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CONSUMER BEHAVIOUR TOWARDS PLANT-BASED FOOD AND THE ENVIRONMENTAL IMPACT OF DIETARY CHOICES

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ABSTRACT

The research problem in this thesis is the lack of information about the factors affecting on the consumption of plant based foods and the food buying behaviour among students of Tallinn University Of Technology. The research aim is to bring out the main motives and barriers for consuming plant-based foods as well as determine how the environmental factors influence consumers' food buying behaviour. Author uses a quantitative research method to conduct a survey.

Most of the respondents prefer to eat plant-based food instead of animal-based food. The main reason to consume plat-based food are health reasons, followed by ethical and environmental reaosns. The main barrier to consume plant-based food is that it is not convenient for the respondents. Other motives are nutritional reasons and taste preferences. Results also show that most of the respondents are affected by the environmental impact when buying food. Most of the respondents prefer buying locally produced food due to environmental impact of food production. Based on the findings of the research, the author suggests food sellers and marketers offer more easily accessible plant-based food with more variety near the campus of Tallinn University Of Technology.

Keywords: Plant-based food, environment, motives, buying behaviour

INTRODUCTION

Plant-based diets are becoming more popular and already several alternatives to meat have been presented to consumers. Impacts of the food production are widely known, the environmental as well as the ethical issues. Yet, most of the Europeans follow a mixed diet and use meat as the main source of protein (De Boer et al. 2006) and the consumption of meat is predicted to keep on growing. (Smith et al. 2013)

The research problem of the thesis is the lack of information about the factors affecting the consumption of plant based foods and the food buying behaviour among students of Tallinn University of Technology. This study aims to bring out the main motives and barriers for consuming plant-based foods as well as determine how the environmental factors influence consumers' food buying behaviour.

The main research questions are:

1. What motivates consumers to eat plant-based foods?
2. What are the barriers for consumers to not eat plant-based foods?
3. How does environmental impact influence consumers' buying behaviour?

Research topic was chosen due to the great environmental impact of agriculture and yet growing demand for animal-based food products. It is important to know what are the motivations and barriers when it comes to eating plant-based food, as the current consumption of animal-based food products is not sustainable. Knowing the consumer behaviour towards plant-based food among students of Tallinn University of Technology offers valuable information to eateries and food shops inside and near the campus. It is also important to know how the environmental impact affects consumers' food buying preferences for both marketing and food production point of views.

To gather the needed information the author concluded a quantitative online survey among students of Tallinn University of Technology. Author used a convenience method of sampling and to analyze data, descriptive data analysis was used.

This thesis is divided into three chapters. The first chapter focuses on the theoritical overview of consumer behaviour as well as the needs and motives. The second chapter gives an overview of the environmental impact of food production and brings out previous researches made on the topic. The last chapter explains the reseach method, results and discusses it further.

1. THEORETICAL OVERVIEW OF CONSUMER BEHAVIOUR

This chapter focuses on consumer behaviour and is divided into three subchapters. In the three subchapters the author focuses on consumer behaviour, the needs and motives of the consumer and the purchase decision making process.

1.1. Consumer behaviour

Consumer behaviour is the study of individuals and organizations activities around the purchase, use and disposal of products and services. Consumer behaviour also tries to study how consumers' preferences, emotions and attitudes affect the buying behaviour and how the process goes. (Solomon 2004) Engel and Blackwell describe consumer behaviour as "Consumer behaviour is the acts of individuals directly involved in obtaining and using economic goods and services, including the decision processes that precede and determine these acts". (Engel, Blackwell 1982).

According to some authors of the study of consumer behaviour there are two theories that distinguish between individual and organizational consumers. Individuals attempt to fulfill their consumer needs based on their personal consumer decisions and the willingness to do so. Organizations make purchasing decisions as a rational group based on the organizational needs. (Wilson 2000, 780-782)

People rarely stop to think about their own consumer behaviour, as it is part of everyday life and especially in case of smaller purchases, such as grocery shopping. They are often made without further thought, and are treated routinely, it is almost like an automation. (Bergström, Leppänen 2015, 121.) Macdonald & Sharp (2000) suggest that consumers are just passive observers when making a purchase, who spend little time and cognitive effort when it comes to choosing brands. Common everyday purchases are chosen with simple decision-making aspects such as price of the product. These habitual decisions of consumers can be described so that there is even no decision made in conscious cognitive processing, before the action. (Macdonald, Sharp 2000, 5-6)

When making bigger purchases, for example a house, more calculations and considerations come into play. The choices made are not coincidence, but a result of several influencing factors. The process of consumer buying behavior always has the same basic features, but the intermediate stages vary, depending on the consumer, the product and the situation. (Bergström, Leppänen 2015, 121.) The length and extent of the consumer's purchasing process varies according to how important the purchase is and how big the risks may be associated with the purchase. The length of the process can vary considerably depending on the offer being purchased. Larger purchases that require a lot of consideration, as well as doing background work can take a lot of time (Kardes et al. 2011)

1.2. Consumer needs and motives

All people have the same basic needs and even as we are all individuals, new needs can not be created. Probably the best known model that reflects our needs and their connections, is Abraham Maslow's hierarchy of needs. The hierarchy of needs is a pyramid shaped model with five levels, as seen on figure 1. The pyramid starts from the basic necessities and ends on the top level with self-actualization needs. On the lowest level there are physiological needs. These are the ones that are needed to survive including food, water and sleep. The next level is safety, which includes physical safety and security as well as financial security. Belongingness and love needs, which include friendships and being part of a community, is in the middle level. On the fourth level there are esteem needs, which includes the need for appreciation and respect. On the fifth and top level, there are self-actualization needs. These needs refer to the person's self-fulfillment and seeking personal growth. Every person has a tendency to rise up in the stairs and reach the final step, but not everyone can succeed in it. According to Maslow’s theory, the needs of the lowest level must be fulfilled before moving to higher levels can be done. (Kotler 1990, 169.)

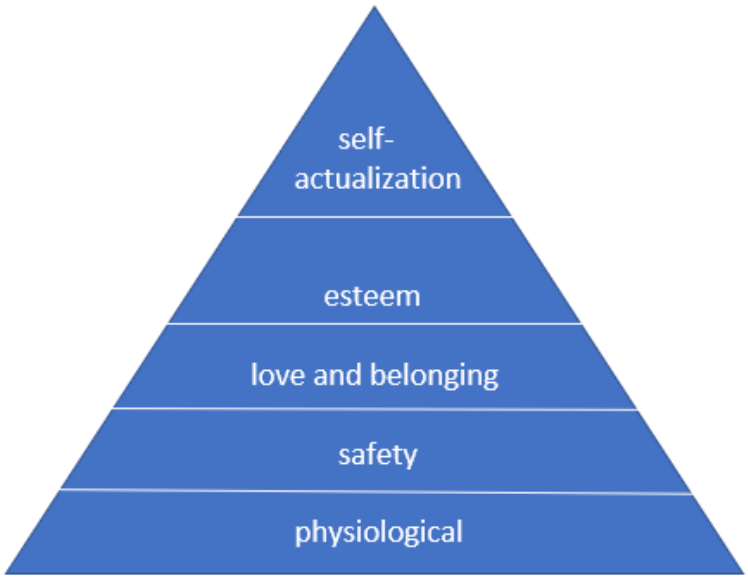

Figure 1. Maslow's Hierarchy of needs
Source: (Amy Sippl 2020)

When a consumer has acknowledged the need, he gets a motivation to fulfill this need, which again makes the consumer act and behave in a certain way. However, a consumer is not just merely trying to meet his or her needs, but also strives for goals by making decisions. The consumer has a motive that guides his or her buying process. The motive is the reason why the consumer acts and buys a product or a service. The need needs to be significant enough for consumers to act, otherwise the need will be ignored. Thus, motivation determines what we do, how we do it and why we do it. (Solomon et al. 2002, 247; Kotler, Keller 2009, 201.)

In addition to needs, motives are influenced by the consumer's internal as well as external factors and marketing communications. Motives can be divided into rational motives and emotional motives. Rational motive can be hunger (human needs food) and emotional motive can be trendiness, such as a trendy water bottle. consumers' motives can also be in conflict with each other and rational and emotional motives can be mixed. (Bergström, Leppänen 2009, 109.)

