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**DOG OWNERS' INTENTIONS TO PURCHASE ENVIRONMENTALLY  
FRIENDLY DOG FOOD**

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## TIIVISTELMÄ

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Tämän Pro Gradu -tutkielman tarkoitus on syventää ymmärrystä koiranomistajien ostoaikonusmuodostumisesta ekologista koiranruokaa kohtaan. Koiranomistajien määrä on kasvanut räjähdysmäisesti viime vuosien aikana, minkä lisäksi yleisesti kasvavana trendinä kuluttajamarkkinoilla on ollut ekologisten arvojen vaikuttaminen ostokäyttäytymiseen. Lähtökohtina tutkimukselle ovat tiedon tarve siitä, miten ostoaikonus muodostuu juuri ekologisen koiranruoan kohdalla, sekä aiempi tutkimustieto eroavaisuuksista, joita koiranomistajien ostokäyttäytymisessä on havaittu riippuen siitä, ostavatko he tuotteita itselleen vai koiralleen.

Tutkimuksen empiirinen osio suoritettiin kvantitatiivisena tutkimuksena, johon aineisto kerättiin koiranomistajilta syksyllä 2021 kyselylomakkeen kautta. Tutkimusmenetelmänä käytettiin regressioanalyysiä, jonka avulla selvitettiin, mitkä tekijät vaikuttavat ostoaikonusmuodostumiseen. Tutkimuksen tulosten perusteella koiranomistajien ostoaikonusmuodostumiseen vaikuttavat asenne ekologisen tuotteen ostamista kohtaan, subjektiiviset normit sekä koettu kontrolli, jonka vaikuttavuutta moderoi koiran ja omistajan välinen suhde. Lisäksi biosfäärinen arvojen havaittiin vaikuttavan asenteeseen.

## **ABSTRACT**

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The purpose of this Pro Gradu thesis is to deepen the understanding of the formation of dog owners' intentions to purchase ecological dog food. The number of dog owners has grown exponentially in recent years, and the general trend in the consumer consumption has been the influence of ecological values on purchasing behavior. The background for this study comes from the need for information on how the purchase intention is formed in the case of ecological dog food. Another reason is the previous results on the differences in the purchasing behavior of dog owners, depending on whether they buy products for themselves or their dog.

The empirical part of the study was conducted as a quantitative study for which data was collected from dog owners in the fall of 2021 with a questionnaire. Regression analysis was used as the research method to find out which factors influence the formation of the purchase intention. Based on the results of the study, the purchase intentions of dog owners are influenced by the attitude towards the purchase of an ecological product, subjective norms and perceived control. The effectiveness of behavioral control is moderated by the relationship between the dog and the owner. In addition, biospheric values were found to affect attitude positively.

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## 1. INTRODUCTION

Recently, a certain consumer group has become very substantial in Finland – pet owners, and especially dog owners. The most recent statistics on pet ownership in Finland are from 2016. That year nearly every third household (31%) had a pet, from which most of were dogs. The number of households with a dog was 509 000, and there were approximately 700 000 dogs. From 2012 to 2016, the number of dogs has grown around 11%. (Official Statistics of Finland, 2020) Currently an interesting phenomenon has happened in this consumer group due to the Covid-19 pandemic. Due to people spending more time at home because of the pandemic, getting a dog has become even more popular. According to The Finnish Kennel Club, which is the national expert organisation and supervisor in the canine sector, 48 895 dogs were registered during 2020, which represents an 8,3% growth in the number of registered dogs compared to the previous year. (The Finnish Kennel Club, 2021)

As pets have become a part of many households, the amount of money spend on pets has grown throughout the years in as well. In 2016, a Finnish pet owner spent approximately EUR 1000 on pet supplies, services and buying a new pet. Between 2012-2016, the expenditures had grown by a total of EUR 330. Of the expenditure, the largest share used has been on pet food, around EUR 400. (Official Statistics of Finland, 2020) Even though this does not define the amount spend on dogs specifically, it forms an indicative estimate of the spending, since dogs form the biggest group of all pets. The statistics clearly show that pet related consumption is a significant theme and thus requires more focus in consumer behavior studies, as does understanding pet owners as consumers.

