factors that hinder my interviewee in following their perception of an environmentally friendly diet. A crucial question asked to help me find PBC is

- (17) Do you eat in that way? (How) does your diet align with your values and perceptions of an environmentally friendly diet? When not, why not?

Other helpful questions are:

- (14) What are the reasons how and what you eat?
- (18/19) Questions of how they rank aspects of nutrition

During my analysis, I found it challenging to distinguish between intentions and behaviours. Especially, because I do not observe my respondent's behaviour over a specific time period and have not asked specifically what their intention is and have to rely on what they say about how they behave. In order to cross reference, I asked how they described, for instance, what they eat in a normal studying day and then later explain what in their view an environmentally friendly diet is.

### **Intention**

As mentioned in the theoretical framework section, I am including my interviewees view of what an environmentally friendly diet is in the intention section because I

would like to figure out whether their perception lings up with their behaviour. I can analyse if my interviewees perception of an environmentally friendly diet contradicts with what they say they are doing. Hence, the answers to the questions below guide me:

- (16) What do you think is the most sustainable/environmentally friendly diet?

Thus, I descried what my informants' understanding of an environmentally friendly diet is. Plus, I look out for signal words, and phrasings,

- I intend to
- I plan to
- I will try to
- I will engage in
- I expect to (Ajzen 2002; Fishbein & Ajzen 2009).

In addition, intentions usually consist of four components: a behaviour, a target, a specific situation, and time (Fishbein & Ajzen 1975). These factors were also implicated, if available, in my analysis.

### **Behaviour**

Here I will look at how PBC and intention influence my interviewees behaviour and how they describe their dietary behaviour. The following questions will help me allocating statements to behaviour:

- (7) What do you do in your life in being environmentally friendly?
- (11) Take me through a normal studying day, what do you eat and drink?
- (12) Take me through a weekend, what do you eat and drink?
- (13) Is there a difference in eating in and out?

Another issue I came across in my analysis was that, by establishing those TPB factors, I automatically interpret my findings because I also must motivate why I allocate a certain statement to a certain TPB variable. Thus, using the variables in the results would have antedated interpretations of the discussion section. Hence, instead of using the variables as themes for the results, I am using them to discuss my material. The theory helps me interpret my findings. On that account, the themes of the result section are organised by how they can help me answer my research questions and provide a base for my discussion.

During the data analysis, I am aware that my opinions, and perceptions could impact the result of my research. For instance, I have a clear idea myself of what a sustainable food consumption is, which will probably influence my research. This awareness has made me careful not to oppose my beliefs on my interviewees and I put in extra effort to be objective toward their ideas.

## 4. Results

In the result section, I will present three themes. First, my interviewees' motivations for acting environmentally friendly in order to help explain why the students eat how they eat. Hence, I find it crucial to touch upon why they think it is vital to act with an ecological mindset and offer comprehension of how they make sense of environmentally friendly diets. Secondly, I will introduce the multiple perception of an environmentally friendly diet. Thirdly, I will amplify various influences on food choices because that also leads to their understanding of what an environmentally friendly diet is.

### 4.1 Motivations for Eating Environmentally Friendly

One interview aim was to find out if my interviewees consider diet as a vital tool in reducing one's footprint and if changing your diet does make a difference. All interviewees mention something food-related throughout the interviews before I even start asking about diet questions. It merely differs at what point, some a little earlier than others. In addition, some mention the importance of diet multiple times.

One of the sub-themes that kept emerging was the importance of getting informed in order to become or eat more environmentally friendly. For instance, IntRD1 indirectly indicates that knowledge has helped him gain more respect regarding water used to produce food and clothes. IntRD2 even went off-topic and approached how to motivate other people through communication, making them aware of their current behaviour's consequences and showing them that “we just do disaster”. However, some of my interviewees noted that possessing knowledge is not sufficient if there is a lack of motivation. IntSD2 argues that it is hard to change if you aren't actively looking to do so:

Being aware alone is not enough; some kind of motivation is needed.[...] Once you set your mind to like, I kind of want to do something, then I think it is very easy to get rid of [behavioural patterns, e.g. part of your diet]. (IntSD2)

IntSD1 and IntRD4 emphasise the importance of acquiring knowledge and awareness in the course of the interview. Both explain that one should get informed about what a person's behaviour does to the environment. For example, IntSD1 alludes to “being informed about little things”, such as the consequences of what happens if you leave the water running while brushing your teeth, beyond being proactive in getting informed to “discover things to increase knowledge” (IntSD1).

Therefore, according to IntRD2, IntSD2, and IntSD3, it is essential to engage in conversations, debates, or even partake in protests to spread knowledge because the “exchange of knowledge” (IntRD2) is crucial and to “make sure that people are aware about what sustainability is or what being environmentally friendly is” (IntSD3). Since talking about environmental issues and topics contribute to enlightenment and could enable behavioural change with some individuals, such as for IntRD1 and IntRD2.

In addition to getting informed and engaging in conversations, not harming the environment is another sub-theme. In terms of what is essential for the environment, my interviewees pointed out not wanting to inflict damage to the environment nor witnessing it by using different expressions, such as environmental crisis, environmental problems, pollution, and harming the environment. Not harming the environment includes that “nothing is overexploited” (IntRD3) but does not go into more depth with what she actually means by that. Similar to IntSD4 who connects “not destroying” (IntSD4) to the word sustainability without going into more detail. In hindsight, it would have been favourable to have followed up on their statements. One interviewee, IntRD1, also referred to the feeling of urgency, “when speaking of the environment that is quite stressful” (IntRD1).

Moreover, justice to the environment and society, also regarding food, repeatedly came up. Social justice has been a reoccurring sub-theme throughout the interviews. IntRD3 refers to social justice when criticising supermarkets: “I try not to buy from big supermarket chains but from small local farmers and that also practice social justice”. IntSD3 regards it more in a sense that “environment is also strongly connected to social problems”. IntSD2 speaks of justice and that everyone should have equal opportunities. For example, “you need to have certain knowledge about how to shape your diet which is why it’s very often called for upper class, white people even” (IntSD2). It should be “approachable for everyone to make decisions that are more environmentally sustainable”. IntSD2s opinion is supported by IntRD1s belief that different access to knowledge influences food choices in a different context:

[meat] is a strong class divider. It’s almost like you could see that [...] following your educational level how your meat intake goes down. And your diet becomes maybe more and more plant based, especially with high processed meats. (IntRD1)<sup>4</sup>

Sustainable food choices are connected to the overall term of sustainability and when asking about sustainability, my interviewees considered future generations, direct connections between sustainability and the environment. Clarifying the term

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<sup>4</sup> IntSD2s opinion is supported by, among others, Cirera & Masset (2010) and Milford and colleagues (2019) that higher education is connected with lower meat consumption.

sustainability could help explain eventual differences in food behaviour. IntSD1 and IntSD2 brought up the definition of Brundtland: “meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs” (UN. Secretary-General & World Commission on Environment and Development 1987:24). This was frequently discussed in the SD program. Some of my interviewees included different aspects of the concept of sustainability, being economical, social, environmental, and governmental.