These two different motives differ depending on the amount of necessity. The more rational the motivation is, the more necessary it is to implement. Basic needs can be satisfied in different ways, the way depends on many factors. It depends on consumers' own experiences, culture and the marketing communications he has encountered. (Solomon et al. 2002, 247.)

1.3. Five-stage decision making process

Consumers go through a five-stage decision making process before making the purchase. During these stages consumers go from identifying the need, collecting information, evaluating alternatives to making the purchase decision and finally making the post-purchase evaluation, as seen on figure 2. The buying process does not always end with the acquisition of what is offered, but the process can be interrupted at any stage and the purchase may not be made. Whatever the outcome is, the process always ends with assessment: whether or not the consumer is satisfied with his decision. (Kotler, Armstrong 2010)

Figure 2. Buyer's five-stage decision making model
Source: Marketing-Insider (2020)

On the first stage consumers need to identify the need and this is often seen as the most important stage in the process. As, if the consumer does not identify the need, there is no reason to move forward in the process of purchasing a product or service. There are both internal and external triggers that can make consumers identify a need. Such an example from internal triggers would be hunger; when a consumer feels it and thinks of buying food because of it. If the hunger is not great enough, detecting the need will not convey enough to lead into action. Consumers then leave the need ignored or to be dealt with later. Consumer might not buy the food for his hunger, if the hunger he feels is not that bad, that food is needed immediately. (Kotler, Armstrong 2010, 178)

The general consumption of a product usually leads to new needs. For instance, food consumed during the day runs out, and then consumers need to buy more food. (Engel et al. 1995, 176.) As compared to internal triggers, external triggers can be an advertisement consumers see and are then interested in purchasing specific products. (Kotler, Armstrong 2010). In this first phase of

the process marketers have a lot of ways to influence how consumers are deciding what they need. (Solomon 2004)

On the second stage, the consumer starts searching for information about the product or service he or she needs. It happens in one of two ways, either with internal or external information search. In internal information search, the consumer processes the already existing information he or she has. In external information search, the consumer seeks out information from his surroundings such as from the internet or discusses the topic with friends. (Engel et al. 1995; Donovan 2010). For external search there are also two different levels, active information search and semi-active information retrieval. At the semi-active level the consumer becomes more receptive to new information, but he does not take concrete action to find information. At the active level, on the other hand, consumers seek information in all available ways.

While searching information, consumers can find countless options and a lot of information about brands and their products. On the third stage, based on the information found, the consumer arranges the products for the purchase decision according to his preferences. The order of precedence is determined by factors, such as price, quality of the product and the image of the brand. Consumer therefore examines the advantages of all the available options and calculates which will offer the most benefits for his needs. This is called the expectancy-value model. This can be challenging for the consumer as they find a variety of different options and the content of the product may differ greatly. (Kotler, Keller 2009, 208.)

Once the comparison of options has been completed and the best option is found, the fourth stage, purchase decision is ahead. It can be assumed that the consumer chooses the product that he has proved to be the best option based on all the information he gathered. However, it is still possible at this point that the consumer might change his final decision. The consumer may buy another option that he chose on a momentary whim, even though it is not the best option according to the research he made. This can be for instance, buying the most popular option instead of the one consumer already chose as the best option in his mind. These kinds of rash decisions may be unfavourable to the consumer. (Solomon 2004)

Consumers do not always function rationally and choose the expected option, but instead choose the option that takes less time and effort. When a consumer places a minimum acceptable level for all attributes and then chooses the very first option that meets all the minimum requirements for all attributes, it is called the conjunctive decision rule. In this case consumers want effortless options and choose the simplest way, because of heuristics reasons. (Kotler, Keller 2009, 212) There are also lexicographic decision rules and elimination-by-aspects decision rules among the non-compensatory models of consumer choice. In lexicographic decision rule the consumer organizes the attributes in the order of importance and then makes the final decision only by considering this criteria. In elimination-by-aspects rule the consumer eliminates options at each stage which do not fulfill a certain requirement, until only one option remains. Again in the compensatory decision making model the positive and negative attributes of the options are weighted and letting the positive attributes compensate the negative ones. (Dieckmann et al. 2009)

The last stage of the five stage decision making process is the post-purchase evaluation. Post-purchase activities are important as they give crucial information about consumer satisfaction and the reasons behind it. Almost all bigger purchases lead to a state of discomfort caused by the post-purchase conflict. Consumers can be satisfied with the benefits of the purchase, but they also can feel uncertain about the benefits of the brand they did not select for purchase. Consumers experience post-purchase discomfort to some extent at all purchases they make and in this way every purchase involves a compromise. (Kotler, Armstrong 2008, 149). Still, consumers who are satisfied with the purchase will most likely make another purchase in the future and tell their acquaintances about it. It has been researched that acquiring new customers is considerably more expensive than keeping an already existing customer. The purchases of an already existing customer are bigger than new customers', who are researching the product or service for the first time. Satisfied customer who shares positive experience with close associates is a well trusted advertisement for the brand. Brand loyalty develops when consumer's expectations have been exceeded. (Kardes et al. 2011)

2. ENVIRONMENTAL IMPACT OF FOOD PRODUCTION

World population is increasing rapidly and according to the United Nations world's population will increase by 9.8 billion people by the year 2050 (United Nations 2017). With population increasing, per capita food is also increasing. It is predicted that consumption of meat will be twice as high and cereal (wheat, maize, and rice) consumption will increase 60% from the year 2000 until 2050 (Smith et al. 2013). Also, it is expected that milk production will increase by more than half (58%) by the year 2050 (FAO 2013). Animal husbandry requires a lot of inputs and, at the same time causes by-products that impact the environment. (González-García et al. 2018)

It is estimated that around 4 billion people live mainly on a plant-based diet and around 2 billion live mainly on a meat-based diet. These 4 billion are mainly living on a plant-based diet due to the shortage of farmland, sources of energy and fresh water. (Pimentel, Pimentel 2003). According to the World Health Organization there are over 3 million people in the world that are malnourished. (WHO 1996) Rapid population growth is a significant reason for the malnourishment issue together with declining per capita of the shortage of farmland, energy sources and fresh water. (Pimentel, Pimentel 2003)

The food we consume has a major impact on the local and global environment and depending on the diet, it can be very environmentally damaging (Davis et al. 2010). The contributions from eating animal-based products can be both beneficial and harmful. (Schonfeldt et al. 2013). Protein is a very important part of our diet nutritionally and in Europe the primary source of protein is meat (De Boer et al. 2006). Several studies have shown that a plant-based diet has the lowest impact on the environment. Direct human consumption of plant protein is more environmentally beneficial than indirect consumption from meat, as 6 kilograms of plant protein is required to produce 1 kilogram of meat protein on average (Pimentel, Pimentel 2003; Smil, 2000). Reducing meat protein and replacing it with plant proteins would be more sustainable for consumption at least in theory.

According to the United Nations sustainable food system is “that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised.” (FAO 2018). A sustainable diet is safe, healthy, affordable, protects and respects the environment with contributing by minimal impact as possible. (Pimentel, Pimentel 2003). It will be a great challenge to sustainably feed more than 9 billion people by 2050.

