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CONSUMERS' WILLINGNESS TO REDUCE MEAT

CONSUMPTION IN SOUTHERN FINLAND

Bachelor's thesis

Programme International Business Administration, specialisation Marketing

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Tallinn 2021

I hereby declare that I have compiled the thesis independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously presented for grading. The document length is 9324 words from the introduction to the end of conclusion.

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ABSTRACT

The aim of this thesis is to find out Finnish consumers' willingness to reduce their consumption of meat. The thesis compared and analysed answers from three different dietary identities: omnivores, vegetarians and vegans. Differences between dietary identities were found among all aspects of the research excluding experienced social pressure to eat meat. Main differences were found through attitudes towards meat, willingness and intention to follow a plan-based diet and whether people had a positive or negative bond with meat. Positive attitudes towards meat were connected to positive bond to meat, similarly negative attitudes were connected with negative bond to meat. Omnivores had positive attitudes and positive bond towards meat consumption and vegetarians and vegans had negative attitude and negative bond towards meat consumption. Omnivores attitudes, feelings of hedonism, affinity and entitlement contributed their willingness to not to reduce meat consumption, when concerns for the environment, animal wellbeing and own health contributed to their willingness to reduce meat consumption. Vegetarians and vegans were found to have willingness to reduce meat consumption, environmental concern and concern on animal wellbeing was found to contribute to the willingness to reduce met consumption. This thesis suggests future research with a larger sample size, in addition future research on younger and older generations in order to gain more knowledge on consumers' willingness to reduce their consumption of meat.

Keywords: Meat consumption, attitudes, Meat Attachment Questionnaire, Theory of Planned Behaviour

INTRODUCTION

The people of Finland has enjoyed meat as a part of their diet for a long time. Like other Nordic kitchens, Finnish kitchen includes a lot of meat (white and red) and fish. An average Finnish citizen consumed approximately 79 kg of meat (red meat, white meat) and 15 kg of fish in the year of 2020. (Statista) The consumption of red meat (mainly beef and pork) has been decreasing a little in the last few years yet the consumption of poultry has been increasing. (Luonnonvarakeskus)

Climate change and global warming are significantly influenced by human activity and animal-derived food is one of major contributors. (Çoker, van der Linden 2020) Global food system is responsible for approximately 56% of greenhouse gas emissions that comes from livestock and aquaculture. (Garnett *et al* 2019, 20923) How and what one eats also contributes to eutrophication and acidification of the environment and to the loss of biodiversity in the environment. (Clark *et al.* 2019) Furthermore, food production uses a lot of resources including water, nutrients, energy and land area in Finland. (Luonnonvarakesus) By changing a diet, is one of easiest ways to reduce their carbon footprint, slow down the climate change and preserve the environment. (Clark *et al.* 2019) Consuming meat does not only affect the environment, but one's health also. Overconsuming particularly red- and processed meats have been detected to have caused type two diabetes (Pan *et al.* 2011), strokes (Cui *et al.* 2019) and obesity (Rouhani *et al.* 2014). The effects can mostly be seen in Western countries where the intake of meat is generally higher than in developing countries. (Clark *et al.* 2019) Animal welfare as well suffers from the consumption of meat and reduction of excessive meat consumption would benefit to wellbeing of animals. (Mathur *et al.* 2020) When the consumption of meat is as high as it is nowadays, the technology and industrialization of livestock sector is contributing to a poor animal welfare. (Alonso *et al.* 2020)

In the recent years in Finland, the popularity of vegetarian and vegan diets has been growing slightly. Even though the occurrence 'veggie boom' that was caused by various events which were trying to introduce ways for people to reduce their meat consumption, popularity of plant-based diets has stayed low in Finland (Lehto *et al.* 2021) Compared to other Nordic countries the consumption of pork meat is still higher and the popularity of vegan diets are lower in Finland, the

amount of vegans in Finland in 2020 was 2% when in Sweden the number was 4%. (Motrøen 2020)

A consumer research conducted by Kantar on Finnish food trends during the year of 2020 revealed that the COVID-19 pandemic caused a drop on food trends that were rising prior to the pandemic. One of the main trends that dropped was the avoidance of red meat (Kantar.fi) which leads to the problem of thesis. The problem of this thesis is the lack of knowledge on Finnish consumers' willingness to reduce meat consumption.

The aim of this thesis is to find out Finnish consumers' willingness to reduce their meat consumption.

The aim will be fulfilled with the following research questions:

- 1) What aspects influence consumer's willingness to reduce or not to reduce their meat consumption?
- 2) How dietary identity affects consumer's willingness to reduce meat consumption?

The aim will be achieved with a theoretical framework followed by an online questionnaire to Finnish people concerning their willingness to reduce their consumption of meat. The results of the questionnaire will then be analysed according to the theoretical framework.

Chapter one will go through the theoretical framework and will give support to the research. Chapter two will introduce more deeply the behaviours of different dietary identities. Chapter three will present the research conducted as well as analyse the results acquired from the research.

1. THEORETICAL FRAMEWORK

This thesis's theoretical framework will include Izek Ajzen's Theory of Planned Behaviour and Meat Attachment questionnaire (Graça *et al.* 2015) which both will be introduced in this chapter. Meat Attachment questionnaire utilizes the Theory of Planned Behaviour however this thesis will introduce them separately to gain more in-depth understanding on both of the theories.

Graça *et al.* (2015) as well as Lenz *et al.* (2018) both came to the conclusion in their studies that the use of MAQ gained more thorough understanding on the willingness to reduce the consumption of meat compared to only using the TPB. The MAQ was selected for this research for its promising results it has gained in Portugal (Graça *et al.* 2015) and in New Zealand (Lenz *et al.* 2018). To author's knowledge this theory has not yet been used for measuring willingness of Finnish consumers.

1.1. Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) was released in 1985 by Icek Ajzen. The theory was published as an extension to the Theory of Reasoned Action (TRA) (Ajzen, Fishbein 1975) after its limitations towards actions which were not under individuals' volitional control. TPB includes a factor which notices individuals' volitional control over a behaviour, where mere intention does not always express behavioural intention. Lack of volitional control refers to decision in which an individual has no control over. (Ajzen 1991, 181-182) For example, getting married or making a new friend is not under volitional control since the action requires a decision from two people. By adding the perceived behavioural control to the model, TPB presents three behavioural indicators; Attitude toward the behaviour, subjective norm and perceived behavioural control.

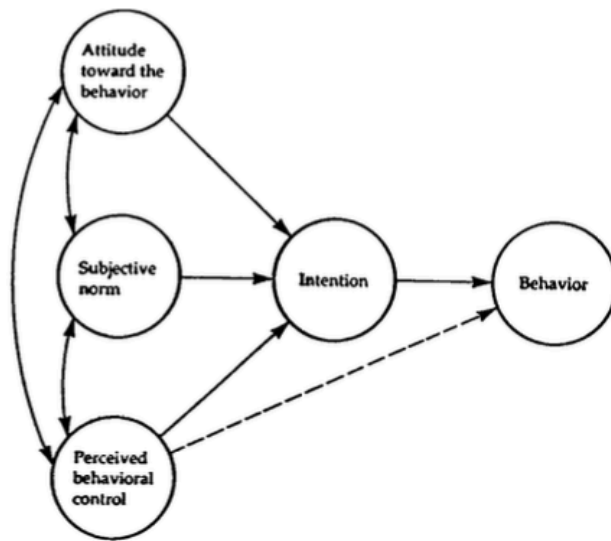


Figure 1. Theory of Planned Behaviour
Source: Ajzen 1991, 182

The centre objective of TPB is the intention to perform a behaviour, Ajzen (1991, 181) described the basic rule of the TPB as following:” the stronger the intention to engage in a behaviour, the more likely should be its performance”. That rule applies when the behaviour is under volitional control. The relative importance of the factors of TPB varies within different situations and behaviours, therefore it can be assumed that depending on the study, the behavioural indicators make different contributions to intention. (Ajzen 1991, 185)

TPB have been used extensively for researching different kind of sustainable behaviours and showed success in studies such as purchasing environmentally friendly products (Kumar 2012), consumption of sustainable fashion (Brandão, Costa 2021) and meat consumption. (Çoker, Van der Linden 2020)