My interviewees have also criticised the concept of sustainability. In their opinion, sustainability is a complex and challenging term because various perceptions exist on what sustainability indicates. IntrRD1, for example, regards it as a “common and shared framework for change”. For IntrRD2, it is about however, “preserving the environment”, as well as for IntrRD4. According to IntrRD2, it is a paradoxical concept. Furthermore, IntSD2 says that the term is missing a historical and temporal scale.

## 4.2 Perception of Environmentally Friendly Diets

During the interviews, reoccurring themes of what my interviewees find important in nutrition emerged before I even asked about diet specifics. Hence, they hinted on what environmentally friendly diets consist of before the 6<sup>th</sup> section, diets, of the interview, where I ask them specifically about diet questions. Below is the list of repeatedly mentioned themes and components of environmentally diets:

- ☉ Fair
- ☉ Healthy
- ☉ Local and regional
- ☉ Meat reduction or abstinence
- ☉ No or less processed foods
- ☉ No or less supermarkets (instead small local farmers)
- ☉ Organic
- ☉ Seasonal
- ☉ Tasty
- ☉ Vegan
- ☉ Vegetarian

When I asked about their understanding of an environmentally friendly diet, the varying ideas of an environmentally diet have similar concepts. It is roughly divided, and among those are overlapping opinions. In brief, the most popular answer was veganism. Also, the importance of the location where you live was

often emphasised, and flexitarian and focus on green protein was mentioned, as depicted in Figure 3.

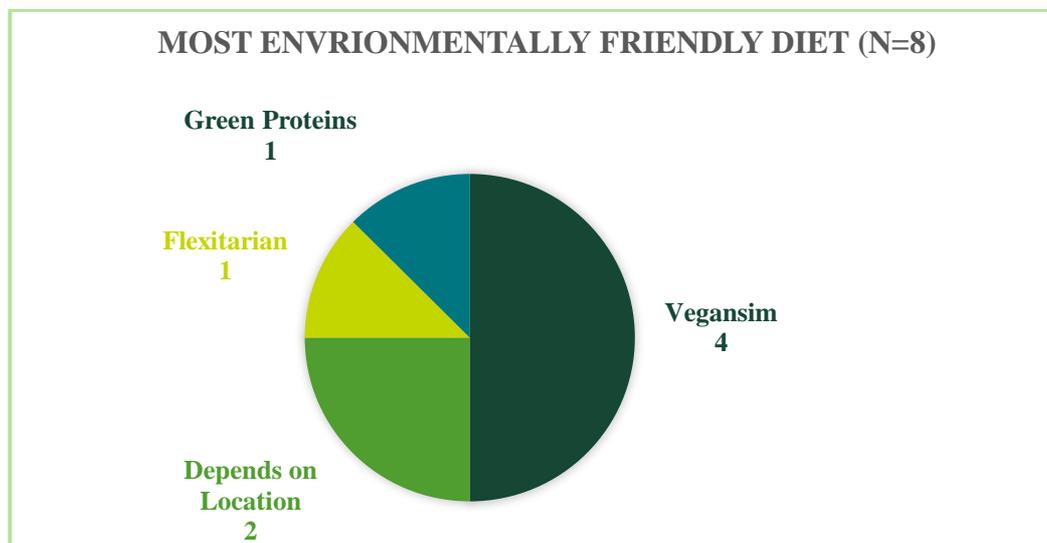


Figure 3 Most Environmentally Friendly Diet (n=8)

In the Western World, four of my interview participants (IntSD2, IntRD4, IntRD2, IntSD4) regard the vegan diet as the most environmentally friendly diet and IntSD3 in an urban setting. However, there are distinctions and specifications to take into consideration.

IntSD2 emphasises that it depends on the vegan diet. In his opinion, a very frugal vegan diet is the best food choice, even though it is very unattainable and boring. He does not consider a vegan who eats numerous avocados as sustainable since avocado plantations have high water consumption. As the only one, he mentions that spices are unsustainable. In addition, he sees eating environmentally friendly on a scale “very minimal without barely any variation or to the opposite extent” (IntSD2).

IntRD2 describes vegan as the most environmentally friendly diet and highlights that ideally, when everyone contributes to reducing their ecological footprint, in the future he could eat meat once a week if ethically produced, and the animals had a happy and good life, for example, from his grandparents’ farm. Furthermore, he has a strong opinion about fish. He regards eating fish as very harmful to the environment as it destroys the oceans.

IntRD1 regards the topic of the question of what an environmentally friendly food diet is a hot topic and says that

based on maybe or green proteins and having meat as a very occasional element in your diet, when being locally sourced and green. (IntRD1)

His clarification of what green implied is

that we would eat the proteins maybe previously or now as well grown for cattle or for feed and instead use them as a prime protein. (IntRD1)

After I followed up, he confirmed that his perception of the most sustainable diet leans towards a plant-based diet. IntSD3 regards the vegan or vegetarian diet as the most environmentally friendly diet if you live in an urban area as it can reduce the individual's ecological footprint.