Along with this interesting theme in pet related consumption, another important phenomenon in consumer behavior is worth investigating. Concerning consumer behavior in general, sustainability has been a prominent phenomenon for a while already. In consumer studies over the past decades, surveys, reports and academic studies have clearly highlighted a group of consumers who are concerned about environmental and social issues (Shaw, Grehan, Shiu, Hassan, & Thomson, 2005). The emergence is resulting from the public being more aware of the ethical issues that relate to economic activities (Akenji, 2014). The



concern for environment is very prominent in Europe, where nearly all consumers find it important to protect the environment and a large majority thinks they can have a positive impact themselves. (European Commission, 2017)

However, even though people say they care about environmental issues and have positive attitudes towards sustainable products, they actually rarely make purchase decisions based on environmental values. (Carrington, Neville, & Whitwell, 2010) In the literature, this gap between what people say and how they act is referred as the attitude-behavior gap (Carrigan & Attalla, 2001). In Europe, approximately one third has purchased local products, but only 19% have bought environmentally labelled products. Even though most people think they can impact to environmental issues themselves, they still find that for solving environmental issues, the most effective procedures would be technological solutions and heavier fines for non-compliance with environmental legislation. (European Commission, 2017)

Despite of environmental values being not the most important criterion in purchasing decision, the environmental consciousness of consumers has led to companies creating marketing strategies that specifically promote sustainable credentials of products, brands or the companies (Carrington et al., 2010). It seems that sustainability has become important for business development. What could impact this change is, that consumers do pay attention to sustainability at some level, even though it would not be their main decision-making criterion. Consumers expect companies to act ethically, and unethical behavior can impact negatively on consumers' brand consideration and brand choice (Becker-Olsen, Cudmore, & Hill, 2006; Dutta & Pullig, 2011). Hence, companies could be motivated to focus on and promote sustainability to prevent that their business would not be perceived as unethical by consumers.

The focus on sustainable business is visible also in the case of Finnish dog commodities industry. New brands, especially dog food brands, which promote sustainability as one of the core credentials of the product, have entered the markets. Examples of these new sustainable companies are Dagsmark Petfood, Alvar Pet and Yora. Dagsmark Petfood is a

Finnish pet food manufacturer, who says to “change pets’ eating habits one cup at a time. We offer your pets sustainably produced, tasty and domestic, local food”. According to the company, sustainability is a core guiding factor in their business, and product ingredients are chosen based on their quality and purity, while being local. (Dagsmark Petfood, 2021) Alvar Pet is a recently established Finnish start-up, which aims to reduce the ecological pawprint of dogs. Their slogan is “Food for the conscious pup.” All products are made from Nordic ingredients and the goal of the company is to achieve carbon neutrality. (Alvar Pet, 2021) Yora is one of the most extreme examples. They claim to be the most ethical and sustainable pet food globally with products that use insect protein instead of traditional sources of protein for dogs, such as poultry or beef. (Yora, 2021)

### ***1.1. Preliminary literature review***

In the previous research about intentions to purchase sustainable products, organic food products have been a widely used context. (for example, see Tarkiainen & Sundqvist, 2005; Zhou, Thøgersen, Ruan, & Huang, 2013; Vassallo, Scalvedi, & Saba, 2016) Recently, many have also researched the intentions to purchase sustainable clothing and fashion (McNeill & Venter, 2019; Lee & Huang, 2020). A cognitive approach has been one of the most applied when studying intentions to purchase sustainable products. From that viewpoint, the most popular theory used to study the phenomenon is the Theory of Planned Behaviour (TPB) by Ajzen (1991) (Janssen & Joëlle Vanhamme, 2015). TPB explains a person’s behaviour with the intention to perform it. Intention to purchase is formed by individual’s attitudes (evaluation to do the behavior), subjective norms (perceived pressure for the behavior), and perceived behavioural control (whether the behavior is easy or difficult). (Ajzen, 1991) Because of the popularity of this theory, this literature review also focuses a lot on studies that apply TPB.