Ajzen & Fishbein (2000, 3) described that the term ‘attitude’ indicates an evaluation of a behaviour, concept or an object. It estimates how favourable or unfavourable the behaviour in question is. (Ajzen 1991, 188) The dimensions that can capture attitudes are for example; liking – disliking, good – bad, pleasant – unpleasant and enjoyable – unenjoyable. These dimensions can be pointed towards a person or a group of people, policy or a judgement. (Ajzen, Fishbein 2000, 3) As an individual acquires information about a certain behaviour, it is automatically linked to a certain

outcome, which can be positive or negative, thus attitudes toward behaviour are obtained automatically. (Ajzen 1991, 191) Attitudes are formed by beliefs which are associated to an object with a certain attribute, the subjective values of the object's attributes in interaction with the strength of the associations determines individuals' general attitude toward an object. (Ajzen 2001, 30) Attitudes formations contains only the information that is currently available to the individual. Hence, when new information comes available, it may lead to an attitude change, depending on the reception and acceptance of that new information. (Ajzen, Fishbein 2000, 4) Many studies towards environmental issues that have utilized the TPB have shown that attitudes have a great impact on intention. (Çoker, van der Linden 2020, Krispenz, Bertrams 2020) Attitudes are measured using linear scaling models such as Likert-scale, which are widely used when measuring attitudes. (Ajzen & Fishbein 2000, 14) Likert-scale consist of linear scales where the number of points can vary. This research will use 5-point linear scales, where each point is numbered from one to five. Each number then represents a level of agreement. (Likert 1932, 15)

Ajzen (1991, 199) defined subjective norm as “expected mode of conduct”. Subjective norm describes the social pressure in which an individual feel approved or disapproved to perform a behaviour by someone they consider as important people in their life. Usually people who are considered as a part of the group of important people are individual's friends, family, co-workers or peers. (Ajzen 1991, 195) If a person believes that the important people in their life expects them to engage in a certain behaviour, the subjective norm will exert pressure to engage in the behaviour, similarly when the important people expects them to not engage in a behaviour, subjective norm will exert pressure to not engage in that behaviour. (Ajzen, Fishbein 2005, 193)

The influence of subjective norms to intention has shown different results in previous studies. Ajzen (1991, 189) concluded that sometimes there is no distinct pattern between subjective norm. After the discovery, he came to the conclusion that sometimes individual's personal consideration surpassed the perceived social pressure. However, sometimes, when it comes to environmental issues, subjective norm can be a major contributor to intentions. (Sukhu, Scharff 2018)

Perceived behavioural control is individual's presumption on its abilities to perform a behaviour, also described as the ease or difficulty of performing a behaviour. It is also assumed that past experiences and anticipated difficulties reflects perceived behavioural control. (Ajzen 1991, 188) As mentioned before, perceived behavioural control was an addition to the earlier model of TPB, TRA, the addition of perceived behavioural control was necessary in order to capture behaviours

that are not under volitional control. Resources available to an individual should increase the likelihood of a behaviour, similarly, lack of resources can affect negatively on an individual's performance of a behaviour. These resources can be for example time, money and skills. (Ajzen 1991, 182)

Behavioural achievements can be predicted directly with the use of perceived behavioural control since the measure of actual control can be replaced with perceived behavioural control. Replacing actual control with perceived behavioural control depends on the precision of perceptions, for the perceived behavioural control to be accurate, an individual should have enough information, requirements and resources and be familiar with the behaviour. Whether these conditions won't occur, perceived behavioural control might not be accurate to measure behavioural prediction. (Ajzen 1991, 184-185)

Intentions are a central factor in TPB as can be seen from Figure 1. Attitudes, subjective norm and perceived behavioural control are the determinants of intention, and all of the indicators are contributing for behavioural intentions. It is assumed that the motivational factors that impact behaviour are captured by intentions. The motivational factors are indicators of the work an individual is willing to make in order to perform a behaviour, how hard they are willing to try to perform a behaviour. That works however only when the behaviour is under volitional control. (Ajzen 1991, 181)

Sheeran (2002, 10) argued that when a behaviour requires only single action, prediction of behaviour from intentions are greater than when the behaviour requires multiple actions. For example, 'intention to live sustainably' includes multiple actions such as recycling, saving energy and downsizing, when 'intention to read a book about sustainability' includes only one action; reading. Multiple factors are needed in order to convert intention to behaviour; knowledge, ability, resources, opportunity, availability, cooperation and unexpected situations. Intentions are measured by asking the respondent to state their level of agreement in statements such as 'I intend to do X'. (Sheeran 2002, 2)

Behavioural criteria contain at least one noticeable action performed by an individual. The action that is being measured can be a variety of things; attending a meeting, purchasing products, or donating blood. (Ajzen, Fishbein 1977, 889) In this research, the action measured is the consumption of meat. A behavioural entity is considered to include four different elements; action,

target, context and time. Target referring to where the action will be targeted, in what context the action will be performed and in what time. Depending on the observation, it can include all four elements or just one of the elements. The prediction is based on a notion of consistency, where an individual with favourable attitudes toward an action will perform favourable behaviour and an individual with unfavourable attitudes will not perform an unfavourable behaviour. (Ajzen, Fishbein 1977, 889)

1.2. Meat Attachment Questionnaire

Meat Attachment Questionnaire (MAQ) is a concept which was developed to gain deeper understanding on consumers' willingness to reduce the consumption of meat and to accept more plant-based diet. By following an in-depth approach to consumer representation of meat MAQ was developed. By the results Graça *et al.* had from their studies when constructing the MAQ they came to the conclusion that meat attachment is relevant, separate and self-standing psychological construct. (Graça *et al.* 2015, 24-25) The measure in MAQ indicates to the positive bond towards meat consumption. It includes 16 questions which are grouped into four factors. The four factors were labelled as (Graça *et al.* 2015):

- 1) Hedonism
- 2) Affinity
- 3) Entitlement
- 4) Dependence

Hedonism refers to whether meat in person's diet is considered as a source of pleasure, higher scores indicating that it is a source of pleasure, similarly lower scores indicate it is not. Affinity correlates the affinity a consumer has towards the consumption of meat. In this section the measurement is reversed, measuring feelings of repulsion. The score then is also reversed. Entitlement measures the entitlement towards the consumption of meat, i.e. how entitled a consumer feel to be eating meat. Lastly, dependence measures how dependent consumer feels towards consuming meat. By combining the four factors the results show the individuals meat attachment, which is how committed an individual is to consuming meat products. (Graça *et al.* 2015)

MAQ includes 16 questions which are divided into four sections, hedonism includes four questions, affinity also includes four questions. Entitlement includes three questions and dependence five questions. MAQ also measures attitudes, subjective norm and perceived behavioural control which were introduced in chapter 1.1. with the Theory of Planned behaviour, to measure intentions and willingness. Willingness meaning a 'openness to possibly performing the behaviour' (Lenz *et al.* 2018, 231) In addition to measures mentioned above MAQ also measures consumers human supremacy feels, dietary identity and eating habits. (Graça *et al.* 2015)

The results Graça *et al.* gained from their studies showed that consumers who are more attached to meat were less motivated to change their eating habits, more likely to eat meat regularly, hold positive attitudes towards the consumption of meat, perceive more social pressure to eat meat, support that human are superior to animals, were more likely to identify as an omnivore than as a vegetarian or vegan. Differences in gender was also noted in the studies since men tended to score higher than women in all dimensions concerning meat attachment. (Graça *et al.* 2015, 29-30) Lenz *et al.* (2018) came to same conclusion concerning the role of gender, when their study indicated as well that men are more likely to have a positive bond with meat.

Garça *et al.* (2015) as well as Lenz *et al.* (2018) both came to the conclusion in their studies that the use of MAQ gained more thorough understanding on the willingness to reduce the consumption of meat compared to only using the TPB. The MAQ was selected for this research for its promising results it has gained in Portugal (Garça *et al.* 2015) and in New Zealand (Lenz *et al.* 2018).

2. BACKGROUND ON EATING BEHAVIOURS

Nutrition is a necessity for people to stay alive. Nowadays in westernized societies where food is widely available the choice on what to eat is becoming more difficult compared to the times where the food had to be hunted or gathered. Eating is considered as a rewarding behaviour which is linked to mood and emotions. (Meule, Vögele 2013) Food is also a way for people to express their standards and identities and is considered as a social activity. (Nezlek, Forestell 2020, 45)

This chapter gives a deeper view on eating behaviours, for the purpose of this study, this chapter will focus on eating behaviour of omnivores as well as eating behaviours of vegetarians and vegans.