I don't find it disturbing if people say but vegan is the most sustainable diet, but it really depends on where you are, if, I guess if you live in the middle of Alaska, where of course, maybe it's easier for you to, kill an animal that will last you for a much longer period of time. And also, if you, live in the cold for six months, and so much more difficult to grow things, then of course, it's not the case. But if we're thinking about urban like an urban setting, for example, then I think that being vegan can like decrease, or even vegetarian. It's already a super cool thing. Like it can decrease like environmental burden quite a lot. But is still the thing that most important thing for people to be aware. So even if they are flexitarian, for example, then maybe they would just do whatever, they could be more sustainable or like less harmful depending on where you are. (IntSD3)

Almost everyone agreed on the regional aspect, but IntRD3 strongly focused on the regional aspect and protecting small scale farming:

It depends where you live. So, I don't think it's very sustainable if we here in Europe start eating chia seeds, for example. I guess in Sweden, it would be a lot of wheat and potatoes and onions, carrots, and kale. But if you're in Italy, it would be something else. So, I guess the most important thing is that it's regional and sustainably produced and then you can do so much wrong. (IntRD3)

and she continues:

Organic, regional, social justice is important and that it is not from supermarket chains. Okay, I hate supermarket chains. You can, you have to write it, quote it. (IntRD3)

IntSD1 has similar views to IntSD3 in terms of a flexitarian diet and that the diet is strongly dependent on the location. Both of them grew up in Southern Europe.

My opinion, the most sustainable diet is the flexitarian diet. [...] The consume of meat should be reduced in general by everyone [...] if you are vegan or vegetarian, you base, you eat a lot of vegetables or fresh products which in some places in the world are not available or less available [...] For example, that in Italy or Spain or Greece, which are southern countries in Europe, the target should be different from a Swedish person or Norwegian person [...] I don't think there is like a unique diet that is more sustainable, but it should be adapted to the context where you are, and especially using local resources that are more available and more

sustainable [...] I don't vegan is a solution. I think the impact is less overall compared to a non-vegan person. (IntSD1)

IntSD4 who herself is a vegan says “maybe try to eat as plant based as possible. But don't restrict yourself.” However, she contradicts herself with another statement of hers

Restrict yourself in a view things [...] enjoy life because I don't think it's a problem if you eat an egg every now and then or a piece of cake that has some milk, once a week [...] keep in mind that plant based is the best option. (IntSD4)

As meat has been mentioned numerous times during my interviews and I have included an explicit question dedicated to meat because it is widely discussed in literature, I decided to take up the conversation on meat.

In general, the perceptions around meat go in a similar direction and agree on many points. My interviewees coincide on how damaging meat production is on the environment, in terms of GHG emissions and water consumption. Most of my interviewees indicate the importance of context such as in terms of location and animal welfare. In terms of location and animal welfare, IntRD3 states that, for example in Tirol, some parts cannot be used for other agriculture, so the cows herding on the mountain do not harm the environment and have a nice life. Or IntSD3 says that living in Alaska, or in the cold, it is tricky to grow stuff. Plus,

I don't see a problem with animals being part of the food system, and it's just that I actively choose not to eat things that contain animal products given their burden on the environment. (IntSD3)

IntRD1 states that if he had more money, he would seldomly purchase “good meat”. A correlation between education level and meat consumption has been brought up by IntSD2 and IntRD1 which coincides with the earlier mentioned necessity of knowledge creation and getting informed.

Sometimes different interviewees refer to different points that no one else says. However, they contribute to strengthening other mentioned aspects which all go in direction of reducing meat. For instance, IntRD2 brings up that if he could not kill an animal, why should someone else do the job for him:

I want to feel [...] good with my environment and so I couldn't eat plenty animal knowing that I won't be the one who killed it because if I can't assume this part of the job, I don't see why someone else should kill it, why in general an animal should die for my own personal well-being. (IntRD2)

The topic of meat and food waste seems to be a bit of a dilemma. IntSD2, for instance, is uncertain what is the lesser of two evils, staying committed to not eating meat or letting the meat get thrown away. IntSD2 currently sticks to the first, whereas IntSD1 to the latter. IntSD3 is also of the opinion that it is okay to eat something before it gets thrown away, but she does not do it due to intolerances.

IntRD2 is the only interview participant who mentions the refrain from alcohol and tobacco for personal and environmental reasons. Only IntRD1 says he drinks more alcohol on the weekend, but this gives no room for interpretation if he shares IntRD2's opinion. Most of my interviewees alluded to drinking coffee. Though, none of my interviewees voiced their views on coffee or other beverages; most of them primarily focused on food and did not include beverages in diets. Hence, I will exclude beverages.

### 4.3 Influences on Food Choices

First, I will provide an overview in Figure 3 of essential aspects concerning food choices. I prepared a question where my interviewees ranked what they regard as most to least significant regarding influences on their food choices (see Appendix 1). The interviewees' ranking choices and explanations mostly correlate with other statements given during the interviews, sometimes with non-key deviations. To simplify and provide a clearer overview, I have found following colour schemes:

- Green: self-decisive aspects with planetary benefits (environment, animal welfare, health, availability)
- Blue: cultural aspects and external influences (culture, finances, gender, surroundings, religion)
- Orange: individual preferences (taste, habit, time, allergies and intolerances)
- White: other

I include Figure 4 because it enables an overview of the relations of the overarching themes and how the various nutritional aspects have been evaluated. In this section, I will present the green factors concerning the environment, animal welfare, health, and availability, as well as the blue aspects, including culture, finances, gender, surroundings, and religion, while referring to Figure 4. Those results help me answer RQ2 to see how their food choices are formed and influenced. After that, I will touch on external and personal influences because those help me explain the limitations of following their idea of an environmentally friendly diet. Ending this section by presenting their impression if they say they follow their perception of an environmentally friendly diet.

ranking	IntSD1	IntSD2	IntSD3	IntSD4	IntRD1	IntRD2	IntRD3	IntRD4
1	environment	finances	environment	environment	environment	environment	health	animal welfare
2	animal welfare	availability	finances	taste	finances	gender	environment	taste
3	health	environment	availability	finances	taste	health	culture	surroundings
4	availability	health	health	health	habit	taste	other	environment
5	culture	other	taste	time	culture	finances	gender	health
6	taste	taste	time	habit	time		animal welfare	finances
7	finances	surroundings	surroundings	animal welfare	surroundings	culture	taste	culture
8	gender	habit	animal welfare	surroundings	gender	animal welfare	finances	habit
9	surroundings	time	allergies & intolerances	availability	animal welfare		habit	availability
10	habit	allergies & intolerances	culture	allergies & intolerances	availability		time	time
11	religion	animal welfare	gender	culture	other		availability	other
12	time	culture	religion	gender			surroundings	allergies & intolerances
13	allergies & intolerances	religion	habit	religion	religion		religion	religion
14	other	gender	other	other	allergies & intolerances	availability	allergies & intolerances	gender
						religion		
						time		