What can be noted from previous research is, that the factors affecting the intention vary based on what the studied target of consumption is. For example, in a study by Paul, Modi & Patel (2016) for Indian consumers’ green product purchasing, consumer attitude and perceived behavioural control predicted purchase intention, while subjective norms did not

predict it. Yet Tarkiainen & Sundqvist (2005) found out in their research, that subjective norms predicted Finnish consumers buying intentions for organic food indirectly through attitudes. A study about German consumers concluded that subjective norms had a major impact, whereas attitudes did not lead to intentions for everyday green purchasing (Moser, 2015). In some cases, all aspects of the TPB lead to intention (Yadav & Pathak, 2016). Another variable that can impact the results is the country the study is conducted in. In this case, the most common factor that differs in the results is the impact of subjective norm on intention, which indicates the influence of cultural differences (Hassan, Shiu, & Parry, 2016). It seems that the formation of intention cannot be generalized to different contexts, at least in different countries or product groups.

In the case of sustainable or organic food specifically, there is also not a straightforward answer to how intention to purchase is formed. One reason is that country and location specific factors affect on why intention to purchase is formed differently in different studies. In India, influence of others, price and availability of products have been found to influence purchase intention (Singh & Verma, 2017). Yet in Finland price and availability did not have an effect on purchase intention (Tarkiainen & Sundqvist, 2005). In the Nordic countries, the reasons behind buying sustainable food are similar (Niva, Mäkelä, Kahma, & Kjærnes 2014). It might be that in those locations of purchase where consumers do not have significant barriers to purchasing sustainable products, such as high price or poor availability, these factors do not influence the intention to buy, as Tarkiainen and Sundqvist (2005) have pondered.

As one might expect, environmental concerns are related to sustainable food (Zhu, Li, Geng, & Qi, 2013). However, Niva et al., (2014) propose, that buying sustainable food is more related to other eating practices that consumers have, such as eating healthy or having an interest in cooking. Other studies also confirm that health consciousness is a core motivation behind purchasing intentions (Singh & Verma, 2017; Testa, Sarti, & Frey, 2019). A previous positive experience about buying sustainable food products is an effective motivation to buy again (Vassallo et al., 2016). These findings indicate, that reasons for buying sustainable food products are actually often related to other motives rather than sustainability itself.

The formation of intention to buy sustainable food is affected by consumers' own personal values. Self-transcendent people, those who are benevolent and universalistic, have more intentions compared to those who are not (Zhou et al., 2013). Traditional values, such as being humble, have been linked to intentions towards purchasing sustainable products (Vermeir & Verbeke, 2006). Beyond practical issues, sustainable consumption is also a question of individual and social morality, which makes it even more complex for the individual (Moisander, 2007). Barbarossa and Pelsmacker (2016) argue, that consumers who purchase eco-friendly products have more altruistic motives in purchasing compared to non-green consumers, who have more egocentric motives. Purchasing green products also offers a motive to enhance status with better reputation (Griskevicius, Tybur & Van den Bergh, 2010). Motivations behind the intention to purchase sustainable food are clearly deeper than just having an interest towards sustainable products. The formation of intention involves value issues, moral questions and lifestyle habits.

There are some findings, that buying behavior is influenced by socio-demographic factors. Consumers in the age group of 31-40 buy more organic food, and high education level and higher income level impact to buying more organic food products (Singh & Verma, 2017). More interestingly, social contexts are important source of motivation. As Zollo (2020) argues, ethical consumers persuade and influence each other, which builds intention to purchase. This is supported with Tarkiainen's and Sundqvist's (2005) findings, who found out that person's attitudes towards buying organic food are influenced by the attitudes of other people. So even though intention is related with personal values, peer groups still impact on attitudes and motivation.

Intentions to buy sustainable dog food specifically have not been studied previously, but according to Tesfom and Birch (2010), in general the buying decision for dog food differs compared to when dog owners buy food for themselves. Results from their study indicate, that dog owners are less price sensitive, more brand loyal and focus more on healthiness when buying dog food than when buying food for themselves. It is noteworthy, that the nature of the relationship between the dog and its owner drives the way dog owners choose

to buy dog food (Boya, Dotson, & Hyatt, 2015). Some consumption habits for personal buying can also be similar when buying for the dog, depending on the dog-owner relationship. For example, excessive buying habits for self tend to be transferred when purchasing for the dog when there are strong feelings of attachment to the dog (Ridgway, Kukar-Kinney, Monroe & Chamberlin, 2008). Yet when purchasing dog food, the most important criterion generally for choosing what to purchase is the health and quality of the food. (Boya et al., 2015).