2.1. Eating behaviours of omnivores

Eating meat in western countries is usually traditional and central eating pattern with cultural and symbolic meaning, which may result in the difficulty for abstaining from it. Especially in family meals or in restaurants and cafeterias. (Koch *et al.* 2021, 6) Men are still generally more reluctant to reduce their meat consumption than women (Çoker, van der Linden 2020) this could be explained by the fact that meat is gendered: meat is considered masculine whereas fruits and vegetables are considered feminine. (Allen *et al.* 2000, 407) The differences on meat consumption between genders have been widely discussed and studied, men and women who describe themselves as omnivores view vegetarianism very differently, additionally the interaction with meat seems to be on totally different levels. Many cultures including European culture, have had the idea that meat is mainly men's food. (Ruby 2012, 147-148)

A study conducted in the United Kingdom which was examining the reduction of consuming meat as a part of reaching more sustainable diet, showed that behaviours which were not food-related (such as using public transportation and recycling) were more acceptable than behaviours related to food, (Macdiarmid *et al.* 2016, 490) which strengthens the suggestion that eating meat is

traditional and dominant eating pattern. Vegetarian food is considered hard to prepare, boring and limited in options amongst omnivores (Povey *et al.* 2001, 16)

Omnivores do understand the motivations of someone following a vegetarian diet, study conducted in Southern Australia showed that health reasons were endorsed most, many would be willing to increase the amount of fruits and vegetables consumed in their diet and consume less saturated fat. Secondly animal welfare was brought up as factor that the participants were concerned about and lastly, yet still significant factor was environmental issues. (Lea, Worsley 2002, 507-508) The study was not the only one to recognise attitude change from omnivores towards vegetarian diets, studies conducted in United Kingdom (Richhardson *et al.* 1993) and in Canada (Serecon Management Consulting Inc 2005) also showed results that people are actively seeking meat alternatives and are trying to reduce their meat consumption. In a study conducted by Povey *et al.* (2001, 22) it was noted that though omnivores had relatively positive attitudes towards their own diet, they were less positive compared to other diets that were involved on the study. On the contrary to those who have more open-minded look on vegetarian diets, some omnivores are still reductant to reduce their meat consumption and would prefer to eat meat on every meal. (Koch *et al.* 2021, 4)

The reasons why omnivores refuse to follow a vegetarian diet have been studied. The study conducted in Australia revealed that the main reason for not following a vegetarian for diet for both men and women was that the participants enjoyed eating meat. The study also revealed that the reluctance of changing eating habits, belief that humans are meant to eat meat, family's dietary choices and lack of knowledge when it comes it vegetarian diets. Clear gender differences were also noted; men were more likely to think that humans are meant to eat meat and women were more likely to be state family's dietary choices as a reason for not following a vegetarian diet. It was also noted that differences in age were present. (Lea, Worsley 2002, 507)

2.2. Eating behaviours of vegetarians and vegans

A vegetarian generally refers to a person who does not eat meat, however, it consists different diets with different restrictions. Lacto-vegetarians (those following this diet consume dairy products), ovo-vegetarians (those following this diet consume eggs) and pescatarians (those following this diet consume fish) diets are less restraining than a vegan diet. If a person is following a vegan diet, they are avoiding all animal-based products (meat, milk, eggs, honey, insects) and usually avoid

purchasing products that are animal-derived (leather, wool). (Nezlek, Forestell, 2020, 45). In this thesis the term 'vegetarian' will include lacto-vegetarians, ovo-vegetarians and pescatarians unless stated otherwise.

An estimation of 1.5 billion vegetarians worldwide have been made. (Leahy *et al.* 2010, 2) That could be roughly divided into two separate categories; 'vegetarians of choice' which most vegetarians are in westernized societies, meaning that meat is readily available, but these individuals chose not to consume meat and 'vegetarians of necessity' which on the other hand means that meat is not readily available for these individuals (e.g. it is too expensive) and are not consuming meat for that reason. (Nezlek, Forestell 2020, 45) This thesis is considering only vegetarians of choice, since the research is conducted in a western society. It should be also noted that sometimes restrictions concerning the consumption of meat are religious, for example in Hinduism and Buddhism (Poll, Stern 2020, 3251) The main religious group in Finland is Evangelic Lutheran where dietary restrictions don't play a big role, thus it will not be noted in this thesis.

The three most outstanding reasons for people to start following a vegetarian diet are concerns about animals, health and the environment. In many cases the motivation for an individual to adopt a vegetarian diet is a combination of the concern for animals, health and environment. Social identity motivation means that an individual adopts vegetarian diet for the 'idea' of being vegetarian, that mirrors the aspiration to identify with a social group which can benefit one's self-esteem. (Nezlek, Forestell, 2020, 47) Vegetarians are more likely to consider sustainability when making purchases (Koch *et al.* 2021,7) and also have higher environmental concern than omnivores. (Poll, Stern 2020, 3262)

Factors affecting the maintenance of a vegetarian diet include personal factors, social network and environmental resources. By combining these three factors, an individual will have knowledge and reassurance of the diet (personal factor), feeling socially accepted and having sensations of fellowship (social network) and have necessary resources to purchase produce suitable for the diet (environmental resources). It was concluded that the importance of social network was the most crucial factor in maintaining a vegetarian diet (Jabs *et al.* 1998, referenced in Ruby 2012, 143) which can also be seen in study where Povey *et al.* (2001, 22) came to the conclusion that vegetarians might endure social pressure for their diets because of the diet's restrictive nature, for example visiting someone for dinner or going to restaurants can be an uncomfortable experience. Thus, if looking at the reasons that caused a vegetarian to abandon their diets it is not surprising

that new environments where the social circle is different have contributed to a change in diet. Other reasons that have been found to contribute to the abandonment of vegetarian diet are missing the taste of meat and concerns of health which is caused by inadequate nutrition. (Barr, Chapman 2002, 358)

While vegan and vegetarian behaviours can be considered very similar, many differences can be found between them. Vegans tend to feel more concerned about animal welfare and how their choice of food could affect to that. Studies have also found that vegans are more concern about the environment than vegetarians and have stronger beliefs towards meat than vegetarians. (Ruby 2012, 146) When Povey *et al.* (2001) applied the TPB to study the attitudes towards following a vegan or vegetarian diet, the study showed that vegans have social pressure to follow a vegetarian diet, yet vegetarians experience social pressure to stick to their own diet. Social pressure that vegans experience could also be explained with the diet's restrictive nature. The study also found out that vegetarians hold more favourable attitude towards meat than vegans. (Povey *et al.* 2001, 22) A lot of demographical factors have been noted to fit universally with vegetarians; women (Çoker, van der Linden 2020) who have politically liberal views. (Ruby 2012, 143)

As can be seen from this chapter, eating behaviours of omnivores, as well as eating behaviours of vegetarians and vegans have been studied a lot. With this research and with the use of MAQ a new perspective on Finnish willingness to reduce meat consumption can be acquired.

3. RESEARCH ON CONSUMERS' MEAT CONSUMPTION

This chapter will present the online questionnaire which was conducted in order to reach the aim of this thesis and the findings from the questionnaire. The online questionnaire measured respondent's attitude, subjective norm, perceived behavioural control, willingness and intentions towards consuming meat according to Ajzen's Theory of Planned Behaviour (1991) as well as respondent's hedonism, affinity, entitlement and dependence towards consuming meat according to Meat Attachment Questionnaire by Graça *et al.* (2015).

3.1. Study methods

To reach the aim of this thesis, an online questionnaire was conducted. The survey was formed in Google forms and distributed via online platforms such as Facebook and WhatsApp. Distribution through social media was chosen for its convenience and reachability. The survey collected answers from 26.10.2021 to 2.11.2021 and yielded total of 67 answers. Before the actual questionnaire, the respondents were informed about the research purpose, for what use the answers will be going as well as the anonymity the respondents will have. The introduction part also clarified that in this research the term meat will be including red meat, white meat and fish, and also that the term vegetarian refers to all variations of vegetarian diets excluding vegan diet. The survey was divided into four sections; first section included statements that measured attitude, subjective norm, perceived behavioural control, willingness and intentions according to Theory of Planned Behaviour. Attitudes were measured with three statements, where the respondents were asked to state their feelings towards meat on spectrums good-bad, positive-negative and pleasant-unpleasant. Subjective norm was measured with two statements which were formulated as suggested by the Meat Attachment Questionnaire; one measured the social pressure coming from the important people around the respondent and the other measured the motivation to comply what the important people around the respondent want them to do. Perceived behavioural control was measured with three statements that were stated as suggested by the Meat Attachment Questionnaire; measuring if the respondent considers that they are capable of changing their habits,

reduce their meat consumption and lastly making sure the volitional control with statement that asked the respondent whether their possible meat reduction would be under their own control. Willingness and intentions were measured with similar statements that asked the respondent to state their agreement on willingness to reduce meat consumption and willingness to follow a plant-based diet. With intentions the respondents were asked to state their intention on reducing meat consumption and to follow a plant-based diet. The statements were placed in a random order. The second section measured the respondent's feelings of hedonism, affinity, entitlement and dependence towards consuming meat according to MAQ (Graça *et al.* 2015). For this section the survey used the same statements as the original model as these they were solely created for the use of this model. Statements were placed again in random order.