Figure 4 Importance of Nutritional Aspects, most important to least important

### 4.3.1 Environmental Influences

Looking at Figure 4, environmental aspects are of higher importance since the green elements are arranged at the top, apart from animal welfare which has different priorities among the interviewees. IntSD1, and IntRD4 rank animal welfare the highest, in the second and first place, while they are the interviewees who admit to loving cheese. Both participants state not being sufficiently aware of the dairy industry:

I don't know about dairy.[...] And cheese is also one of those things even though I know it is not the best solution for the environment [...] my craving for dairy products is too high. (IntRD4)

And,

Also, to be honest, I'm not that informed about the production of cheese. And also feel that there is less transparency about cheese, how it's produced in compared to, for example, you're buying meat right now, I think almost anywhere, like the meat you can see what is was born, raised, a lot of information about, so it's more transparent than I think cheese. (IntSD1)

IntRD4 regards the vegan diet as the most sustainable diet. In contrast, IntSD1 believes in the flexitarian diet being the most environmentally friendly diet and justifies his ranking choice that:

animal welfare because it's strictly correlated also with environment [...] it's a question of respect, I'm not against killing animals, but unless it's more against the system, the industrial system, the capitalist system, or whatever [...] I don't want to eat, for example, a chicken that has been intensively raised. (IntSD1)

This view resembles other interview participants that animal welfare correlates with environmental benefits or that animal welfare is a bonus of considering environmental factors in nutrition. For instance, IntSD2, who ranked animal welfare relatively low, states that

I kind of want to for animal welfare, like I know it is an important issue and I know for ethical reasons should be important, but for me, like I said, it's more of an added benefit that I have with the stuff that I kind of already do. I don't think I would alter my diet based on that, or at least to a certain extent, if there is a very clear option, say ecological. (IntSD2)

Similarly, IntSD4 and IntSD3, who both follow a plant-based diet, ranked animal welfare in the centre because it is not a priority for them as environmental aspects stand in the foreground. Plus, they dissociated from the animal welfare as it is a side effect of their food behaviour and has, thus, moved somewhat into the background.

Environment [...] already describes my diet which in a way can make animal welfare go quite further down the list. (IntSD3)

And:

Because we are so far away from it. And I didn't personally start because of the animals. I started because of the environment. And then by time you realise, it's also good that I do this for the animals. (IntSD4)

Discrepancies in the various rankings of availability of food products exist because of differing definitions. Assuming that availability is connected to the place of residence, then living in Sweden impacts the interviewees, such as for IntSD3

Being in Sweden influenced my diet. (IntSD3)

Subsequent, living in Sweden constitutes a further sub-theme. Most of my interviewees regard it as impossible to live entirely friendly because of being located in Sweden. In a geographic sense, e.g., there is a lower availability of regional foods. And in terms of the systemic reason, the system does not allow one to be 100 per cent environmentally friendly as one automatically has a larger footprint because of being a Western country, its intensified agriculture, and challenging access to buy from local farmers. I will detail when talking about my interviewees' external limitations to perform their perception of an environmentally friendly diet.

### 4.3.2 Cultural Influences

Noticeably, culture, gender, and religion are ranked at the bottom concerning the reasons behind my interviewees' food choices (see Figure 4). I consider it vital to go into the aspects connected with culture in more detail because these results are essential for the discussion using the Theory of Planned Behaviour (TPB). Specifically, cultural aspects help me reason the TPB variable Subjective Norms where I look at social pressure.

Culture as a concept is understood differently. The various interpretations of culture explain why it is ranked differently. The interviewees who ranked culture higher had a different understanding of culture than those who allocated it lower. In the first interview, I realised that people have different ideas of what culture means, which is why I always followed up when we came across the aspect of culture. Resulting from this, I identified four ideas of culture.

Firstly, culture is associated with being part of an environmentally friendly culture. For instance, IntRD1 regards himself as part of an "aware plant-based culture" and ranked culture in fifth place. Therefore, considering the aware plant-based culture is essential and plays a role in his food choices.

Secondly, culture is connected with nationality, such as with IntSD2, who puts culture in 12<sup>th</sup> place, connects culture, in nutritional terms, with Dutch culture, where he notices a different eating behaviour from his parents. Similarly, IntSD1 attaches culture to his Italian nationality, for instance, pasta or the Mediterranean diet, which he still incorporates in his food choices and consequently ranks culture fifth. Whereas IntRD3 connects culture with the region of origin, not in a diet sense but in the cultivated sense, for example, she does not regard chia seeds as part of the Austrian culture.

Thirdly, culture is differentiated between the culture they currently identify with, the environmentally friendly bubble, and the culture they grew up in. IntRD3, who ranks culture in the third place, explains

Yes, somehow, [the concept of culture] is a bit mixed now, but I think there are two different kinds of culture. Here, I am surrounded by mainly students in a very environmentally friendly bubble compared to something else. We all share similar values; a lot of us are vegan, vegetarian or other and if I'm home with my family who are also older, grew up with different values or eating habits and casual, I think that's a bit different. I guess I have both in me. (IntRD3)

Also, IntRD2, a vegetarian, first says that he considers himself part of French cooking culture because he appreciates taste but follows "we need to change up

culture” after mentioning that the French eat a lot of meat, or in Normandie, where he grew up, a lot of fish. His opinion goes hand in hand with IntSD4 who suggests “cultures can change and traditions” and “can be adapted to the circumstance”. She grew up in Germany with a rich meat culture and now eats mostly plant-based.

Fourthly, I am viewing my interviewees being students as the fourth concept of culture because most of the interviewees highlight that they are students throughout my interviews. I allocate my respondents being students in cultural ideas because it involves surroundings and norms. Moreover, the students’ master’s program is related to sustainability, and I specifically asked if they feel pressure from their program and peers. Therefore, the role of a student is relevant for discussing the Subjective Norm in the Theory of Planned Behaviour.

Being a student is linked with various characteristics. One, they all emphasise the financial restriction, two, being part of the SD or RDNRM program, and three, being part of a bubble, e.g., SLU-bubble or green bubble which connects to my first idea of culture where culture is associated with being part of an environmentally friendly culture. Also, they all state to be aware of their position of privilege as they are part of the upper or middle class.