2.1. Greenhouse gasses

Life Cycle Assessment studies argue that animal-based foods have more negative impact on the environment than plant-based foods. (Lacour et al. 2018) Life cycle assessment is the study of the environmental impact of a product or service throughout its life cycle. All foods impact the environment one way or another. Fruits and vegetables also produce greenhouse gasses and they are even greater than cereals, but still significantly less than meat and dairy products. Reason for fruits and vegetables having higher greenhouse emissions is that they use much more soil than cereals do. Also, the distances and transport methods affect the overall picture of the environmental impact of food production. (Westhoek et al. 2014). According to David Pimentel grains and soybeans are produced more efficiently than vegetables, fruits, and animal-based products, in terms of energy inputs. (Pimentel et al. 1996) The energy inputs include agricultural machinery, irrigation, fertilizers and pesticides and these inputs are weighed against the food energy and protein contents. (Lal et al. 2003)

All the processes from production to distribution of food constitutes roughly 20-60% of the environmental impact, for instance, greenhouse gasses and water footprint. (Hallström et al. 2014) Greenhouse gasses cause greenhouse effects on Earth causing the climate to change. Primary greenhouse gases on Earth are water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Burning fossil fuels is the number one source of greenhouse gas emissions and the second most important one is the use of land in food production. Greenhouse gas emissions from the changes in land use and cover have increased these emissions by 12.5%. (Houghthon et al. 2012; Weindl et al. 2017). The Intergovernmental Panel on Climate Change again has estimated that on the basis of life cycle analysis animal agriculture contributes up to 18% of global greenhouse emissions (FAO 2006). The environmental impacts in the agriculture sector are severely unsustainable, using natural resources (land, water, fossil energy) to produce crops to

feed the livestock that also uses natural resources (land, water, fossil energy). It is estimated that continuing with the same level, greenhouse gas emissions are going to rise 150% in the next nine years. (Chai et al. 2019)

One of the largest production sectors in agriculture is beef production and it is a significant source for greenhouse gas emissions. The livestock releases methane (CH4), which is the main source of the emissions associated with production of beef. Other emissions related to beef production are nitrous oxide (N2O) and carbon dioxide (CO2). Nitrous oxide emissions are the result of production of feed crops and carbon dioxide emissions mainly from the farm machinery and fertilizers. (Desjardins et al. 2012) The United States is the largest beef producer in the world and Brazil is the second largest. Brazil is also the biggest beef exporter in the world. (Peck, Clint 2009) The carbon footprint of beef produced in the United States is 13.2 kg CO2e per kg, which is almost half of the carbon footprint in Brazil. Carbon footprint of beef in Brazil has been reported to be 22 kg CO2e per kg. High value is primarily due to the fact that livestock has lower weight gain and they require a longer period until slaughtered. (Cederberg et al., 2011) Carbon footprint again in the European Union ranges from 12.6 to 16.6 kg CO2e. (Desjardins et al. 2012)

Europeans eat around 40 kilograms of protein a year and more than half of this comes from animal-based products. (Eurostat 2008) To feed the livestock Europe depends highly on the imported plant proteins, such as soybeans. Almost 80% of all feed proteins are imported in Europe. (Watson et al. 2017) Soybean production is focused on South American countries, such as Brazil. In addition to soil erosion and other environmental issues caused by production of soya beans, exporting them to Europe causes emissions from the transportation. To reduce these environmental impacts, it is suggested to use grain legumes (peas and lupins) which already grow in Europe. According to AEP (2006) and Nemecek et al. (2008) , growing more grain legumes would have more environmental benefits. European Union countries were still a decade ago the main importers of the soybeans produced in Brazil (Willaarts et al. 2011). China is now the biggest importer of soybeans, they even tripled the imported amount of soybeans two decades ago. (BACI 2019) Most of the imported soybeans are used for animal feeding, due to the rich amino-acid content of soybeans. (Willaarts et al. 2011) Brazil has generous water and land availabilities, yet still production of soybeans on a large scale involves environmental impact, such as the Amazon deforestation. (Foley et al. 2007; Nepstad et al. 2006)

2.2 Water footprint

Another important environmental impact of food production is global water footprint. Water footprint calculation is a tool that calculates water consumption of products either in litres or cubic metres. Water footprint measures freshwater consumption and pollution throughout product supply chains (Aldaya et al. 2012). There are three differently categorized water footprints, green-, blue- and grey water footprint. Green water footprint is water stored in the soil and evaporated and absorbed by plants, such as rain water. This water footprint is important for agricultural products. Blue water footprint is the water evaporated or incorporated into a product, either from surface or groundwater. This water is not returned to the same body of water it was drawn. Grey water footprint refers to the pollution discharged into a fresh water body either directly through a pipe or indirectly through leaching from the soil. (SABMiller and WWF 2009)

Agricultural production accounts for most of the global water footprint with a share of 92% of the global water footprint. Animal agriculture accounts for almost a quarter of it and this rate is very likely to increase. From agricultural production, cereals (wheat, maize and rice) consumption contributes the largest share to the global water footprint (27%). Second is meat (22%) and then milk products (7%). Respectively, industrial production contributes around 4% of the total water footprint (Hoekstra et al., 2012; Liu et al. 2008). Up to 85% of consumed fresh water is used for agricultural irrigation, only around 1,3% of this is directly used by the livestock and the rest is required by the feed and grain production, to feed the livestock. (Pimentel et al. 1997) Irrigation is spraying, pumping or in other ways applying water to the soil artificially. The global water footprint is estimated to increase up to 22% by the year 2090, as a result of climate change as well as the land use. (Mekonnen et al. 2020) Also, it is estimated that between the years 2010 and 2050, the fresh water demand in the world will increase by 20- 30% . (Flörke et al. 2016) The issue with fresh water consumption is that the consumption is skewed towards watersheds already exceeding the natural supply of water, and not so much the scarcity of fresh water. (Ridoutt, Pfister 2010) As a result major river systems where flows have become fragmented and significantly reduced. (Falkenmark, Lannerstad 2005) Besides this, the skewed consumption can result in severe groundwater depletion and degradation of the fresh water quality. (Kerr 2010;Qui 2010)

The water footprint of animal products is significantly larger than the water footprint of cereals, when comparing the equivalent nutritional energy content of the foods. (Hoekstra, Mekonnen 2012) According to a study conducted by Vanham, Hoekstra, and Bidoglio water footprint would reduce 14% when replacing the current regular diet with vegetarian diet in European Union countries. (Vanham et al. 2013) According to a study of Hoekstra, consumers who eat meat in industrialised countries consume around 3600 litres of water a day, against vegetarians consuming 2300 litres. Study is made with the assumption that these vegetarians use dairy products. (Hoekstra, 2010) The water footprint of 1 litre of cow milk is 1050 litres per kilogram, which is over three times bigger than the equivalent amount of soy milk (297 litres). Study also compared the water footprint of a soy burger (158 l/kg) and a beef burger (2350 l/kg). The difference in water footprint is over ten times greater in beef burgers. Beef also has a water footprint larger than pork and poultry, poultry not even reaching one third of beef's water footprint. (Ercin et al. 2012)

Production of soybeans also involves great amounts of water and fertilizers, which can act as potential contamination on the water bodies. (Ayala et al. 2016) Santos and Naval stated that the water footprint of soybean production in agricultural expansion areas is 2.38 km^3 and due to the expansion of cultivated areas, it is a growing trend. (Santos, Naval 2020) Soybean water footprint as litres per kilogram is 2154. In comparison, globally the agricultural production had a water footprint of 8362 km^3 in 2011. 80% of this water footprint was green, 11% blue and the remaining 9% grey. (Hoekstra, Mekonnen 2012)

How to reduce the pressure caused to fresh water resources caused by food production is a critical challenge. Reducing consumption of meat and animal-based products is commonly suggested. (Marlow et al. 2009; Mekonnen and Hoekstra 2010)

2.3. Previous research of consumer behaviour towards meat and environment

Ruben Sanchez-Sabate and Joan Sabaté researched customer attitudes towards environmental concerns of meat consumption and examined 34 papers in relation to this. The review found out that most of the consumers are not aware, they underestimate reducing meat production to reduce the environmental damage and that it’s unclear that vegetarian diet is more environmentally friendly than meat including diet. In these studies, percentages of aware consumers ranged from 23% up to 53% and only 38% agreed that by changing animal husbandry we can prevent climate

change. According to the review, even vegans and vegetarians, environmental concerns were more of a secondary motive rather than the original reason to quit eating meat. Those who already did not eat meat or had reduced it's consumption were a minority in the review and the most popular demographics were female and young adults (Sanchez-Sabate; Sabaté 2019). Studies have also shown that women are more aware of the environmental damage of meat and being female is often a strong predictor of willingness to decrease meat consumption or choose to eat meat-free meals. (De Groeve et al. 2017). Research conducted already a decade ago in the US and Finland concluded that vegans, vegetarians and semi-vegetarians agree that plant based diet has moderate importance to the environment (Pribis; Pencak; Grajales 2010).