Third section measured respondent's dietary identity, eating habits, feelings of human supremacy and concerns about environment, their own health and animal wellbeing. Dietary identity was measured by asking the respondents if they would describe themselves as an omnivore, a vegetarian or a vegan. Eating habits were measured by asking how often the respondents consume meat within their meals per week, options being; never, once or twice per week, three or four times per week and five or more times per week. Human supremacy feelings were measured as they were measured by Graça *et al.* (2015) asking the respondent to state their level of agreement to statement 'animals are inferior to humans'. Then environmental concern, concern on respondent's health and concern on animal wellbeing was measured. Author included the last statements to the survey for further analysis. Last section included demographic questions which were; gender, age, employment status, education and place of residence in Finland. Survey used 5-point linear scales on all statements excluding dietary identity, eating habits and demographic questions where five means strongly agree, four agree, three not agreeing nor disagreeing, two disagree and one strongly disagree All reversed-scoring statements are marked with "*" after the statement in the tables. The survey was available in English.

To analyse the results from the questionnaire this thesis used a Kruskal-Wallis H test to determine whether the responses from the three different dietary identities are statistically different. The Kruskal-Wallis H test was chosen as a data analysis tool for this thesis for its ability to compare three independent groups, when the data is not normally distributed. Ordinal data can be used since the test acquires the data in the form of ranks. The Kruskal-Wallis H test requires two conditions for it to be measured using the chi square value, first that there are at least three independent groups

where the data is at least ordinal, and second that there are more than five observations in each group. (Chan, Walmsley 1997, 1755-1758)

$$H = \frac{12}{N(N+1)} \sum_{i=1}^C \frac{R_i^2}{n_i} - 3(N+1)$$

Figure 2. The formula of the Kruskal-Wallis H test

Source: Chan, Walmsley 1997, 1759

Figure 2. shows the formula for computing the Kruskal-Wallis H test where N represents the total number of observations in all groups, C represents the number of groups, i, the sample identifier, n_i the number of observations in that sample and R_i the sum of the ranks. (Chan, Walmsley 1997, 1761) After calculating H, the probability value (p) was obtained using the chi square value since this research had at least five observations in each group. For the purpose of this study, a confidence level of $p < 0.05$ was chosen to determine whether the groups differentiate from each other statistically. The calculations were made in Microsoft Excel. The tables in chapter 3.2 will present the total mean for the statement, as well as mean for each dietary group, standard deviation for each dietary group, H statistic and p-value on all statements.

The survey yielded 67 answers and the table below showcases the sample characteristics of this survey. Out of the 67 respondents 30 were male, 35 were female and 2 answered 'prefer not to say' meaning they chose not to disclose their gender. 'Other' gained no answers. Age was asked as an open question and the average age was 32 years old. For convenience, age groups were created to ease the representation. Age group 26-34 was largest with over 50% of the answers coming from that age group, second largest age group was 18-25 with a percentage of 24.2, other age groups had clearly less respondents; one answer from under 18, four from 36-45, six from 46-55 and 5 from 56-65. There were no answers from over 65-year olds. Majority of the respondents are working full time, 41 respondents which equals to 61.2%. Students were the second most represented with 18 respondents (27.3%), seven respondents are working part time and one is unemployed. Retired gained no answers. 67.2% of the respondents have a university degree or a degree from university of applied sciences, 31.8% have completed upper secondary school and comprehensive school gained one answer which equals to 1.5%. Majority of the respondents are living in Uusimaa area with a percentage of 91, three of the respondents are living in Varsinais-Suomi, one in Pirkanmaa and two in Kymenlaakso.

Table 3.1 Sample characteristics

Sample characteristics		Number of responses	Percentage %
Gender	Male	30	44.8%
	Female	35	52.2%
	Prefer not to say	2	3%
	Other	0	0%
Age	Under 18	1	1.5%
	18-25	16	23.9%
	26-35	35	52.2%
	36-45	4	6%
	46-55	6	9%
	56-65	5	7.4 %
	Above 65	0	0%
Employment status	Full time	41	61.2%
	Part time	7	10.4%
	Unemployed	1	1.5%
	Student	18	26.9%
	Retired	0	0%
Education level	Comprehensive school	1	1.5%
	Upper secondary school	21	31.3%
	University or university of applied sciences	45	67.2%
Place of residence	Uusimaa	61	91%
	Varsinais-Suomi	3	4.5%
	Pirkanmaa	1	1.5%
	Kymenlaakso	2	3%

Source: Appendix 1, author's own calculations

Table 3.1 showcases only the areas which gained answers from the respondents, all options can be seen in Appendix 1. As the questionnaire was distributed through author's personal social media accounts, the respondents include people from author's personal life such as friends, family members and co-workers and their friends and family, hence, most of the respondents are situated in Uusimaa, Finland and a few from other southern regions in Finland.

3.2. Survey findings

Respondents dietary behaviour, eating habits and human supremacy feels can be seen below in table 3.2. Out of 67 respondents 76% identified as an omnivore, 15% as a vegetarian and 10% as a vegan. Eating habits were divided as per dietary behaviour, 19.4% of the respondents never eats

meat, 14.9% eats meat once or twice per week, 35.8% eats meat three or four times per week and 29.9% eats meat five or more times per week. All respondents who identified as vegans answered that they never eat meat and seven out of 10 vegetarians also stated they never eat meat. Three vegetarians stated they eat meat once or twice per week. For omnivores, 24 respondents which equals to 47% stated they eat meat three or four times a week. This option gained the most answers by omnivores. 20 answered “five or more times a week” which equals to 39%, 7 answered “once or twice per week” which equals to 14%. None of respondents who identified themselves as omnivores stated they never eat meat. The total mean of human supremacy feels is 2,5 which can be considered relatively low. If looked at all the dietary identities separately, omnivores had a mean of 2.8, vegetarians had a mean of 2.1 and vegans had a mean of 1.2. The Kruskal-Wallis H test showed that there are significant differences between dietary identities considering human supremacy

Table 3.2 Dietary identity, eating habits and human supremacy feels

Statement		Number of responses		Percentage
I would describe myself as	Omnivore	51		76%
	Vegetarian	10		15%
	Vegan	6		9%
How many times do you consume meat in one week on average?	Never	13		19.4%
	Once or twice per week	9		14.9%
	Three or four times per week	24		35.8%
	Five or more times per week	20		29.9%
Animals are inferior to people	Mean	Standard deviation (SD)	H statistic	P-value
	2.5 (n=67)		14.9282	P=0.0006
	2.8 Omnivores (n=51)	0.8		
	2.1 Vegetarians (n=10)	1		
	1.2 Vegans (n=6)	0.4		

Source: Appendix 1, author’s own calculations

Concerns regarding environment, animal wellbeing and one's health was measured and can be seen in table 3.3. Respondents had a high concern for the environment with a mean of 4.3. Animal wellbeing was not considered as important as the environment and concern on respondent's own health had a mean of 2.9. The means of the concern for the environment showed slight differences between omnivores, vegetarians and vegans and the Kruskal-Wallis H test proves there are significant statistical differences between groups. Deviation of answers was only detected within the group of omnivores. These results indicate that all dietary identities have concerns for the environment. Health concerns were significantly higher with omnivores than the other dietary identities. Omnivores had a mean of 3.3, vegetarians had a mean of 1.9 and lowest mean was with vegans, which was 1.8. Concerns of animal wellbeing showed similar pattern as the concern for the environment, most concerned about animal wellbeing were vegans which had a mean of five, vegetarians also had high concern for animal wellbeing with a mean of 4.7. Omnivores showed also concerns for animal wellbeing, yet were less concerned than vegans and vegetarians, omnivores had a mean of 3.5. Kruskal-Wallis H test showed that the groups are significantly different on concerns for one's health and concern for animal wellbeing.

Table 3.3 Concerns about environment, animal wellbeing and one's health

Statement	Mean	SD	H statistic	P-value
I am concerned about the environment	4.3 (n=67)		21.0519	P<0.0001
	4 Omnivores (n=51)	0.8		
	5 Vegetarians (n=10)	0		
	5 Vegans (n=6)	0		
I am concerned about my own health*	2.9 (n=67)		10.7625	P=0.0046
	3.3 Omnivores (n=51)	1.2		
	1.9 Vegetarians (n=10)	1.7		
	1.8 Vegans (n=6)	1.6		
I am concerned about the wellbeing of animals	3.8 (n=67)		23.4138	P<0.0001
	3,5 Omnivores (n=51)	0.9		
	4,7 Vegetarians (n=10)	0.5		
	5 Vegans (n=6)	0		

Source: Appendix 1, author's own calculations

Table 3.4 showcases respondents' attitudes. All statements had quite similar total means, highest total mean being 3.3 and the lowest 3.1. This research anticipated consistency in attitude statements thus all the statements were worded similarly. Omnivores hold positive attitudes towards meat, they had a total mean of 3.7 which is significantly higher than the other two dietary identities. Vegetarians calculated total mean on all statements is 1.9 and vegans had even lower mean, 1.1. Kruskal-Wallis H test showed that there are statistical differences between groups on all statements.