For the second point, IntSD2 reported that he feels being part of the SD program, one needs to “fit the picture of an environmentalist”. His understanding of an environmentalist is

Anyone who actively alters their behaviour to get to what he thinks is right for social or ecological sustainability. [...] There is that active switch that you want to change stuff. (IntSD2)

Not only the program had an impact on him, but also his peers

I wouldn’t say the program itself more the people I met in the program because most of my friends are vegan, and I think when I came here, I’m contradicting myself here as well, but when I started the course, I was ovo-vegetarian but then when I hung around my friends for a while, I was vegan for like a good few months, but then I started working at the nations<sup>5</sup> and everything became very accessible. So I kind of changed into vegetarianism again, so it has had an impact. (IntSD2)

In contrast to IntSD2, other informants do not necessarily feel pressured to behave a certain way but were rather influenced by their master’s program. On the one hand, IntRD4 exemplifies that even though she gained more knowledge, her food behaviour has not changed.

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<sup>5</sup> “The nations are the social hub of student life with housing, scholarships, clubs, culture, pubs, association life, sports and much, much more.” (*Nationerna / Uppsala Student* n.d.)

[The RDNRM program] made me think of [my diet] more. [...] It has widened my horizons, but it didn't change my consumption. (IntRD4)

On the other hand, IntRD2 explains that the program has impacted his dietary behaviour.

I would say I've been more aware of what was happening in the world. [...] It changed a bit of my way perceiving the world and therefore, my habit. (IntRD2)

My interviewees indicate though that they would not have applied to the SD or RDNRM master's program if there was no pre-existing interest and knowledge in topics related to sustainability, such as IntSD4 who says that

Ending up in that program, you probably thought about a sustainable diet before. (IntSD4)

### 4.3.3 External Influences

As mentioned earlier on, living in Sweden limits my informants in their practice of ecological diet behaviour due to systemic and geographical restraints. Several interviewees state:

I try and don't [follow my idea of an environmentally friendly diet] I think, I really try it and actually look forward to be back from Sweden for a year then I can engage more in the field again [...] How I consume got much worse when I went to Sweden. (IntRD3)

IntSD3 supports this statement:

Sweden is a bit difficult to think about fresh food and everything. [...] In a way, it feels very weird to me to be in Sweden and eat a lot of fresh things as I would in Portugal. [...] To eat things that are in season, that's also very relevant. And also, sitting in Sweden, buying things that grow in Sweden, but although it's very limited to potatoes, and carrots and apples and berries in the summer, but I also follow that as well. Even though that might lead to like some restrictions. (IntSD3)

Another student puts it this way:

Yes, exactly, kind of because for example here in Sweden, all the vegetables that I buy, they're all imported. And of course, they have an unsustainable consequence because of their emissions. But I rather prefer that than meat, but if I could, I think a little bit, yes but still meat is no definite answer. And in fact, follow this. Also, because I cannot be vegan would be very difficult for me [...] because I love cheese. (IntSD1)

All of my interviewees at some point indicate the role of the system they are apart from, that the system does not allow them to be as environmentally friendly as possible even though actively attempting to reduce their carbon print.

Fundamentally, I wouldn't [consider myself as an environmentally friendly person] because I'm a person living my life in the city of Stockholm. And obviously, on a global aspect, I'm one of the bad ones. Like one of the few per cents that are truly not being environmentally stable in any way. But then within my context, I would consider myself as aware. (IntRD1)

IntRD2 and IntRD3 take it further and exercise criticism on the supermarket chains in Sweden.

I think one big problem with our food system is that we destroy small scale agriculture, and by that also a lot of biodiversity in agriculture and the products we have in our supermarkets. Also, how they are produced is not so nutritionist. (IntRD3)

Later on, she brings up the negative consequences of supermarket culture again. "The supermarkets destroy not just the meat production, destroys the food production" (IntRD3). IntRD2 supports her claim and raises the concern that in Sweden, you hardly have other possibilities almost than buying from supermarkets except seldomly from the SLU permaculture, which he would like to support more.

I'm still eating eggs so at least I'm buying the most ecological farm produced eggs, if possible. One thing I really appreciated when I was in Scotland, what was environmentally friendly, was going to the smaller markets with local purchases which doesn't happen here in Uppsala, because this is a supermarket country. I hate it. These people are not aware that small business can be particularly relevant. (IntRD2)

Another constraint is financial aspects because of being a student. The handling of it differs, though. IntRD2 and IntSD1 adapt their purchasing behaviour to, in the end, buy something more qualitative and sustainable. IntRD2 refrains from alcohol and tobacco to spend more money on more sustainable foods such as ecological farm-produced eggs. Similarly, IntSD1 prevents buying brand products to get organic food. Others prefer buying ecological food but cannot afford it or perceive other sustainably produced products as very expensive and frame it as a goal for the future when they have more money available.

Interestingly, some interviewees go back to former food choices when surrounded by their family and culture. This correlates with the ranking of surroundings in figure 4. Especially IntRD4 commented that she adapts her diet when visiting her grandmother. She is also the one who ranked it the highest.

There was one situation where the caretaker of my grandma made some pastry and there was some salami inside and she didn't know that I don't eat meat and I didn't want to eat it. Because she made this stuff for me because I was living there, I of course ate it. So some stuff like this is definitely affecting me I think. Then the environment comes definitely afterwards. (IntRD4)

#### 4.3.4 Personal Influences

IntRD1, IntSD2, and IntRD4 eat fish for special occasions or treat. IntSD3 and IntSD1 always eat vegan or vegetarian, no matter what. IntSD4 most of the time but sometimes makes exceptions, for homemade pasta with eggs from her father or fika. These behavioural anomalies often emerge when spending time with their families or going to a restaurant.

IntRD3 is currently pregnant, which has impacted her dietary behaviour.

Before I got pregnant, I wasn't so craving for food. [...] I need these vitamins, but I can't eat just apples because it is winter. And I'm sick of apples. And now you know when I see strawberries from Morocco, I'm like, fuck this, I'm buying strawberries from Morocco because I'm pregnant and I have the right. You know, it's bullshit. But I think I would handle the situation a bit different if my situation were more stable. [...] I would generally say I was not so impulsive. [...] I wouldn't have bought them or I would have starved as in midday if I wouldn't have not found anything sustainable. I want to eat you know. Now some things are really disgusting to me. (IntRD3)

She is aware that currently, she is not precisely living after her view of an environmentally friendly diet but hopes "to be better again when I'm living in a more stable place" (IntRD3).