In the Finnish research about consumer consciousness about meat and the environment, Pohjolainen analyzed how consumers perceive the significant environmental impact of meat products. The analysis acknowledged that most Finns are very unsure of this topic, as they identified six consumer groups; highly unsure consumers (40%), rather conscious (20%), highly conscious (8%), conscious (14%), rather unsure (9%) and resistant (8%). Highly unsure consumers were the largest group, which shows that the problem awareness can be considered moderate at best. Only a small number of participants disagreed with the fact that meat production causes great environmental harm. In addition, the noticeable differences in these groups, this study can be seen as posing many food policy challenges. Conscious, highly conscious and rather conscious groups may not need to be persuaded to make any changes in their consumption, as they do have a general problem awareness already, but they could be given practical help to make more environmentally friendly choices. This could be offering more environmentally friendly choices in school-, university-, and workplaces canteens as well as grocery stores (Pohjolainen et al. 2016).

Arora researched in the past few years Belgian consumers about their diets and attitudes towards plant-based meat alternatives. They discovered slight increases in different meat-reducing diets as well as concerns for the environmental impact due to animal agriculture. Over 80% of the respondents said that their health was important to them and more than half answered that the environment and sustainability was important to them. In the research they compared the satisfaction of the plant-based meat alternatives. Earlier research shows that these alternatives are not popular among meat eating consumers (Doebel, Gabriel 2015), but have made avoiding all animal-based products easier to vegetarians and vegans, as well as flexitarians. (Kateman, 2017) In Arora's research some variables, such as being in a young age group, vegan or vegetarian or female meant respondents were more likely to have better satisfaction with the plant-based meat

alternatives. Recents studies have also shown that those who eat plant-based meat alternatives are typically also younger, female and they are concerned about the environment as well as their health. (Siegrist, Hartmann 2019). Arora suggested in his research that there may be a connection between the satisfaction with plant-based meat alternatives and ethical concerns about animal agriculture. After consumers would be satisfied with plant-based meat alternatives, they would be "free" to develop a concern about the welfare of the animals that are raised to be eaten or used in food production. As then these consumers would not need to be defending consumption of meat anymore. (Arora et al. 2020)

3. RESEARCH OF THE CONSUMER BEHAVIOUR AND MOTIVES OF CONSUMING PLANT-BASED FOODS

This chapter includes three subchapters, where the first one explains the method of the research. The second subchapter reveals the results of the reseach and the analysis of them. The last chapter discusses the results and gives further recommendations.

3.1. Research method

The main goal of the research was to determine the motives and barriers that students of Tallinn University of Technology have towards eating plant-based food. Additionally it was to find out how the environmental impact of food production affects their food buying behaviour.

The author used a quantitative research method by conducting an online questionnaire survey. A convenience sampling method was used to target students of Tallinn University of Technology and the survey was distributed via social media. The questionnaire was in English language and it contained 13 questions about dietary habits, motives and environmental impact of food production. Answers were collected in April 2021 in a period of seven days. The questionnaire was created in Google forms and results were analyzed in Excel. Quantitative method was used due to its benefits to describe large amounts of data in a short period of time and results can be easily represented in numbers. Results were analyzed with descriptive statistic method and with help of cross-tabulation method.

The first part of the questionnaire collected demographic data, followed by questions about dietary habits and motives. In the last part of the questionnaire there were questions about the environment and how food production affects their food buying preferences. Survey had multiple choice questions, where the respondents were also able to choose “other” and write their answer in their

own words. In some questions the respondent was able to choose between “Agree” to “Disagree”, in a numerical range from one to five, to help them determine their opinion.

3.2. Results of the research

In total 107 respondents aged 17 and over completed the survey. Nearly 55% of respondents were women and nearly 45% men, leaving 1% of respondents choosing their gender as other. No gender was dominating in this survey. Most of the respondents in this survey were between the ages of 23 and 34. More than half of them (57%) were aged between 23 and 28 and the second biggest age group was ages between 29-34 (25%).

The question after the demographics was about the respondent diet. Author had named seven different diets and eight one as "Other", where the respondent could fill out their diet, if it was missing from the options. Besides the option "Other" the following options with the explanations were given in the questionnaire:

Vegan (Don't consume any animal products or by-products)
Lacto-vegetarian (No meat, fish, poultry. Eat dairy products)
Ovo-vegetarian (No meat, fish, poultry. Eat eggs)
Lacto-ovo vegetarian (No meat, fish, poultry. Eat dairy products and eggs)
Pescatarian (Restricting meat consumption to fish and seafood only)
Flexitarian (A plant-based diet with occasional meat item on the menu)

Significant number of the respondents answered that their diet is a mixed diet (64%), as seen on figure 3. The second most popular answer was Fexitarian (18%). Little more than half of the respondents who considered themselves flexitarians answered that they eat meat products either few or multiple times a week. The rest answered that they eat meat products less than a few times a week. Small proportion of the respondents 5.6% answered that they follow a vegan diet, where half of them were female, 30% male and 20% other gender. Also another small portion of 5.6% chose their diet as "Other", which included the following: no meat (1 respondent), no red meat (1 respondent), lactose free and meat rarely (1 respondent), semi vegetarian (1 respondent), and gluten free (1 respondent). Author concluded that most of the respondents who chose the option

"Other" do not eat meat or eat meat rarely. When looking at the diets based on the fact that they do consume meat products even occasionally, 90% of the respondents filled this criteria.

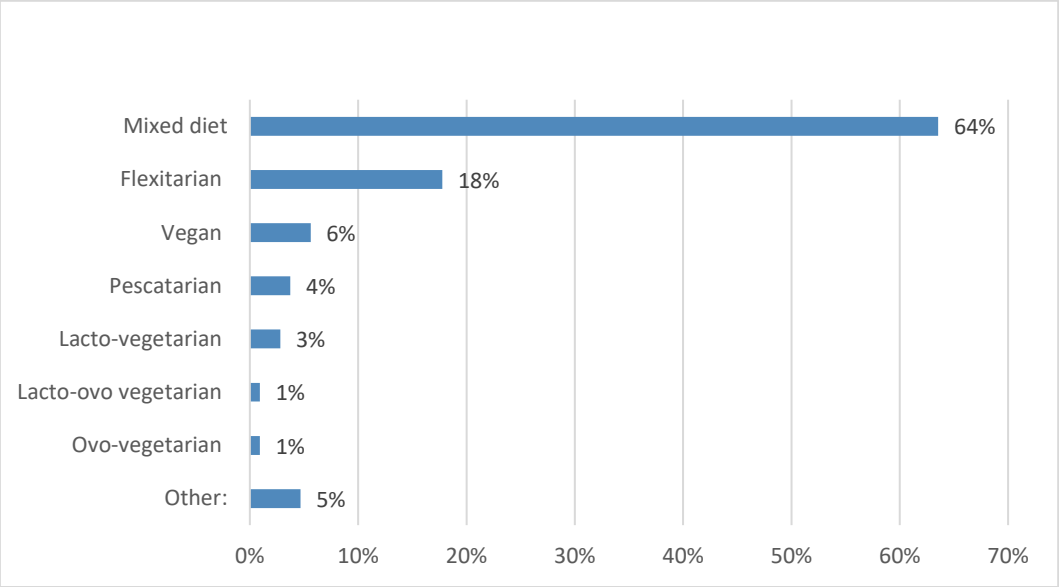

Figure 3. Summary of the respondents diets (n=107)

Source: Authors calculations, Appendix 1.

Most of the respondents on the survey (73.9%) answered that they eat meat products daily or at least a few times a week, as seen on figure 4. Most of the respondents answered they eat meat products at least once a day (26.2%), followed by eating multiple times a week (20.6%). Only 8.4% answered that they never eat meat products. (26.2%), followed by eating multiple times a week (20.6%). Only 8.4% answered that they never eat meat products.