Table 3.4 Attitude toward the behaviour according to the TPB

Statement	Mean	SD	H statistic	P-value
Eating meat is good	Total 3,1 (n=67)		26.0820	P<0.0001
	3.6 Omnivores(n=51)	1.1		
	2 Vegetarians(n=10)	0.6		
	1 Vegans (n=6)	0		
Eating meat is pleasant	Total 3,3 (n=67)		32.7063	P<0.0001
	3.8 Omnivores (n=51)	0.9		
	1.7 Vegetarians (n=10)	0.5		
	1 Vegans (n=6)	0		
My feelings towards consuming meat are positive	Total 3,2 (n=67)		27.0926	P<0.0001
	3.7 Omnivores (n=51)	0.9		
	2 Vegetarians(n=10)	0.9		
	1.2 Vegans (n=6)	0.4		

Source: Appendix 1, author's own calculations

Subjective norm or social pressure is visualised on table 3.5. Calculated means of the experienced social pressure shows quite similar results from all dietary identities. When measured the motivation to comply, the results indicate that all dietary identities seemed to consider their personal consideration more important than pressure from their social circles. Vegans had clearly the lowest mean of 1.3 when omnivores and vegetarians had higher, but still not indicating motivations to comply. Kruskal-Wallis H test showed that there are no statistically significant differences between the dietary identities on the statements concerning subjective norm.

Table 3.5 Subjective norm according to the TPB

Statement	Mean	SD	H statistic	P-value
The important people around me think I should eat meat	2.7 (n=67)		1.8038	P=0.4058
	2.8 Omnivores (n=51)	1.1		
	2.7 Vegetarians (n=10)	0.7		
	2.2 Vegans (n=6)	1.2		
I am willing to do what the important people around me think I should do	2.2 (n=67)		5.5491	P=0.0624
	2.3 Omnivores (n=51)	1		
	2.1 Vegetarians (n=10)	0.9		
	1.3 Vegans (n=6)	0.5		

Source: Appendix 1, author's own calculations

Respondents answers concerning perceived behavioural control can be seen in table 3.6. All dietary behaviours consider that their meat reduction would be under their own control, mean being four or over with all dietary identities. Kruskal-Wallis H test proved that there are no significant differences between dietary identities. Vegetarians had visibly highest believe in their own capabilities, omnivores had the lowest believe, but only slightly; all dietary identities mean indicates high or rather high believe in their own capabilities. Statement that measured the difficultness of one's reduction of meat resulted in total mean of 2,4. Omnivores expressed slight feelings of difficultness on meat reduction, it could be concluded that some omnivores still are considering meat reduction as difficult, when some omnivores consider it easier. Vegetarians and vegans showed no difficultness within reducing their meat consumption, implicating that they consider reduction of consuming meat relatively easy. Kruskal-Wallis H test showed that the first two statements' answers had significant differences between dietary identities.

Table 3.6 Perceived behavioural control according to the TPB

Statement	Mean	SD	H statistic	P-value
It would be difficult for me to reduce my consumption of meat	2.4 (n=67)		23.9322	P<0.0001
	2.7 Omnivores (n=51)	1		
	1.6 Vegetarians (n=10)	1.3		
	1 Vegans (n=6)	0		
If I want to, I am capable of changing my habits	4.1 (n=67)		6.1244	P=0.0468
	4 Omnivores (n=51)	0.9		
	4.7 Vegetarians (n=10)	0.5		
	4.2 Vegans (n=6)	1.6		
Reducing my meat consumption would be under my own control	4.3 (n=67)		3.6231	P=0.1634
	4.3 Omnivores (n=51)	1		
	4.9 Vegetarians (n=10)	0.3		
	4.2 Vegans (n=6)	1.6		

Source: Appendix 1, author's own calculations

Results for willingness and intentions to reduce meat consumption can be seen below in table 3.7. Most of the respondents were willing to reduce their meat consumption with a total mean of 3.7, willingness to follow a plant-based diet was lower. Vegans and vegetarians were the most willing to reduce the consumption of meat as well as to follow a plant-based diet. Vegans had a mean of 5 on all statements regarding willingness and intention, vegetarians had slightly lower mean than vegans, however willingness and intention to reduce the consumption of meat and to follow a plant-based diet were high. Omnivores had the lowest willingness and intention towards reduction of meat and to follow a plant-based diet, they were quite willing to reduce meat consumption with a mean of 3.4. Intention on the same matter is only slightly lower, hence it can be considered that intentions to reduce meat are present. Willingness and intention towards following a plant-based diet for omnivores are low thus have no significant willingness or intention to follow a plant-based diet. The Kruskal-Wallis H test showed that with all statements there is significant differences between dietary identities.

Table 3.7 Willingness and intentions according to the TPB

Statement	Mean	SD	H statistic	P-value
Within the next 6 months I am willing to reduce my consumption of meat	3.7 (n=67)		16.1746	P=0.0003
	3.4 Omnivores (n=51)	1.2		
	4.5 Vegetarians (n=10)	0.8		
	5 Vegans (n=6)	0		
Within the next 6 months I am willing to follow a plant-based diet	3 (n=67)		31.9462	P<0.0001
	2.4 Omnivores (n=51)	1.1		
	4.8 Vegetarians (n=10)	0.6		
	5 Vegans (n=6)	0		
Within the next 6 months I intend to reduce my consumption of meat	3.5 (n=67)		24.5164	P<0.0001
	3 Omnivores (n=51)	1.3		
	4.8 Vegetarians (n=10)	0.6		
	5 Vegans (n=6)	0		
Within the next 6 months I intend to follow a plant-based diet	2.9 (n=67)		32.4431	P<0.0001
	2.2 Omnivores (n=51)	1		
	4.8 Vegetarians (n=10)	0.6		
	5 Vegans (n=6)	0		

Source: Appendix 1, author's own calculations

Hedonism, affinity, entitlement and dependence, according to MAQ (Graça et al, 2015) can be seen in tables 3.8-3.11 below. First presented is hedonism; total mean of hedonism was 3,1. Dietary identities showed similar differences as seen in previously in this chapter. Omnivores have hedonistic behaviours towards consuming meat, vegetarians and vegans reveal no significant hedonistic behaviours towards consuming meat. These results support earlier studies on that refusing plant-based options of meat can be affected by liking the taste of meat. Kruskal-Wallis H test showed that there are statistically significant differences between dietary identities in all statements.

Table 3.8 Hedonistic feelings according to MAQ

Statement	Mean	SD	H statistic	P-value
To eat meat is one of the good pleasures of life	3 (n=67)		28.3372	P<0.0001
	3.5 Omnivores (n=51)	1.2		
	1.4 Vegetarians (n=10)	0.5		
	1 Vegans (n=6)	0		
I love meals with meat	3.4 (n=67)		31.4611	P<0.0001
	4 Omnivores (n=51)	1		
	1.9 Vegetarians (n=10)	0.6		
	1.2 Vegans (n=6)	0.4		
I am a big fan of meat	2.9 (n=67)		31.0809	P<0.0001
	3.5 Omnivores (n=51)	1.2		
	1.1 Vegetarians (n=10)	0.3		
	1 Vegans (n=6)	0		
A good steak is without comparison	3.11 (n=67)		27.0324	P<0.0001
	3.7 Omnivores (n=51)	1.3		
	1.4 Vegetarians (n=10)	0.7		
	1 Vegans (n=6)	0		

Source: Appendix 1, author's own calculations

Statements measuring affinity were all reversed where high mean refers to feelings of repulsion and low mean to feelings of affinity. These statements also followed similar pattern as previous statements in this research considering differences between dietary identities. Omnivores showed feelings of affinity towards the consumption of meat on all statements, however, omnivores slightly think eating meat is disrespectful towards meat and environment, this could be resulted by high environmental concern. Vegetarians and vegans show no significant feelings of affinity towards meat. As have been noted in this study, similarly in earlier studies, vegetarians' feelings towards meat are not as extreme as with vegans. As with affinity vegans show high feelings of repulsion towards meat where vegetarians do show feelings of repulsion, though not as high. Similar to statements concerning hedonistic feelings, the Kruskal-Wallis H test showed that there are statistically significant differences between dietary identities in all statements.