IntRD2 who sees vegan as the most sustainable diet, cannot abdicate eggs he needs for cooking and his recipes but would like to change in the future.

This is my own dissonance with the dissonance that I was taking. Whether I said that I wasn't making any effort. I personally enjoy baking a lot. And without eggs this is particularly complicated to do anything. You can currently do some stuff, you have complements, of course, but like this is one of the things I really struggled with, I have to admit and like I assume that I have to change this. I would be happy if science could produce fake eggs, like which will be ecologically friendly and not consuming too much energy because obviously even when you're producing vegetables you are using some part of the area which could have been rewild or whatever. But I agree this is one of my biggest issues with like criticising the other while I'm myself assuming of not doing enough effort. (IntRD2)

In general, all of them perceive themselves as environmentally friendly. However, IntRD1, IntSD2, IntRD4, IntRD2, and IntSD1 state that they are not perfect. IntSD4 summarises and delivers a significant quote that

I do believe that many people in the program already are quite, like most of them, do live a sustainable life and study this and I have a feeling that that's not always the case in sustainability studies but in our program [of SD]. (IntSD4)

Overall, these results indicate a shared understanding of what constitutes an environmentally friendly diet and mainly differs in the degree of meat consumption.

Moreover, food choices are influenced, among others, by cultural and environmental aspects and restricted by external, e.g., living in Sweden and the financial situation as a student, and personal factors, e.g., pregnancy and taste. Next, I turn to the discussion to analyse my results.

## 5. Discussion

The presented themes in the result section helped me answer my two research questions. In the following, I will discuss my results using the variables of TPB. The TPB variables I am focusing on are Perceived Behavioural Control (PBC), intention, and behaviour. With PBC, I can describe rationales and influences for the decisions and actions regarding my interviewees' food choices, which answers RQ2. With intention, I describe their perception of what constitutes an environmentally friendly diet, answering RQ1. With behaviour, I can ascertain what food choices they think they make, which also answers RQ2.

### **Attitudes**

All my interviewees present a positive attitude toward an environmentally friendly diet and hence, evaluate it as likely to eat in an ecologically friendly way. This is even before we approach the topic of environmentally friendly diets or diets in general in the interview. My interviewees mention the importance of environmentally considerate diets and in addition, they all say that they include sustainable dietary aspects in their daily lives. Thus, the positively evaluated attitude on eating environmentally friendly positively influences the subsequent intention and the potential to perform an environmentally friendly behaviour.

### **Subjective Norms**

As presented in my results, my interviewees are influenced by various social settings, which have different effects on their intention and resulting behaviour. Depending on their surroundings, their dietary intentions change, so how they want to eat, and what food choices they end up making. On the one hand, people in my respondents' current surroundings at SLU or UU are more accepting of eating environmentally friendly because they are involved in a sustainability-related master's program. Hence, as mentioned by IntSD2, there are a lot of environmentalists and people who follow a vegetarian or vegan diet. In brief, none of my interviewees expressed feeling pressured by their peers but positively connotated that they were influenced by them. I even had the impression it was going in the direction of inspiration. IntSD1, for example, adapted his behaviour, e.g., reducing his meat consumption, when he made vegetarian friends, resulting in his subjective norms changing, which also impacted his intention and behaviour on eating environmentally friendly.

On the other hand, people in some of my interviewees' upbringing have a different influence on the dietary behaviour. Hence, the social influences differ among my interviewees. For instance, IntSD1 and IntRD2 criticise older generations and do

not adapt their behaviour when spending time with their relatives. Others, such as IntRD4, IntSD2, and IntSD4, adapt their eating behaviour according to their families when visiting. For IntRD4 and IntSD4, one reason for adapting their eating behaviour is that they do not want to disappoint their family members if they have prepared meals. IntRD4 is the only one who also ranked surroundings relatively high and thus, seems aware of the impacts her surroundings have, for her subjective norms have more influence. In contrast, IntRD2 and IntSD3 remain firm with how they say they eat, as IntRD2 eats vegetarian no matter what.

Interestingly, my interviewees appear to be detached from their “original” (food) culture, and I would even say that they now belong to a “green” culture or bubble. Therefore, it seems that their values and perceptions redefine their identity and behaviour. In brief, the social environment in Uppsala where they currently live, supports following an environmentally friendly diet.

My interviewees have similar prerequisites from attitudes and subjective norms, as seen above.

### **PBC**

As described in the result section, I could discover both personal and external reasons that control their idea of what an environmentally friendly diet consist of. In terms of personal obstacles, taste, cravings, stability, and knowledge seem the most outstanding. For the latter, knowledge can sometimes lead to behavioural change, such as for IntRD2 and IntRD1, who incorporated that into their daily lives after gaining more awareness of the consequences of their behaviour, for instance IntRD1 considers the water value in his diet. This supports Vermeir & Verbeke's (2006) view on that knowledge directly impacts behaviours. Whereas for others, such as IntRD4, more knowledge does not motivate her to pursue a vegan diet which she regards as the most environmentally friendly diet. She is also one of the interviewees who highlights the importance of getting informed and then acting afterwards on the newly gained information. Hence, I thought if she put in more research as she suggested she would refrain from eating dairy. However, in her case, having awareness is not enough to change her food behaviour because she is aware that not only does she not know enough about the dairy's adverse effects, but her craving for dairy accompanies this limitation. Her case proves IntSD2's point that knowledge is not enough to change behaviour if lack of motivation. Whereas IntSD1 eats cheese occasionally as he perceives the flexitarian diet as the most ecological diet but also indicates that he is not entirely aware of the negative impacts of the dairy industry. Those findings support other scholars, such as Liu et al. (2020), that knowledge is not a significant indicator of environmental behaviour.

Cravings played different roles for various respondents. One of my interviewees, IntRD3, is pregnant, which affects her impulsive appetite and resulting behaviour which she otherwise has more control over. In terms of taste, some perceive this factor more difficult than others. For some, the taste of cheese does not influence the behaviour and aligns with the intention to eat in an environmentally friendly way, but for others, the taste of cheese is more important. However, this differs again because IntSD1, for example, believes in the flexitarian diet being the most ecological one, so it also has a different meaning for him.