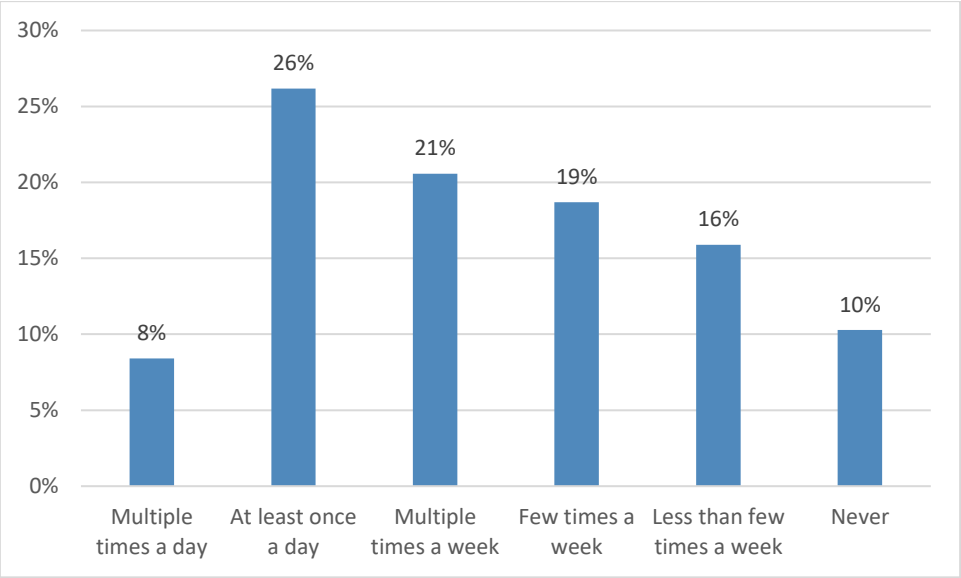

Figure 4. Summary of how often respondents eat meat products n=107)
Source: Authors calculations, Appendix 1

Almost half of the respondents with a mixed diet were female (45%) and the rest were men. Only 13% of the respondents with a mixed diet said they eat meat multiple times a day. Most popular answer (40%) of respondents with a mixed diet said they eat meat products at least once a day. The second most popular answer was eating meat products multiple times a week (28%). Considerable amount of the people who answered that they never eat meat products were female (72%). Also, 70% of the respondents who answered that they prefer eating plant-based foods instead of animal-based foods were female.

Survey also included questions about the environmental impact of food production. Aim of these questions were to find out do respondents think their diet is harmful to the environment. Respondents could choose on a numerical scale from 1 to 5, how harmful they consider their diet to be, 1 being not harmful and 5 being harmful. To find out the knowledge levels of the respondents about this topic, the survey included a question where respondents were to choose the most harmful foods for the environment.

Respondents with mixed diets considered their diet the most harmful (3.11 on average out of 5) compared to respondents with other diets. Yet, only 22 respondents (32%) thought their diet is either slightly harmful or harmful to the environment. Lacto-vegetarians rated their diet to be 2 out of 5 on the scale of harmfulness, which was the lowest result in all diet groups. To not have distorted perception, only two people out of the 107 chose their diet as lacto-vegetarian. Vegans

considered their diet to also have low environmental impact, as they rated their diet to be 2.16 on average.

Seven respondents answered that their diet is not harmful to the environment and four of them also ate meat every day or multiple times a week. Only one of these respondent said to never eat meat. All of these respondents agreed with the statement that plant-based diet is more environmentally friendly than animal-based diet. Six of them either agreed or slightly agreed, and only one chose neutral option for that statement. Most of them also agreed with the statement that they are worried about the environmental impacts of food production; 4 agreed, 2 disagreed and 1 answered neutral opinion. Their opinion about their diet not being harmful to the environment seem to be in discrepancy with the answers that they are worried about the environmental impacts of food production and that most of them eat meat products.

Neutral (3) was the most popular answer for the statement "How harmful to the environment do you consider your diet to be?" 47 respondents (44%) chose this on the numerical scale from 1 to 5 and most of them (35 respondents) answered that they eat meat products multiple times a week. Only ten respondents (0,9%) chose the option 5 (harmful) on the numeric scale from 1 to 5. All of them said they eat meat either every day or multiple times a week and eight of them agreed with the statement that a plant-based diet is more environmentally friendly than animal-based diet. Only one disagreed and one chose the neutral option. None of these respondents disagreed with the statement "I am concerned about the environmental impact of food production", but two respondents chose the neutral option. These results make sense together, that the respondents are worried about the environmental impact of food production, consider plant-based diets more environmentally friendly than mixed diet and they consider their diet to be harmful to the environment.

Respondents were asked to choose the most harmful foods they consider for the environment. They were able to choose multiple options as the most harmful foods to the environment. Only one respondent answered that none of the food is harmful to the environment. As seen on figure 5, beef was chosen as the most harmful to the environment 79 times out of all the 279 answers. 74% of the respondents chose beef to be one of the most harmful foods to the environment, followed by pork (52%), poultry (37%), fish and seafood (36%) and dairy products (35%). All the animal-based products were considered to be the most harmful for the environment.

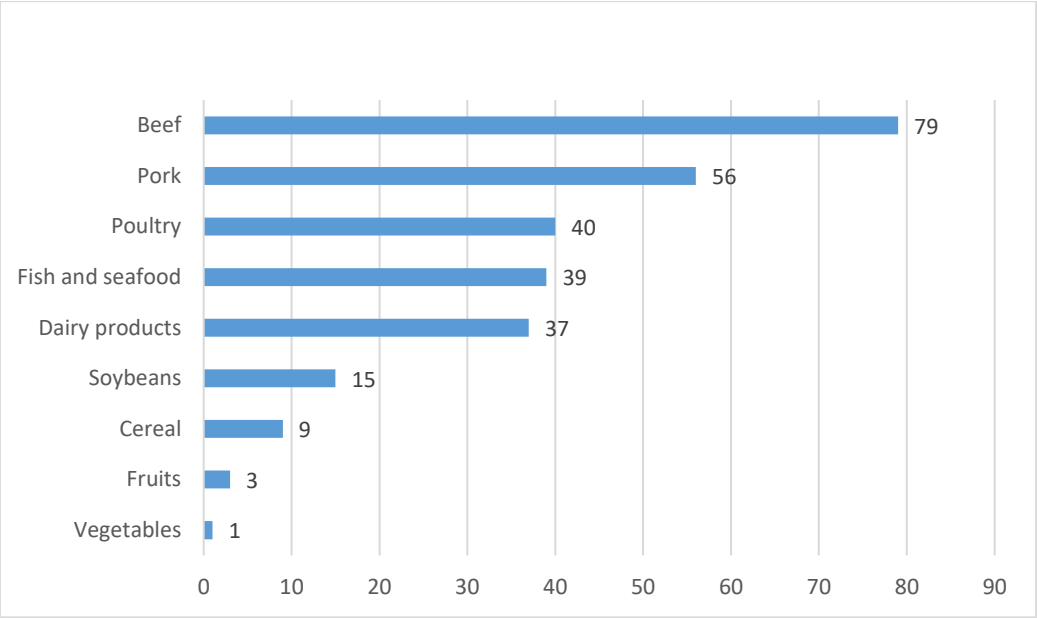

Figure 5. Summary of which foods respondents consider the most harmful to the environment n=107)

Source: Authors calculations, Appendix 1

100% of the vegans considered beef to be one of the most harmful foods for the environment. 83% of vegans also considered pork to be harmful, 66% considered fish and seafood and the same amount also considered dairy products to be harmful. Yet, only 30% considered poultry to be one of the most harmful foods to the environment. None of the vegans considered plant-based foods to have the most negative impact for the environment. Respondents who considered themselves as vegetarians and flexitarians had chosen the same animal-based foods to be the most harmful.

Soybeans were considered to be the most harmful in all other diet groups, varying from 15% to 28%, except in the vegan diet groups (0%). Only altogether three respondents considered fruits and only one considered vegetables to have the most negative impact on the environment. They all were following a mixed diet.