Sustainable consumption from an individual's perspective is challenging, and reasons for not purchasing a sustainable product are multidimensional. Even though a consumer has motives to purchase sustainable products, understanding the environmental information of a product requires careful analysis, which is often not a realistic expectation. It is also challenging to understand, what are the true environmental impacts of consumption and all the related interrelations. (Moisander, 2007) Studies about sustainable consumption applying a cognitive approach face generally some critique about the assumption that consumer purchasing behaviour would even be a cognitive process. Intention does not necessary lead to actual purchasing, because people are not always aware of the reasons of their behaviour. (Janssen & Joëlle Vanhamme, 2015)

Carrington, Neville, & Whitwell (2014) highlight additional obstacles that consumers face in sustainable consumption. They argue that consumers can have alternative personal values stronger than environmental values or unwillingness to sacrifice or to search for environmental information. Consumers can be distracted by the environment when shopping is spontaneous, or they might have existing consumption habits which are not aligned with sustainable consumption. An evolutionary psychology aspect argues that the attitude-behavior gap is more of a social dilemma, where consumers choose self-interest over a maximized group gain for climate change (Gupta & Ogden, 2009).

Sustainability is a rising theme today also in the dog food market, but dog owners' attitudes towards sustainable products and intentions to buy sustainable dog food have not been

studied previously. Therefore, there is a need to understand how this consumer group feels towards sustainable products, whether they have intentions to purchase these sustainably marketed products and how the possible intention is formed. Previous research about buying behavior for dog products proposes an interesting question on whether the intentions to buy sustainable dog food also differ compared to intentions to buy sustainable human food. Understanding the sustainable purchasing intentions particularly in the dog food context is a relevant research topic, as dog owners have become a substantial consumer group in Finland and from owning a dog, the consumption of dog food generates the biggest environmental impacts. The relevancy of this research subject is even more prominent now, when Covid-19 has made people keener on getting a dog. Results from purchasing intentions help in one angle to understand the overall buying behavior process of sustainable dog food.

## ***1.2. Research questions***

As described in the previous chapter, the aim of this study is to understand the formation of dog owners' intentions to purchase sustainable dog food. To guide this research and to condense the objective of it, the main research question is formed as follows:

*RQ: Which factors influence dog owners' intentions to purchase sustainable dog food?*

To support the main research question and to gain a good understanding of the studied phenomenon, three sub-questions are formed based on theoretical findings. The first question is formed in order to identify, what are the main background factors behind intention:

*SQ1: What are the attitudinal drivers of intentions to buy sustainable dogfood?*

The second question bases on previous findings related to the role of personal values, which support the role of attitudinal drivers in the formation of intention. These findings are introduced later on in the theoretical chapters of this research. Second sub-question is:

*SQ2: How do consumers' personal values influence intentions to buy sustainable dogfood?*

The last question incorporates the role of dog-owner relationship to the formation of intention. The aim of the questions is to identify what the possible role of the relationship is. The reasoning behind this connection is also introduced later on. Last sub-question is:

*SQ3: How does dog-owner relationship shape the formation of intention to buy sustainable dogfood?*

### **1.3. Delimitations**

In terms of sustainable products, this study is limited to research food in particular. Because this thesis compares purchase intentions between personal purchases and products for the owners' pets, it is clearer to limit the product to food, which necessary to buy in both situations. Food is also an easily understandable product category. In addition, as mentioned previously in the introduction, food generates the biggest amount of emission in owning a dog, which makes it relevant in terms of sustainability.

This study is conducted from a consumer's viewpoint. The data is collected from Finnish dog owners, because the aim is to find out how the intentions are formed amongst Finnish dog owners. Broader explanation on why this study is relevant to conduct in Finland is presented previously. Because the focus is purchasing intentions, the respondents are limited to those, who have the main responsibility of doing purchases for their dog. This rules out

other family members, who are not responsible for purchasing. Other delimitations are not included concerning the respondents or their dogs, because this study aims to gather a good overview of Finnish dog owners.