Table 3.9 Feelings of affinity according to MAQ

Statement	Mean	SD	H statistic	P-value
I feel bad when I think of eating meat*	2.2 (n=67)		18.7641	P=0.0001
	1.7 Omnivores (n=51)	0.8		
	3.1 Vegetarians (n=10)	1		
	4.3 Vegans (n=6)	1.6		
Meat reminds me of diseases*	2.3 (n=67)		22.1821	P<0.0001
	1.8 Omnivores (n=51)	1		
	3.1 Vegetarians (n=10)	1.2		
	4.8 Vegans (n=6)	0.4		
To eat meat is disrespectful towards life and the environment*	2.7 (n=67)		23.8102	P<0.0001
	2.3 Omnivores (n=51)	1.1		
	3.7 Vegetarians (n=10)	0.8		
	4.8 Vegans (n=6)	0.4		
By eating meat I am reminded of the death and suffering of animals*	2.5 (n=67)		27.3287	P<0.0001
	1.9 Omnivores (n=51)	0.9		
	3.8 Vegetarians (n=10)	1.2		
	5 Vegans (n=6)	0		

Source: Appendix 1, author's own calculations

Statements concerning entitlement can be seen below in table 3.10. Again, with all the statements measuring entitlement, the Kruskal-Wallis H test showed that there are statistically significant differences between dietary identities in all statements. Differences can also be seen in the means of dietary identities per statement. Omnivores had clearly higher mean on all statements than vegetarians and vegans and do have feelings of entitlement towards consuming meat. Vegetarians and vegans has pretty consistent and low means on all statements, vegetarians and vegans don't experience feelings of entitlement towards meat consumption.

Table 3.10 Feelings of entitlement according to MAQ

Statement	Mean	SD	H statistic	P-value
To eat meat is an unquestionable right of every person	3.1 (n=67)		24.9736	P<0.0001
	3.6 Omnivores (n=51)	1		
	1.9 Vegetarians (n=10)	1		
	1.2 Vegans (n=6)	0.4		
According to our position in food chain, we have the right to eat meat	2.9 (n=67)		24.9982	P<0.0001
	3.3 Omnivores (n=51)	1		
	1.9 Vegetarians (n=10)	0.7		
	1.2 Vegans (n=6)	0.4		
Eating meat is natural and undisputable practise	3.1 (n=67)		28.8099	P<0.0001
	3.4 Omnivores (n=51)	0.9		
	1.8 Vegetarians (n=10)	0.8		
	1.2 Vegans (n=6)	0.4		

Source: Appendix 1, author's own calculations

Feelings of dependence can be seen in table 3.11 below. Feelings of dependence towards meat shows similar results as previous MAQ factors. Omnivores was the only dietary identity to show feelings of dependence and clearly had most feelings of dependence compared to the other two dietary identities. Even though, omnivores have feelings of dependence, the means for omnivores are not that high. Vegetarians and vegans don't show feelings of dependence and the answers were rather consistent in all the statements. Similar to measurements of other MAQ factor, vegetarians tend have little higher means than vegans do. Kruskal-Wallis H test showed that there are statistically significant differences in all the statements.

Table 3.11 Feelings of dependence according to MAQ

Statement	Mean (n=67)	SD	H statistic	P-value
I don't picture myself without eating meat regularly	2.6 (n=67)		25.3331	P<0.0001
	3.1 Omnivores (n=51)	1.1		
	1 Vegetarians (n=10)	0		
	1.7 Vegans (n=6)	1.6		
If I couldn't eat meat, I would feel weak	2.1 (n=67)		18.9398	P=0.0001
	2 Omnivores (n=51)	1.1		
	1.2 Vegetarians (n=10)	0.4		
	1 Vegans (n=6)	0		
I would feel fine with a meatless diet*	3.6 (n=67)		28.0277	P<0.0001
	3.1 Omnivores (n=51)	1.1		
	5 Vegetarians (n=10)	0		
	5 Vegans (n=6)	0		
If I was forced to stop eating meat, I would feel sad	2.6 (n=67)		30.5744	P<0.0001
	3.1 Omnivores (n=51)	1.1		
	1 Vegetarians (n=10)	0		
	1 Vegans (n=6)	0		
Meat is irreplaceable in my diet	2.3 (n=67)		21.4052	P<0.0001
	2.6 Omnivores (n=51)	1.2		
	1.3 Vegetarians (n=10)	0.9		
	1 Vegans (n=6)	0		

Source: Appendix 1, author's own calculations

Dietary identities answers on statements were consistent in all sections of this research. There were clear differences between dietary identities according to the Kruskal-Wallis H test on all statements excluding statements that measured subjective norm. This research gained similar results as Graça *et al* (2015) and Lenz *et al* (2018) on their studies.

3.3 Discussion

This thesis showed similar results as previous studies on dietary identity, that women are more likely to be vegetarians or vegans, 100% of vegans and 80% of vegetarians identified themselves as a woman. Also, within feelings of human supremacy, this thesis showed similar results as Graça *et al.* (2015), which stated that omnivores had stronger human supremacy feels than vegans and vegetarians. All dietary identity groups have high environmental concern and concern on animal wellbeing. Omnivores have clearly higher concern on their own health than vegetarians and vegans which can be caused by the consumption of meat.

When looked at the indicators of intention by TPB, attitudes differentiated between dietary identities which was also expected considering the results from previous researches, positive attitudes from omnivores towards the consumption of meat was also expected and are consistent with previous researches (Graça *et al.* 2015, Lenz 2018) which both found out that omnivores hold positive attitudes toward the consumption of meat. Both vegetarians and vegans hold negative attitudes towards the consumption of meat. These results also fit the conclusion from Povey *et al.* (2001) when they come to conclusion that vegetarians usually have more positive attitudes towards meat than vegans. Since some vegetarian diets allow the consumption of fish, the difference between attitudes on vegetarians and vegans could be caused by that. None of the dietary identities suffer from high social pressure to eat meat and are not motivated to do what other want them to do. Statements concerning perceived behavioural concern indicated that there is no lack of volitional control considering the consumption of meat, difficultness to reduce meat consumption was detected with omnivores.

All MAQ factors showed similar results throughout the survey. Table 3.11 shows that omnivores are not connecting the consumption of meat that much with weakness but rather with feelings of happiness. This could indicate that meat is considered more as source of joy and happiness than as a source of strength and power, still feelings of weakness are present which supports the conclusion from the study conducted by Allen *et al.* (2000) that meat is considered masculine. This study showed that omnivores are having feelings of hedonism, affinity, entitlement and dependence. On the contrary, vegans and vegetarians are not contributing to any MAQ factor. This indicates that omnivores have positive bond towards meat consumption and vegetarians and vegans have negative bond towards meat consumption.

For the TPB, it was concluded that attitudes and perceived behavioural control were both significant indicators for intention. Subjective norm seems to have little to none contribution to intentions. Additionally, willingness was found to be a contributor to intention. If looked at the MAQ factors, feelings of hedonism, affinity and entitlement were found to present with omnivores, indicating that they can be indicators on unwillingness to reduce meat consumption, dependence was found to be less critical and showed slight indicators for unwillingness to reduce meat consumption. It can be concluded that possible concerns for environment or own health have driven omnivores more towards the acceptance of reducing meat, however, those concerns are not strong enough to follow a plant-based diet.

This thesis had few limitations. Firstly, with a small sample size, and especially with vegetarians and vegans, it is hard to make peak conclusions that are based in 10 or less respondents, still this thesis gives an outline on how vegans and vegetarians view the consumption of meat. Secondly, the questionnaire was available only in English, not Finnish. This could increase the risk that a respondent does not fully understand the statement hence it is not represented in their native language. Altogether, this thesis found Theory of Planned Behaviour and Meat Attachment questionnaire as a useful tool to determine factors that affect consumers' willingness to reduce the consumption of meat.

CONCLUSION

The aim of this study was to find out Finnish consumers' willingness to reduce their consumption of meat and the aim was achieved by getting answers to 1) What aspects influence consumer's willingness to reduce or not to reduce their meat consumption? 2) How dietary identity affects consumer's willingness to reduce meat consumption?

The aim was achieved with an online questionnaire that was spread through author's social media accounts. The questionnaire yielded 67 answers between 26.10.2021-2.11.2021. Typical respondent was an adult in their late twenties to their early thirties with a higher education, living in Uusimaa, Finland. The questionnaire results were analysed by calculating mean and standard deviation for the statements according to the dietary identity the respondent had chosen, and to see whether there are significant differences between dietary identities, Kruskal-Wallis H test was conducted.