This research aimed to find out the motives and the barriers around eating more plant-based foods among Tallinn University of Technology students. Almost half of the respondents (46%) answered that they prefer eating plant-based foods over animal-based foods. Again, most of the respondents in the author's survey who preferred eating plant-based food, were female (70%). All these respondents were also asked what is the biggest motive for this. Question after that was to give out other motives for favoring plant-based foods. There were three reasons with the largest shares of

the answers why respondents preferred eating plant-based food over animal-based foods. Most popular motives to favour plant-based foods were health reasons (36%), followed by ethical reasons (30%). Environmental reasons (22%) were the third most popular answer. Significantly, only 8% had chosen taste as the main reason they prefer plant-based diet.

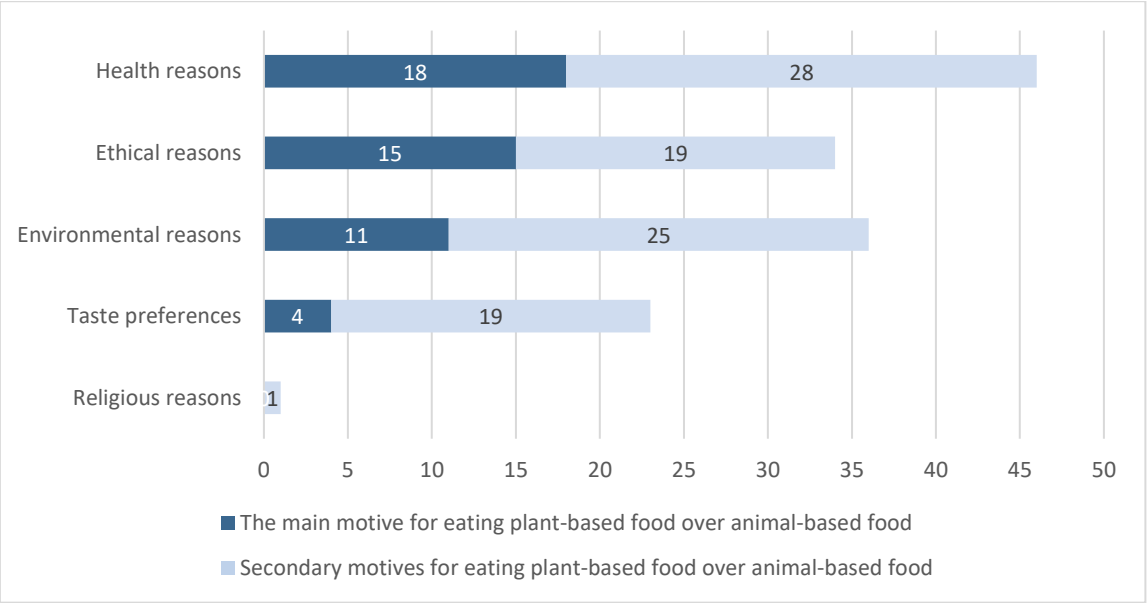

Figure 6. Summary of the motives for eating plant-based food over animal-based food n=107)
Source: Authors calculations, Appendix 1

As a secondary motive for favouring a plant-based diet, the most significant share was the environmental reasons, with 58%. As we can see from both from the Figure 6 health, environmental and ethical reasons are the main motives respondents prefer eating plant-based foods over animal-based foods. Taste was also an important factor when it comes to secondary motives, but not as the most important motive. There was a significant difference between males and females when choosing environmental reasons as the main motive for favouring plant-based diet. Almost a third of females (28%) chose environmental reasons as the main motive, but with males it was chosen only by 7%. There was no significant difference between males and females choosing health-, and ethical reasons as their main motives.

Besides the motives for eating more plant-based foods, the author wanted to find out what are the main barriers for consumers not eating more plant-based foods. The biggest reason for not eating more plant-based food turned out to be the fact that it requires more planning. 23% of the

respondents chose this as the main barrier. As mentioned earlier, consumers sometimes do choose the option that takes the least effort, the most convenient option. Also, the following answers may be put under the convenience reasons: more preparations (10%), not easily accessible (3%), lack of recipes (1%), old habits (1%) and I'm more familiar with meat based foods (1%). Based on these results, the author concluded that almost 40% of the respondents do not eat more plant-based foods out of convenience. Even though consumers would prefer to eat plant-based food, they might not be willing to use the time and effort required by this action. On the conjunctive decision rule consumer sets a minimum acceptance level to each attribute and then chooses the option that meets these minimum levels. Respondents who do not eat more plant-based food due to convenience reasons may be making these decisions by the conjunctive decision rule.

Another popular barrier was that the respondents were afraid of not getting enough nutrients. Almost 19% chose this as the biggest reason they do not eat more plant-based foods. Barriers that were not so significant were "I prefer the taste of animal-based products" (13%) and "It is too expensive" (12%). Notably, only 3% did not eat more plant-based foods due to health reasons. They considered that a healthy, balanced diet should include animal-based products as well.

When asked other barriers for not eating more plant-based foods, in this case taste preferences had the biggest share. 33% of the respondents chose taste preference as a secondary barrier. Males and females shared taste preference as secondary barriers equally. Also, convenience and nutrition as barriers were popular options, just like they were as main barriers.

This research also aimed to find out how the environmental impact of consumers' dietary preferences influence their food buying preferences. Thus, in the final part of the survey, respondents were asked if they were concerned about the environmental impact of food production and if it influences their buying behaviour and how. 67% told they are concerned about the environmental impact of food production. Despite the concerns, not all were influenced by their concerns. Little more than half of the respondents were influenced by their concerns about the environment. As the figure 7 shows, those who agreed with the statement that environmental impact of food production concerns them, only less than half of their buying habits were affected by this.

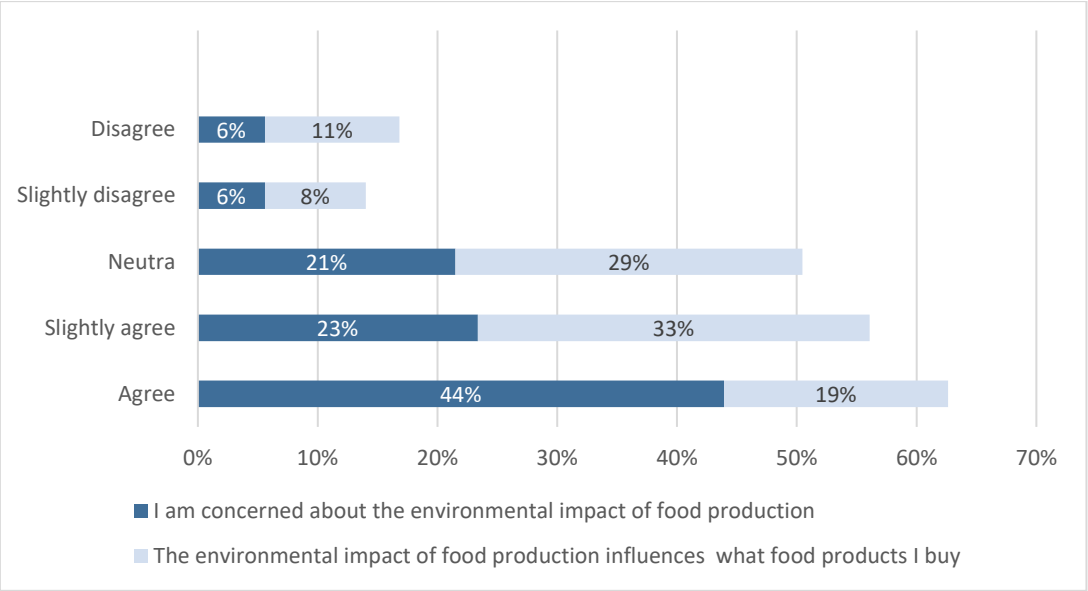

Figure 7. Summary of concerns about enviromental impact and it influence to food buying habits n=107)

Source: Authors calculations, Appendix 1

As seen from figure 7, little more than half of the respondents either agreed or slightly agreed with the statement that environmental impact of food production influences their buying behaviour. Additionally, they all agreed with the statement that they are concerned about the environmental impact of food production. It is once again noticeable that females were the majority (70%) of those who agreed that the environmental impact influences what food products they buy. It was also good to see that only 11% were not concerned about the environmental impact of food production. A bit higher part of the respondents, 20% of them said that the environmental concerns do not influence their food buying habits. These answers are in discrepancy with the fact that on a later question, only 8% of the respondents chose the option “It does not affect” when asked specifically how the environmental impact of food production influences how they buy food products. It may be that the respondents did think on the first thought that there is no influence, but later when seeing the options, they realized they are influenced after all. This cannot be known for sure without further research. Neutral opinions were also once again present. One third had a neutral opinion about the environmental impact concerns and only one fifth had a neutral opinion whether the environmental impact affects their food buying habits.