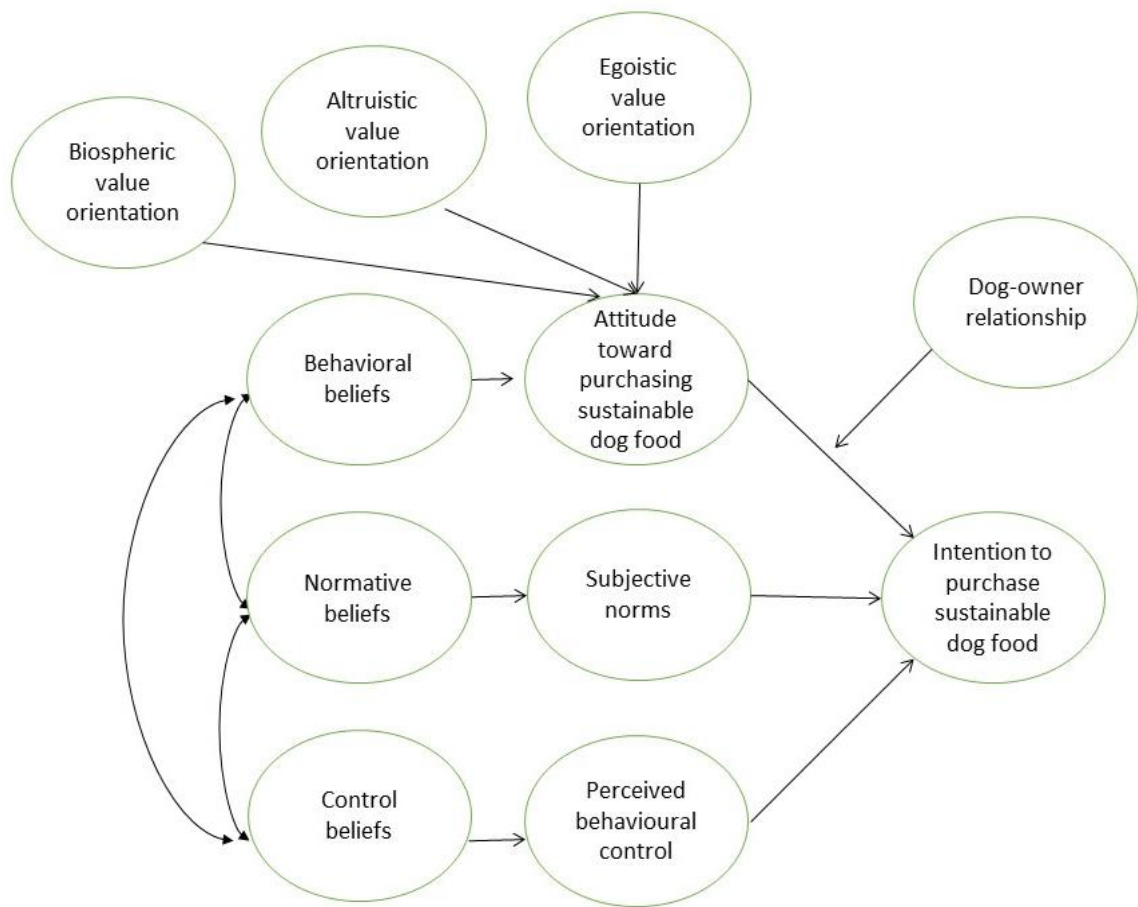
The focus of this study is limited to intentions to purchase sustainable food. It has not been studied previously whether Finnish pet owners have intentions to purchase sustainable dog food. Before trying to understand actual purchasing behavior, it is important to understand the intentions behind it to get a more wholesome picture of consumer behavior. Information about intentions and how they are formed gives companies and marketing professionals in the dog commodities industry valuable insight for sales and marketing of sustainable dog food. In addition, it gives overall better understanding about consumer behavior of pet owners. This research will also reveal if there exists an attitude-intention gap amongst pet owners in terms of sustainable consumption.

This study will not focus on actual purchasing behavior for following reasons. First of all, this thesis will rely on questionnaire data rather than actual data from purchasing. Questionnaires cannot give real data about purchasing behavior itself, only about respondents' perceptions of it, which is why researching purchasing behavior would not give correct results and therefore it would not be meaningful to study it. Also, as Van Doorn and Verhoef (2015) explain, the effects of barriers in actual purchasing are difficult to measure. It would be unrealistic for this thesis project to concur those obstacles due to available resources. After the results for purchase intentions, future research can study the actual purchasing behavior.

#### ***1.4. Theoretical framework***

The theoretical framework of the study is presented in the figure 1 below to describe the linkage of the theory to the studied topic.