Contrary to the personal limitations, financial, systemic, and geographic constraints influence the interviewees involuntarily. Financial aspects hinder, for instance, buying the organic product supposed to non-organic with a larger carbon footprint. Hence, the financial situation of being a student can affect their choices. Systemic and geographic constraints are harder to tackle unless you move to a different place, such as IntRD3 who is looking forward to moving back to Vienna where in her opinion, she has more control over her sustainable eating behaviour. For one, she can go to farmer's markets and buy freshly regionally produced legumes, vegetables, and fruits.

Also, as most of them mention, living in Sweden, a country with a massive footprint and capitalist system, makes it nearly impossible to live with a low carbon footprint. One is dependent on so many factors, such as the supermarkets that use up a great deal of energy.

Motivational indicators also characterise PBC. My interviewees, at some point, all refer to having previous interest in environmental issues towards acting in an environmentally friendly way because otherwise, they would not have applied to the SD or RDNRM master's program. I have the impression that seeing the harm done to nature serves as a motivational factor to do something about their behaviour. Especially IntRD1 indicates the feeling of urgency.

### **Intention**

When comparing the results of my interviewees' perceptions of an environmentally friendly diet with the definition of the Food and Agriculture Organization of the United Nations & World Health Organization (2019), which includes environmental, cultural, accessible, economically fair, and health factors, similarities become visible.

In terms of environmental factors, the interviewees consider products with a lower environmental impact, and thus, products that are produced regionally, seasonally, organically, and no or fewer animal products. Another coincided factor is the

inclusion of social justice, meaning that they consider supporting small farmers and trying to buy products where workers are treated fairly.

Many interviewees also highlighted the health factor and refrained from eating no or less processed foods. The mentioned factors also align with the planetary health diet from EAT (EAT n.d.d). However, as Bailey & Harper (2015) suggest, there is no utterly consentaneous perception of an environmentally friendly diet in the details. I can backtrack this from the beginning of the interviews where I asked about the understanding of sustainability. IntSD2 sees a weakness in the lack of consensus on the concept of sustainability, which is supported by IntSD3, who says it can be misused for greenwashing and runs through different levels, such as food diets. All of my interviewees agree on several aspects but differ on the degree of, e.g., meat consumption.

Interestingly, the two plant-based interviewees, IntSD3 and IntSD4, rank animal welfare relatively low, whereas my two cheese-loving interviewees rank it quite high. Hence, I wonder if questions of animal well fare are more present for IntSD1 and IntRD4 as they are confronted with the choice of purchasing animal products and the related consequences.

The interviewees' bachelor's background influenced their perception and focus. In addition, the intention focus appears to differ depending on the educational background. For instance, IntRD3 studied agricultural sciences and criticised supermarkets, and emphasises buying from small farmers and markets. IntSD3 studied biological engineering and focuses more on pesticides.

In general, I gather that the intention to eat environmentally friendly of SD and RDNRM students is quite high as they dedicate their time and probably future to sustainability topics and are, therefore, likely more motivated to live environmentally friendly. However, the degree of intention can vary. For instance, IntRD4 did not place the environment in the top three reasons for the ranking question regarding importance of aspects concerning nutrition, and therefore, her intention to have an environmentally friendly diet is not as high as the other interviewees, which you can see in the resulting behaviour.

### **Behaviour**

Here, I will discuss how intention and PBC influence the behavioural outcome. As mentioned in the theoretical framework and methodologies data analysis section, PBC can either directly affect the behaviour or indirectly through the intention. Otherwise, the intention is the antecedent of behaviour.

In some cases, the PBC is stronger than the intention, resulting that their idea of an environmentally friendly diet cannot be completely performed. For instance, living in Sweden limits buying regional fruits and vegetables, especially in the colder months, as they are imported. This challenge seems more significant for people who grew up in Southern Europe, such as my Italian and Portuguese interviewees, because they are used to having fresh regional produce all year round. This PBC impacts the behaviour and the intention, as IntSD3 questions to revise her choice of diet if living in Northern Sweden and start eating meat because meat in colder locations is more sustainable.

In addition, it is challenging to include justice regarding environment and society in Sweden because of the lack of availability to purchase from small farmers, making consumers dependable on supermarkets. Buying from supermarkets can imply to not be able to complying with their perception of buying sustainably produced food products with fair working conditions. IntRD3 and IntRD2 both heavily criticise the supermarket system in Sweden. Ultimately, their options are limited, connecting to IntSD2s point to partake in debate and protest to enable change which he occasionally takes part in. This aligns with the appeal of EAT to demand change in businesses and policymakers (EAT 2019).

## 6. Conclusion

This study contributes to understanding if and why people involved in sustainability have various perceptions and behaviours of environmentally friendly diets. Moreover, this study shows a consensus on what aspects are included in an environmentally friendly diet. The mentioned aspects were quite broad, and I received many ideas from my interviewees. The perception of an ecologically friendly diet differs mainly in the degree of animal product abstinence.

In terms of performing their view of an environmentally friendly diet, I had the impression that most of them eat the way they perceive the best way is but reflect and are aware of where they could improve. Nevertheless, it is challenging to conclude whether they follow their idea of an environmentally friendly diet. The only way to truly describe that is by observing their dietary behaviour over a more extensive period. That being said, comparing their various statements throughout the interview, my interviewees mostly remained consistent.

In retrospect, it would have been interesting to ask my interview participants what encourages them to act and eat environmentally friendly. I do not consider the role of values that could be extended in further research. My research tells me why their perception of an ecologically friendly diet does not always result in behaviour. Still, it does not tell me why personal restrictions are more significant for some individuals than for others. Future research could bring light to this and why motivation differs among people involved in sustainability. Even with the essential attitude and intention of following an environmentally friendly diet, I could see why people might not follow it in the end. Thus, I have gained a better understood how behaviour is influenced.

In the future, it would also be interesting to compare the results of this study with students not involved in sustainability, using the same questionnaire, to describe if the perceptions of an environmentally friendly diet and the resulting behaviour have significant differences.

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# Popular Science Summary

## **Why do people eat what they eat?**

**Looking closer at sustainability students' perception of an environmentally friendly diet and their eating behaviour.**

The research contributes to understanding if and why people involved in sustainability have various ideas about what eating environmentally friendly means and why they eat how they eat. Why is it important to understand why people eat how they eat? We need to transform the food sector and with that also belongs individuals' diets because the food sector causes GHG emissions, deforestation, and water scarcity. Hence, it contributes to massive consequences for the environment and climate change. However, no blueprint describes how one should eat environmentally friendly. Therefore, it is interesting to look at people involved in sustainability, what they think an environmentally friendly diet is, if they actually eat that way, and if not, why.