In the last question of the survey, respondents were asked how the environmental impact of food production affects their food buying habits. Respondents were able to choose multiple options and additionally add their own answer if the option they were looking for was missing.

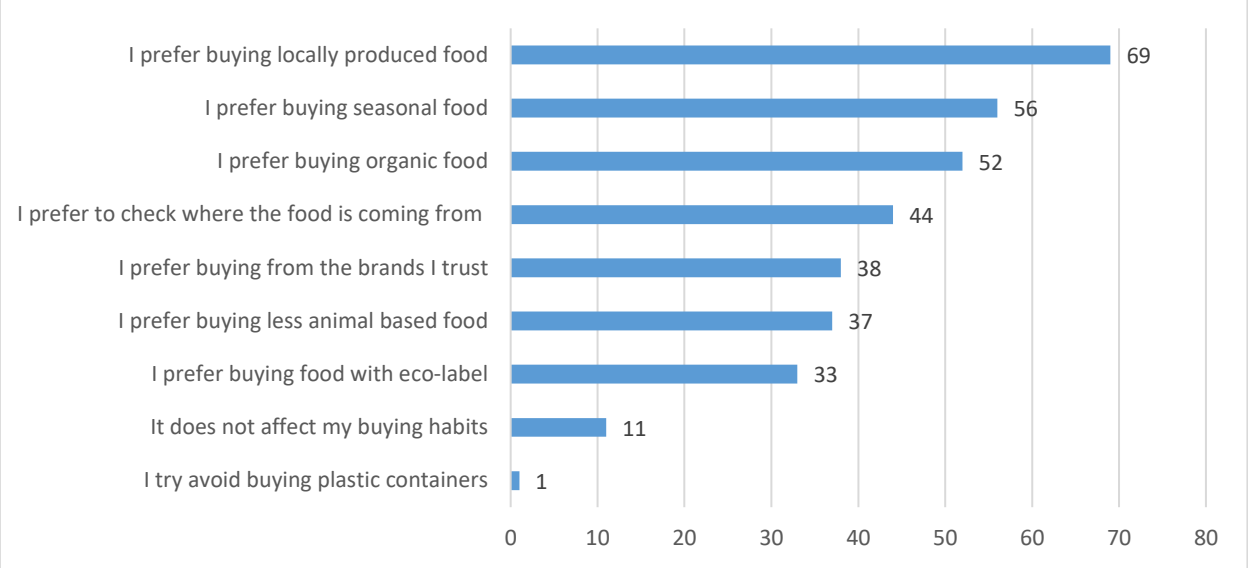

Figure 8. Summary of how the environmental impact is influencing food buying preferences n=107)

Source: Authors calculations, Appendix 1

As seen on figure 8, the three most popular answers were buying locally produced food (65%), buying seasonal products (52%) and buying organic food (49%). Additionally, little over 40% preferred to check where their food is coming from before making the purchase and 35% preferred buying food products from the brands they already trust. One respondent brought out that he tries to avoid buying plastic containers while buying food. This research did not focus on the additional plastic waste coming from food products consumers buy. 30% of the respondents preferred buying products with eco-label and most of them were following a mixed diet. Females chose three times more often the option that they prefer to buy less animal-based foods than males, due to the environmental impact. Also based on the amount of answers in this question, it can be calculated that on average one respondent chose three different options.

3.3. Discussion and recommendations

Results showed that 90% of the respondents ate meat in some form ranging from multiple times a day to less than a few times a week. Only a little more than 5% considered themselves vegan and the remaining 5% considered themselves vegetarian. Most of the respondents said they eat meat products at least once a day or multiple times a week, yet still almost half of all respondents said they preferred eating plant-based foods over animal-based foods. 70% of those who preferred animal-based foods were female. Most of the respondents who said they never eat meat were also females. The results from this question align with other researches that conclude that women are more likely to choose meat-free meals and decrease their meat consumption than men. (De Groeve et al. 2017)

Respondents with mixed diets considered their diet the most harmful, but still not rating their diet harmful on average. Only third of respondents thought their diet is either slightly harmful or harmful to the environment. Neutral opinion was the most popular answer on all diet groups. These results are similar from the research made by Pohjolainen (2016) where he researched Finnish consumers' consciousness about meat and the environment. The results of Pohjolainen showed that most of the participants were highly unsure consumers (40%), which is comparable with the neutral option (44%) in the author's survey.

More than half of the respondents were concerned about the environmental impact of food production, leaving only few respondents disagreeing with the statement. Beef was considered the most harmful to the environment followed by other meat and animal-based products. The main motive for preferring to eat plant-based food were health reasons, followed by ethical reasons. Environmental reasons were the third most popular answer. When respondents were asked their other, secondary motives for preferring to eat plant-based food, environmental reasons were the most popular. These results are similar with research by Sanchez-Sabate, which concluded that environmental reasons are usually secondary motives for following vegetarian or vegan diets. (Sanchez-Sabate.; Sabaté 2019). Only a few respondents had taste preference as a main motive to eat more plant-based foods.

Convenience reasons were the main barriers for not eating more plant-based foods, as the most popular answer to be the barrier was that it requires more planning. Additionally, respondents considered that plant-based foods require more food preparations than animal-based foods. This may be due to respondents not being familiar with plant-based foods or recipes. Almost half of the respondent's main barrier reasons could be included into convenience reasons. As mentioned earlier in this research, consumers sometimes do choose the option that takes the least effort, the most convenient option. This may not always be the best or the most rational option for the consumer, but consumers choose this for heuristics reasons. (Kotler, Keller 2009)

Portion of respondents were also worried they would not get enough nutrients if they would eat more plant-based foods. For a secondary barrier to not eating more plant-based foods, the most popular answer was taste preferences.

Even though more than half of the respondents were concerned about the environmental impact of food production, not everyone considered it to influence their buying preferences. Only a small portion of respondents were not concerned about the environmental impact of food production. Interestingly, those who considered their diet not harmful to the environment were still concerned about the environmental impact of food production and most of them were also consuming meat and other animal-based products weekly.

This research also aimed to determine how consumers buying preferences were influenced by the environmental impacts of food production. Most respondents answered that they preferred buying locally produced food. Still only one third of the respondents said they preferred buying eco labelled foods, when usually organic products are eco labelled. It may be even more important than eco labels that consumers would prefer to know where their food is coming from and how it is made. As eco labels have different standards and without any research consumers cannot know these.

Almost half said they preferred to know where their food is coming from before buying it. It would need more research to find out what kind of factors would make consumers not to buy a food product due to negative environmental impacts, which is also one of the limitations of this research. Another limitation is that the author did not research the respondent's willingness to pay when researching how consumers' food buying is influenced by environmental issues. Small portion of

respondents did consider the price to be too high for them to eat more plant-based foods. This could be researched more in the future, how the price together with environmental factors influences consumers food buying preferences.

Based on the results, students of Tallinn University of Technology prefer not to plan too much when it comes to eating, out of convenience. As food buying is low-involvement purchase and done very often, it is treated very routinely and without further research. (Bergström, Leppänen 2015, 121.) As consumers have limited abilities to process information in the purchase decision making process, the conjunctive decision-making rule is used to narrow down this information process. The author suggests that the eateries and food shops in and near Tallinn University of Technology campus would offer more variety and easily accessible plant-based food. Based on the research results the students would prefer to eat convenient, easily accessible plant-based food over animal-based food. Author also suggests that the offered plant-based food would be environmentally friendly and have available labels where food is coming from as most of the respondents were aware and worried about the negative environmental impacts of food production and preferred to find out where their food is coming from. More research should be done to find out specifically what kind of plant-based foods these students would prefer to eat, as taste preferences were also high as secondary reasons not to eat more plant-based foods. Knowing consumers food buying preferences is important for both the food processing systems as well as marketers.