*Figure 1: Theoretical framework of the study*

According to the Theory of Planned behavior by Ajzen (1991), the intention to purchase or to not purchase sustainable food is formed by different factors. The theory suggests that the intention about the behavior will then affect the actual behavior (Ajzen, 1991).

### **1.5. Definitions**

**Sustainability** is a term originating from the concept of sustainable development. Sustainable development was first officially introduced by United Nations in the 1987 Brundtland Commission Report. According to this definition, sustainable development is

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development, 1987) Based on that definition, sustainability is a term describing a certain subject to follow sustainable development.

**Sustainable dog food** is left in this research to be defined by the reader and those answering the survey themselves. No limitations were wanted to be done by the researcher to define sustainable dog food in terms of ingredients, packaging or other factors, as that makes no difference for the findings of this research. There is no relevancy here in terms of what is sustainable dog food factually – what matters is only how the reader and the sample group themselves define sustainable dog food.

**Intention** to behave a certain way consists of the motivational factors that lie behind performing the behavior. Intention is believed to provide an indicator of how much effort people are willing to make in order to achieve the behavior. With the growth of intention grows the likelihood of performing the behavior. This definition is only applicable for behavior that is under volitional control. (Ajzen, 1991, 181)

## ***1.6. Research methodology***

The research is conducted using a qualitative method. The essence of quantitative research is to understand how different variables are related to each other, as Punch (2003, 11) describes. It is useful for understanding and predicting behavior and can also be used to find empirical support for a theory (Teo, 2013, 6). This study shares the same goal, which is why a quantitative approach was a suitable method.

To collect the data, an anonymous online survey was distributed to the target group. The goal was to reach a large amount of people to ask their opinions and reasonings, and a survey fits well for this purpose. The context of the study is Finnish dog owners who were contacted

in a Facebook group dedicated for dog food and feeding dogs. The complete explanation of the research methods and reasoning for them can be found in section 3 of this study.

### ***1.7. Structure of the study***

This research is divided into the theoretical and empiric part. It starts with the theoretical part, which draws together the previous academic research and ends up in creating the theoretical framework. First, the introduction starts with the preliminary literature review and research context in order to define the research gap which this study will aim to answer. Based on this the research questions are formed.

Next in line is the theoretical part, which starts with consumption patterns when buying for a dog versus buying for self. This is followed by sustainable consumption behaviour. These aim to create an understanding about the previous findings about the subject in hand. After that the main theory, the theory of planned behavior, is presented. The TPB is then completed with other theoretical findings, which aim to answer the research questions. This section wraps up with hypotheses that are created based on the theory.

Third chapter of this research is the empirical part, where the previously formed hypotheses are tested. It starts with explaining the research methods, data collection and the context of the study. After that the chosen research methods are used to test the hypotheses. The empirical part then moves on to analysing the results and drawing conclusions based on them. A critical analysis of validity and reliability is included in this section. The end of the empirical part consists of discussion of the results and giving further research suggestions based on this research.

## **2. EXPLAINING INTENTIONS TO BUY SUSTAINABLE DOG FOOD**

This chapter presents the created theoretical framework of this research. It aims to create understanding of the chosen theory and also justify why it was decided to add the chosen factors to support the theory. The beginning opens up the main findings about buying behaviour of dog owners in the case of buying for their dog. After that sustainable consumption patterns are discussed. The chapter moves then on to the Theory of Planned behavior by Ajzen (1991) and to extending the theory.

### ***2.1. Consumption patterns when buying for a dog versus buying for self***

Especially in the case of food, pet owners have different buying criteria when buying for themselves compared to buying for their dog. Tesfom & Birch (2010) found out in their study, that when bought for the dog, the owners emphasize healthiness more than when they buy food for themselves. They are also more brand loyal in dog food. What comes to price, dog owners are more sensitive to it in their own food purchases than in dog food. This study did not investigate the dog-owner relationship as a moderator, which was pointed out by Boya et al., (2015). They examined consumption pattern differences by including the relationship, which showed that the differences vary between different segments, which were identified on the nature of the dog-owner relationship. The general findings are aligned with Tesfom & Birch's (2010) study, such as that owners put more emphasis on healthiness and are more brand loyal in dog food than in their own food. When buying dog food, the recommendations of veterinarians were followed more than the ones of owners' doctors.