Vegetarians and vegans had highest environmental concern and concern on animal wellbeing and also were the not worried about their own health. Negative attitudes were hold toward meat consumption which also reflected clearly in their willingness and intention to reduce their consumption of meat. Perceived behavioural control was high, and study did not recognise any lack of volitional control. Study acknowledged insignificant amounts of social pressure experienced by these dietary identities. Measurements of hedonism, affinity, entitlement and dependence indicated that vegetarians and vegans have negative bond towards consumption of meat. Vegans are found to have more negative attitudes and bond towards meat than vegetarians, which could be explained by the stricter diet vegans follow. These dietary identities are willing to reduce meat consumption and follow plant-based diet. As for vegans and vegetarians, it could be concluded that some concerns of environment and animal wellbeing affect their willingness to consume meat.

Those who identify as omnivores were found to hold positive attitudes towards consuming meat, considered most social pressure to eat meat and showed the least willingness and intention to

reduce meat consumption. Study showed no lack of volitional control; however, meat reduction is perceived slightly difficult. Feelings of hedonism, affinity, entitlement and dependence were present, yet feelings of dependence were slightly more insignificant than others, leading to conclusion that omnivores have a positive bond toward meat. Study recognised very little willingness and intention to follow a plant-based diet, but recognised willingness and intention to reduce meat consumption. As there were concerns of the environmental as well as concerns on animal wellbeing it could be that willingness to reduce consumption of meat is driven by these concerns. Concerns about own health were also high, which could also affect to the willingness to reduce meat consumption and also could indicate that omnivores are aware of health issues meat consumption holds. Interestingly, none of those factors seem to be enough reason to start following a plant-based diet, thus concerns of the environment, animal well-being and own health does not surpass the willingness to eat meat.

This thesis found significant differences between dietary identities in all aspects of this research excluding the experienced social pressure to eat meat. Attitudes were indicator for intention with all dietary groups, as well as hedonism, affinity and entitlement.

As Finland's cuisine culture is heavily rooted in the consumption of meat, it is challenging trying to change the minds of entire generations on what is good for them. As the results of this thesis show, many different feelings are connected with the consumption of meat and the unwillingness to change is connected to those feelings. When the willingness is higher than the intention, it could possibly refer to the lack of knowledge that revolves around plant-based food, why it is crucial to educate more people on different meat-alternatives and how to use them. As there was willingness to reduce meat consumption detected, easily available meals that include meat alternatives could encourage more people to try them. Normalising vegetarian options in restaurants and cafés could also eventually drive more people to try them. As previous studies and this thesis detected that women were more likely to follow a vegetarian and vegan diets, marketing efforts towards men in their early twenties to thirties could help to drive more people into plant-based foods and therefore to reduce their meat consumption. As these results helped to gain a new perspective on consumers' willingness to reduce their meat consumption but the sample sizes were quite small, more research on the matter with larger sample size could be helpful, also including more variation in place of residence and generations should bring more relevant information insight on the issue and also to detect whether the age and/or living elsewhere than southern Finland affects the willingness to reduce meat consumption.

LIST OF REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, pp. 179–211.
- Ajzen, I. (2001) Nature and Operation of Attitudes. *Annual Review in Psychology*, 52, pp. 27-58
- Ajzen, I., Fishbein M. (2000). Attitudes and the Attitude-Behavior Relation: Reasoned and Automatic Processes. *European Review of Social Psychology* 11(1):1-33.
- Ajzen, I., Fishbein M. (2005). The Influence of Attitudes in Behavior. *The handbook of attitudes*, pp. 173-221
- Alonso, M.E., González-Montaña, J.R., Lomillos, J.M. (2020) Consumers' Concerns and Perceptions on Farm Animal Wellbeing. *Animals* 10(3): 385
- Barr, S., Chapman, G. (2002) Perceptions and practices of self-defined current vegetarian, former vegetarian and nonvegetarian women. *Journal of the American Dietetic Association*, 102, pp. 354-360
- Brandão, A., Costa, A. (2021) “Extending the theory of planned behaviour to understand the effects of barriers towards sustainable fashion consumption.” *European business review*, 33.5, pp. 724-774
- Chan, Y., & Walmsley, R. P. (1997). Learning and understanding the Kruskal-Wallis one-way analysis-of-variance-by-ranks test for differences among three or more independent groups. *Physical therapy*, 77(12), pp. 1755–1762
- Clark, M., Springmann, M., Hill, J., & Tilman, D. (2019) Multiple health and environmental impact of foods. *National Academy of Sciences*, 116
- Çoker, E.N., van der Linden, S. (2020) Fleshing out the theory of planned of behavior: Meat consumption as an environmentally significant behavior. *Current Psychology*
- Cui, K., Liu, Y., Zhu, L. *et al.* (2019) Association between intake of red and processed meat and the risk of heart failure: a meta-analysis. *BMC Public Health* 19, 354
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Garnett, E., Balmford, A., Sandbrook, C., Pilling, M., Marteau, T. (2019) Impact of increasing vegetarian availability on meal selection and sales in cafeterias. *PNAS*, 116, pp. 20923-20929

- Graça, J., Calheiros, M. M., & Oliveira, A. (2015). Attached to meat? (Un) Willingness and intentions to adopt a more plant-based diet. *Appetite*, 95, pp. 113-125.
- Jabs, J., Devine, C. M., & Sobal, J. (1998a) Maintaining vegetarian diets: Personal factors, social networks and environmental resources. *Journal of the Canadian Dietetic Association*, 59, pp 183-189
- Kantar (2021) Korona sai suomalaiset keittiöön ja vahvisti nousevia ruokatrendejä. Retrieved from <https://www.kantar.fi/uutiset/ruokatrendit>. Accessed in 12.12.2021
- Krispenz, A., Bertrams, A. (2020) “Correlates of the Intention to Reduce Meat Consumption.” *Sustainability*, 12, 4774.
- Kumar, Bipul. (2012). “Theory of Planned Behaviour Approach to Understand the Purchasing Behaviour for Environmentally Sustainable Products.” Working Paper - IIM Ahmedabad.
- Koch, F., Krems, C., Heuer, T., & Claupein, E. (2021). Attitudes, perceptions and behaviours regarding meat consumption in Germany: Results of the NEMONIT study. *Journal of Nutritional Science*, 10
- Lea, E., Worsley, A. (2003) Benefits and barriers to the consumption of a vegetarian diet in Australia, *Public health nutrition*, vol. 6, no. 5, pp. 505-511.
- Leahy, E., Lyons, S., Tol, R.S.J. (2010) An estimate of the number of vegetarians in the world ESRI working paper No. 340.
- Lehto, E., Kaartinen, N., Sääksjärvi, K., Männistö, S., & Jallinoja, P. (2021). Vegetarians and different types of meat eaters among the Finnish adult population from 2007 to 2017. *British Journal of Nutrition*, 1-13
- Lentz, G., Connelly, S., Miroso, M., Jowett T. (2018) Gauging attitudes and behaviours: Meat consumption and potential reduction. *Appetite*. 1;127, 230-241.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology*. 22, 5-55.
- Luke, Mitä Suomessa syötiin vuonna 2020. Retrieved from <https://www.luke.fi/uutinen/mita-suomessa-syotiin-vuonna-2020/> Accessed on 6.10.2021
- Luke, Ruokatuotannon ja -kulutuksen vaikutukset ympäristöön ja ilmastoon. Retrieved from <https://www.luke.fi/tietoa-luonnonvaroista/ruoka-ja-ravitsemus/ruoan-ilmastovaikutukset/> Accessed on 6.10.2021
- Macdiarmid, JI., Douglas, F., & Campbell, J. (2016) Eating like there's no tomorrow: public awareness of the environmental impact of food and reluctance to eat less meat as part of a sustainable diet. *Appetite*, Vol. 96, 487–493.