CONCLUSION

The aim of this thesis was to find out the motives and barriers of eating plant-based foods among Tallinn University of Technology students. Additionally, this thesis aimed to bring out how these students food buying preferences were affected by the environmental impacts of food production. Author concluded a survey with an online questionnaire among the students of Tallinn University of Technology. Convenience sampling method was used to collect information about students diet, motives and food buying preferences. The sample size was 107 and no gender was over represented in the survey.

This thesis found out that most of the respondents followed a mixed diet, yet almost half of all respondents preferred eating plant-based foods over animal-based foods. The main reasons for this were health reasons followed by ethical reasons. Environmental reasons were the third most popular reason. Most of the respondents who either did not eat meat, preferred eating plant-based foods over animal-based foods and were more affected by the negative impacts of food production were female. The main barriers for not eating more plant-based foods were convenience and worry that they will not get all the nutrients from plant-based foods. When asked about secondary reasons for this, then taste preferences were the most popular answer.

Almost all respondents were concerned about the environmental impacts of food production, yet not all of them said they were influenced by it while buying food. However, their food buying behaviour told otherwise. Most respondents preferred to buy more locally produced foods. Buying seasonal products and organic products were also popular among the respondents. One third also preferred buying less animal-based products due to the environmental impact. Respondents did wanted to know where their food was coming from and part of them preferred buying eco labelled foods.

Limitations of this research were that the sample size consisted of 107 respondents out of approximately 10,000 students who study at the Tallinn University of technology. (Taltech Annual Report 2019) With more respondents the results would have been more comprehensive.

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APPENDICES

Appendix 1.The survey

This survey is part of the author's Bachelor of Business Administration graduation thesis at the Tallinn University of Technology. Thesis aims to find out consumers diet, its motives and how the environmental impact of food production influences their consumer behaviour.

This survey will take a few minutes to fill out. Survey includes multiple choice questions about diet, its motives, and the environmental impact of food production. Survey is anonymous and confidential.

1. How old are you?

17- 22	23- 28	29- 34	35+
11.2 %	57%	25.2%	6.5%

2. Your gender?

Male	Female	Other
43.9%	55.1%	0.9%

3. What would you consider your diet to be from the following options?

- Mixed diet (63.6%)
- Vegan (Don't consume any animal products or by-products) (5.6%)
- Lacto-vegetarian (No meat, fish, poultry. Eat dairy products) (2.8%)
- Ovo-vegetarian (No meat, fish, poultry. Eat eggs) (0.9%)
- Lacto-ovo vegetarian (No meat, fish, poultry. Eat dairy products and eggs) (0.9%)

- Pescatarian (Restricting meat consumption to fish and seafood only) (0.9%)
- Flexitarian (A plant-based diet with occasional meat item on the menu) (17.8%)
- Other: “vegetarian“ (0.9%)
- Other: “I don’t eat red meat“ (0.9%)
- Other: “No meat“ (0.9%)
- Other: “No dairy, gluten, beans, apples etc.-fodmap diet” (0.9%)
- Other “lactose free, rarely meat“ (0.9%)

4. How often do you eat meat products?

Multiple times a day	At least once a day	Multiple times a week	Few times a week	Less than few times a week	Never
8.4%	26.2%	20.6%	18.7%	15.9%	8.4%

5. How healthy do you consider your diet to be?

1 Not healthy	2	3	4	5 Healthy
2.8%	8.4%	30.8%	47.7%	10.3%

6. How harmful to the environment do you consider your diet to be?

1 Not harmful	2	3	4	5 Harmful
6.5%	24.3%	43.9%	16.8%	8.4%

7. Which foods do you consider to be the most harmful to the environment?

- Beef (73.8%)
- Pork (52.3%)
- Poultry (37.4%)
- Fish and seafood (36.4%)

- Dairy products (34.6%)
- Cereal (Wheat, maize and rice) (8.4%)
- Soybeans (14%)
- Fruits (2.8%)
- Vegetables (0.9%)
- Other: “Off season imported fruit” (0.9%)
- Other: “All vegetables in plastic containers” (0.9%)
- Other: “Palmoil” (0.9%)
- Other: “Anything wrapped in plastic” (0.9%)
- Other: “Anything that needs to be transported from the other side of the world” (0.9%)
- Other: “Imported foods” (0.9%)
- Other: “Imported special foods” (0.9%)

8. ONLY ANSWER IF you prefer eating plant-based foods over animal-based foods. What is the MAIN reason why?

Taste	Health reasons	Environmental reasons	Ethical reasons	Religious reasons	Other:” Find meat disgusting”	Other: “I only eat meat”
8%	36%	22%	30%	0%	2%	2%

9. ONLY ANSWER IF you prefer eating plant-based foods over animal-based foods. What are other reasons you prefer eating plant-based food over animal-based food?

Taste	Health reasons	Environmental reasons	Ethical reasons	Religious reasons
39.6%	52.1%	58.3%	39.6%	2.1%

10. ONLY ANSWER IF you are NOT vegan. What is the MAIN reason you do not eat more plant-based foods?

- I am worried about not getting all the nutrients (18.7%)
- Taste preferences (14.3%)

- It requires more planning (23.1%)
- It is too expensive (12.1%)
- It requires more food preparations (9.9%)
- It is not easily accessible to me (3.3%)
- Other: “I prefer balanced diet that includes meat” (1.1%)
- Other: “No specific reason, I like to mix” (1.1%)
- Other: “Old habits” (1.1%)
- Other: “I don’t feel full if my meal doesn’t include meat” (1.1%)
- Other: “Not interested” (1.1%)
- Other: “I like to eat meat sometimes” (1.1%)
- Other: “Lack of recipes, I don’t know what to cook” (1.1%)
- Other: “Food and cooking is big part of my life (including meat)” (1.1%)
- Other: “Im more familiar with meat based foods” (1.1%)
- Other: “There aren’t many option available in my opinion” (1.1%)
- Other: “Family member prefers meat” (1.1%)
- Other: “I like meat and cheese too much to not consume them” (1.1%)
- Other: “It’s too restrictive” (1.1%)
- Other: “Not enough options due to my fodmap” (1.1%)
- Other” I don’t consider myself vegan, try to be mindful”

11. ONLY ANSWER IF you are NOT vegan. What are other reasons you don't eat more plant-based foods?
    - Taste preferences (32.6%)
    - It’s too expensive (16.3%)
    - It’s not easily accessible to me (18.6%)
    - I am worried about not getting enough nutrients (29.1%)
    - It requires more planning (40.7%)
    - It requires more food preparations (31.4%)
    - Other: “I’m still unfulfilled if I don’t eat meat” (1.2%)
    - Other: “I like to mix” (1.2%)
    - Other: “Family, friends (social)” (1.2%)
    - Other: “It is something Im not used to” (1.2%)

- Other: “Im not vegan but I eat lot of plant-based” (1.2%)
- Other: “Foodmap” (1.2%)

12. Statements
    1. Plant-based diet is healthier than diet including animal-products

	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
Plant-based diet is healthier than diet including animal-based products	15.8%	14%	21.4%	20.5%	26.1%
Plant-based diet is more environmentally friendly than diet including animal-based products	4%	7%	14.9%	30%	42%
I am concerned about the environmental impact of food production	5%	5%	21.4%	23.3%	43.9%
The environmental impact of food production influences my food buying habits	11.2%	8%	28%	31.7%	18.6%

13. How does the environmental impact of food production influence your food buying preferences?

- I prefer buying locally produced food (64.5%)
- I prefer buying organic food (48.6%)
- I prefer buying less animal-based food (34.6%)
- I prefer buying eco-labelled food (30.8%)
- I prefer buying seasonal food (52.3%)
- I prefer buying from the brands I trust (35.5%)
- I prefer to check where the food is coming from (41.1%)
- It does not influence (10.3%)
- Other: “I try avoid getting plastic containers” (0.9%)
- Other: “I prefer local beer” (0.9%)
- Other: “However, price is a big factor” (0.9%)

Source: Author’s research

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