I interviewed eight students from the Sustainable Development and Rural Development and Natural Resource Management masters' program. I interpreted my results by using the Theory of Planned Behaviour. This theory helps me understand why people eat how they eat.

The results show that the interviewees consider diet as a vital tool to reduce their ecological footprint. In brief, there is a consensus on what an environmentally friendly diet includes and mainly differs in the degree of animal product abstinence. The interviewees take fair, healthy, local, less processed foods and supermarkets, organic, and seasonal aspects into consideration. Furthermore, the interviewees try to eat in an environmentally friendly way, but personal (e.g., taste, cravings, pregnancy) and external (e.g., financial, systemic, geographic) reasons restrict them. The research provides insight into why people might not follow their idea of an environmentally friendly diet. Still, it does not explain why personal restrictions are more significant for some individuals than for others. Also, it would be interesting to compare the results of sustainability students with people not involved in sustainability to investigate if there is a difference.

# Appendix

## **Interview Guideline**

### Introduction

- Before (while) recording ask again for permission
- Clarification how I handle data (transcribe, analyse, and interpret)
- Ethical aspects: confidentiality and anonymity
- Emphasise I want to hear their opinions and perception as people who are exposed to sustainability transformation (not giving away what my aim/intention is as I do not want to influence their answers if I expose them that I specifically would like to find out about nutrition)

### Background Information

- Gender
- Age
- Country of origin
- Rural or urban
- What is your educational and professional background?
- Children

### Definitions/Understandings

1. What comes to your mind when you think of sustainability?
2. What comes to your mind when you think of the environment?
3. What comes to your mind when you think of environmental awareness?
4. What comes to your mind when you think of acting environmentally friendly?

### Behaviour

5. Why or why not would you consider yourself as an environmentally friendly person?
6. In your opinion, what is the easiest behaviour change an individual can pursue to reduce their ecological footprint?
7. What do you do in your personal life in being environmentally friendly?
8. How do you decide to purchase something? / What influences your purchasing behaviour?

### Values

9. What are your values concerning the environment?
10. What are your values concerning nutrition?

### Diet

11. Take me through a normal studying day, what you would eat and drink?
12. Take me through a weekend, what you would eat and drink?
13. Is there a difference in eating in (at home) and out (e.g., restaurant)?
14. What are the reasons how and what you eat?
15. How would you explain your diet?
16. What do you think is the most sustainable/environmentally friendly diet?
17. Do you eat that way? / (How) Does your diet align with your values/perceptions of an environmentally friendly diet?
  - a. When no – why not?

18. Ranking question: If you could rank the importance of aspects concerning nutrition

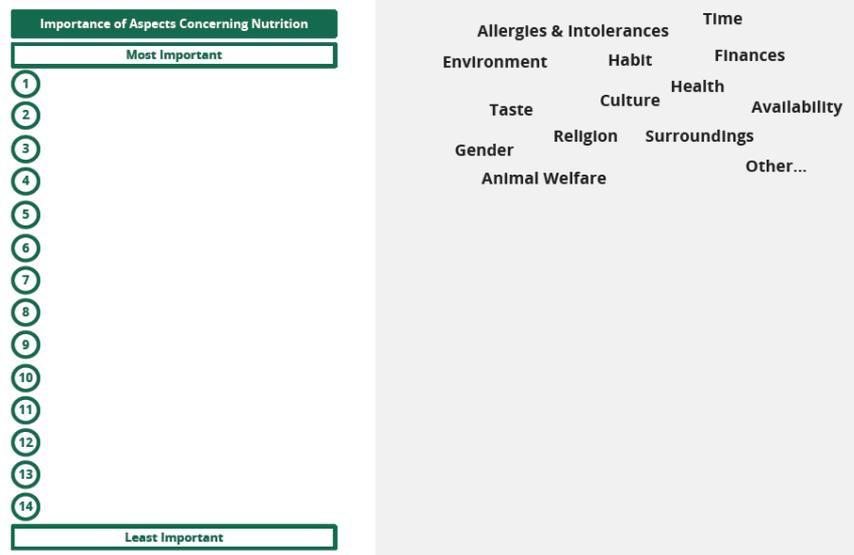


Figure 5 Ranking Question Zoom via Concept Board

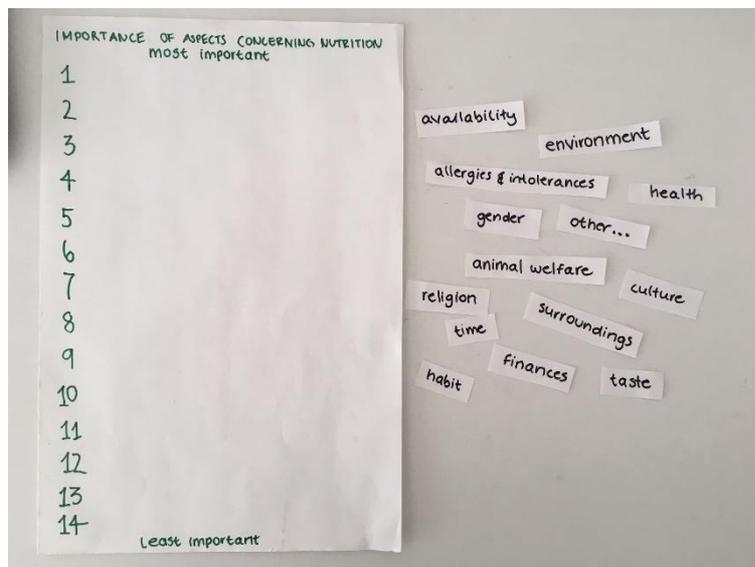


Figure 6 Ranking Question IRL

19. Talk about ranking

20. Meat consumption is often themed in literature – What is your take on meat?

21. Do you think the SD program influenced you (in your diet)? - how tell me more about it –

22. Do you feel social pressure from your peers?

- a. What happens? / How does it feel? / How do you handle it?
- b. Are there discussions?

Wrap up

- Any further remarks you would like to add?
- Thank them for your time and insights