- Mathur, M.B., Robinson, T.N., Reichling, D.B. *et al.* (2020) Reducing meat consumption by appealing to animal welfare: protocol for a meta-analysis and theoretical review. *Syst Rev* **9**, 3
- Meule, A., Vögel, C. (2013) “The psychology of eating” *Frontiers of psychology*, 4:215
- Motrøen, M. (2020) The Orkla Sustainable Barometer. Retrieved from Life.<https://www.orkla.fi/app/uploads/sites/12/2020/11/Orkla-Sustainable-Life-Barometer-2020-Main-Report.pdf#page=41> Accessed on 8.12.2021
- Nezlek, J., Forestell, C. (2020) Vegetarianism as a social identity. *Current Opinion in Food Science*, Vol. 33, 45-51.
- Pan, A., Sun, Q., Bernstein, A., Shulze, M., Manson, J., Willet, W., Hu, F. (2011) Red meat consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *American Journal of Clinical Nutrition* **94**, pp. 1088-96
- Plohl, U., Stern, T. (2020) From diet to behaviour: exploring environmental- and animal-conscious behaviour among Austrian vegetarians and vegans. *British Food Journal*, Vol. 122 No. 11, pp. 3249-3265
- Povey, R., Wellens, B., Conner, M. (2001) Attitudes towards following meat, vegetarian and vegan diets: an examination of the role of ambivalence. *Appetite*, **37**, 15-26
- Richhardson, N.J., Shepherd, R. & Elliman, N.A. (1993) Current attitudes and future influences on meat consumption in the UK. *Appetite*, **21**, pp. 41-51
- Rouhani, M.H., Salehi-Abargouei, A., Surkan, P.J., Azadbakht, L. (2014) Is there a relationship between red or processed intake and obesity? A systematic review and meta-analysis of observational studies. *Obesity Reviews*, **15-9**, pp. 740-748
- Ruby, M. (2012) Vegetarianism. A blossoming field of study. *Appetite*, **58-1**, 141-150
- Statista, Per capita consumption of meat in Finland in selected years from 1950 to 2020, Retrieved from <https://www.statista.com/statistics/612739/annual-per-capita-consumption-of-meat-in-finland/> 18.9.2021
- Sheeran, P. (2002) Intention—Behavior Relations: A Conceptual and Empirical Review. *European Review of Social Psychology*, **12**, 1-36.
- Serecon Management Consulting Inc. (2005). Canadian food trends to 2020. A long range consumer outlook. *Management*.
- Sukhu, A., Scharff, R. (2018). Will ‘doing right’ lead to ‘doing well’? An examination of green behaviour. *The Journal of Consumer Marketing*, Vol. 35 No. 2, pp. 169-182.

APPENDICES

Appendix 1. Survey questions and results

First section of the survey	
Questions	Answers (x)
Eating meat is good	Linear Scale Totally agree 5 (5) 4 (19) 3 (13) 2 (13) Totally disagree 1 (10)
It would be difficult for me to reduce my consumption of meat	Linear Scale Totally agree 5 (6) 4 (4) 3 (16) 2 (27) Totally disagree 1 (14)
The important people around me think I should eat meat	Linear Scale Totally agree 5 (2) 4 (14) 3 (25) 2 (16) Totally disagree 1 (10)
If I want to, I am capable of changing my habits	Linear Scale Totally agree 5 (26) 4 (29) 3 (7) 2 (4) Totally disagree 1 (1)
Eating meat is pleasant	Linear Scale Totally agree 5 (10) 4 (27) 3 (10) 2 (10) Totally disagree 1 (10)
Reducing my meat consumption would be under my own control	Linear Scale Totally agree 5 (40) 4 (18) 3 (3) 2 (4) Totally disagree 1 (2)

Appendix 1 continues

My feelings towards consuming meat are positive	Linear Scale Totally agree 5 (8) 4 (27) 3 (14) 2 (9) Totally disagree 1 (9)
I am willing to do what the important people around me think I should do	Linear Scale Totally agree 5 (1) 4 (6) 3 (12) 2 (32) Totally disagree 1 (16)
Within the next 6 months I am willing to reduce my consumption of meat	Linear Scale Totally agree 5 (22) 4 (20) 3 (11) 2 (9) Totally disagree 1 (5)
Within the next 6 months I am willing to follow a plant-based diet	Linear Scale Totally agree 5 (16) 4 (9) 3 (14) 2 (15) Totally disagree 1 (13)
Within the next 6 months I intend to reduce my meat consumption	Linear Scale Totally agree 5 (21) 4 (16) 3 (11) 2 (11) Totally disagree 1 (8)
Within the next 6 months I intend to follow a plant-based diet	Linear Scale Totally agree 5 (16) 4 (6) 3 (14) 2 (15) Totally disagree 1 (16)

Second section of the survey	
Questions	Answers (x)
To eat meat is one of the good pleasures in life	Linear Scale Totally agree 5 (11) 4 (19) 3 (9) 2 (13) Totally disagree 1 (15)

Appendix 1 continues

Meat is irreplaceable in my diet	Linear Scale Totally agree 5 (4) 4 (10) 3 (8) 2 (23) Totally disagree 1 (22)
According to our position in the food chain, we have the right to eat meat	Linear Scale Totally agree 5 (7) 4 (12) 3 (27) 2 (11) Totally disagree 1 (10)
I feel bad when I think of eating meat	Linear Scale Totally agree 5 (6) 4 (3) 3 (12) 2 (22) Totally disagree 1 (24)
I love meals with meat	Linear Scale Totally agree 5 (20) 4 (16) 3 (11) 2 (13) Totally disagree 1 (7)
To eat meat is disrespectful towards life and the environment	Linear Scale Totally agree 5 (7) 4 (14) 3 (12) 2 (21) Totally disagree 1 (13)
To eat meat is an unquestionable right of every person	Linear Scale Totally agree 5 (9) 4 (21) 3 (15) 2 (12) Totally disagree 1 (10)
I'm a big fan of meat	Linear Scale Totally agree 5 (11) 4 (14) 3 (16) 2 (8) Totally disagree 1 (18)
If I couldn't eat meat, I would feel weak	Linear Scale Totally agree 5 (4) 4 (3) 3 (10) 2 (26) Totally disagree 1 (24)

Appendix 1 continues

<p>If I was forced to stop eating meat I would feel sad</p>	<p>Linear Scale Totally agree 5 (5) 4 (14) 3 (17) 2 (11) Totally disagree 1 (20)</p>
<p>Meat reminds me of diseases</p>	<p>Linear Scale Totally agree 5 (7) 4 (7) 3 (7) 2 (22) Totally disagree 1 (24)</p>
<p>By eating meat I'm reminded of the death and suffering of animals</p>	<p>Linear Scale Totally agree 5 (9) 4 (7) 3 (10) 2 (21) Totally disagree 1 (20)</p>
<p>Eating meat is a natural and undisputable practice</p>	<p>Linear Scale Totally agree 5 (7) 4 (22) 3 (17) 2 (12) Totally disagree 1 (9)</p>
<p>I don't picture myself without eating meat regularly</p>	<p>Linear Scale Totally agree 5 (5) 4 (15) 3 (16) 2 (13) Totally disagree 1 (18)</p>
<p>I would feel fine with a meatless diet</p>	<p>Linear Scale Totally agree 5 (22) 4 (11) 3 (21) 2 (10) Totally disagree 1 (3)</p>
<p>A good steak is without comparison</p>	<p>Linear Scale Totally agree 5 (18) 4 (14) 3 (9) 2 (9) Totally disagree 1 (17)</p>

Appendix 1 continues

Third section of the survey	
Questions	Answers
I am concerned about the environment	Linear Scale Totally agree 5 (28) 4 (32) 3 (5) 2 (1) Totally disagree 1 (1)
I am concerned about my health	Linear Scale Totally agree 5 (19) 4 (20) 3 (10) 2 (13) Totally disagree 1 (15)
I am concerned about the wellbeing of animals	Linear Scale Totally agree 5 (18) 4 (26) 3 (17) 2 (5) Totally disagree 1 (1)
I would describe myself as	Omnivore (51) Vegetarian (10) Vegan (6)
How many times do you consume meat in one week on average?	Five or more times per week (20) Three or four times per week (24) Once or twice per week (10) Never (13)
Animals are inferior to humans	Linear Scale Totally agree 5 (0) 4 (8) 3 (31) 2 (16) Totally disagree 1 (12)

Fourth section of the survey	
Questions	Answers
Gender	Male (30) Female (35) Prefer not to say (2) Other (0)

Appendix 1 continues

Age	13 (1) 21 (1) 22 (3) 23 (2) 24 (3) 25 (7) 26 (2) 27 (13) 28 (6) 29 (4) 30 (4) 31 (1) 32 (3) 34 (2) 35 (1) 37 (1) 38 (1) 41 (1) 45 (1) 48 (1) 51 (1) 52 (1) 53 (1) 54 (1) 55 (1) 58 (4)
Employment status	Full time (41) Part time (7) Student (18) Unemployed (1) Retired (0)
Level of education	Comprehensive school (classes 1-9) (1) Upper secondary school (21) University or university of applied sciences (45)
Place of residence	Uusimaa (61) Varsinais-Suomi (3) Satakunta (0) Pirkanmaa (1) Kanta-Häme (0) Päijät-Häme (0) Kymenlaakso (2) Etelä-Pohjanmaa (0) Pohjanmaa (0) Keski-Pohjanmaa (0) Pohjois-Pohjanmaa (0) Etelä-Karjala (0) Pohjois-Karjala (0) Etelä-Savo (0)

Appendix 1 continues

	Pohjois-Savo (0) Keski-Suomi (0) Kainuu (0) Lappi (0) Ahvenanmaa (0)
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Source: author's calculations

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