The relationship impacts on where the differences originate between buying for self, versus buying for dog. Only those owners, "dog people", who strongly humanize their dogs and are very attached to them, are less price conscious for dog food than their own food, which differs from other type of dog owners. On the other hand, those owners who see their dog primarily as a pet rather than an equal family member, "pet owners" are the only ones who are less brand loyal in dog food than in their own food. These types of owners also rate

healthiness more important when purchasing their own food than dog food. They are also the ones who are more likely to follow recommendation of health care professionals when buying for themselves than for their dog. (Boya et al., 2015) Similar findings of relationship impacting consumption patterns are also found in the context of pet related services. According to Chen, Hung, & Peng (2012), when pets are treated as childlike family members, owners rate superior quality and epistemic value as important criteria.

## **2.2. *Sustainable consumption behavior***

Sustainable consumption behavior can be approached from many different angles. In the existing literature, researchers from different academic fields have been interested in solving the attitude-behavior gap. Hence the explanations vary depending on what the point of view has been chosen for the research. One interesting proposition is by Janssen & Vanhamme (2015), who suggest that there are five main fields that can explain sustainable consumption. These fields, or “theoretical lenses” as they call them, are the consumer decision-making lens, clinical psychology lens, the evolutionary psychology/biology lens and the social psychology lens.

The consumer decision-making lens presents the existing research, which is from the consumer behavior viewpoint. Previous studies that address the attitude-behavior gap mainly use the theory of planned behavior by Ajzen (1991) as a guideline. The theory of planned behavior argues that intentions guide peoples’ behavior, and it has been proven to give good insights about what drives people to sustainable consumption. One might have a positive attitude towards sustainable consumption, but if the other factors that create the intention are not aligned with the intention, it leads to the attitude-behavior gap. However, this viewpoint faces criticism about the fact that most of the time people do not necessarily know why they behave in a certain way. This is why the other four lenses try to give other explanations for the problem. (Janssen & Joëlle Vanhamme, 2015)

The clinical psychology lens argues, that people tend to view the world as a positive place, but the corporate social responsibility (CSR) programs or product attributes shatter this image by evoking negative feelings through information about CSR issues. As a coping mechanism, people do not want to face these negative feelings, which is why they might deny the issues. This can lead to not behaving in a sustainable way even though one might see CSR issues as important. The evolutionary psychology/biology lens approaches the issue with the idea that for consumers, choosing a sustainable option can be a social dilemma of personal and community interests. Choosing a sustainable product benefits others with the cost of the individual, and some people perceive a self-sacrifice in these situations. Sustainable consumption is referred to altruistic behavior and the feeling of fairness. (Janssen & Joëlle Vanhamme, 2015)

The social psychology lens argues that the attitude-behavior-gap exists because of a bystander apathy phenomenon. Peoples' willingness to help declines if there are other passive people around them. In the sustainable consumption context this would mean that people rely on other people behaving in a sustainable way so that they do not have to themselves. The conditions for a strong bystander apathy are favourable, because buying sustainable products are not often perceived as a part of an actual emergency, and they are anonymous to others. Lastly, the economic lens addresses the outcomes of what choosing a sustainable product brings for the consumer. The economic psychology presents, that because of the uncertainty that future brings, people do not value future as much as they value the present. When people evaluate whether they should choose a higher priced sustainable option or their regular cheaper option, they also evaluate the current pros and cons and the uncertain future pros and cons. (Janssen & Joëlle Vanhamme, 2015)

All of these theoretical lenses provide interesting viewpoints to sustainable consumption. Yet the point of view for this thesis is to examine what kind of attitudes dog owners in general hold towards buying sustainable food, and also whether they have intentions to purchase those products. Therefore, the consumer behavior viewpoint gives needed answers for the research problem. As Janssen & Vanhamme (2015) mention, the consumer decision-making lens "can shed light only on the tip of the iceberg", it still gives valuable insight to

sustainable consumption behavior. In this case the tip of the iceberg needs to be revealed first, and future studies from different viewpoints can be done to give a more comprehensive understanding of the subject.

The most used theoretical frameworks for predicting human behavior in the literature are the theory of reasoned action (TRA) by Ajzen & Fishbein in 1980 and its next extension, which is the theory of planned behaviour (TPB) by Ajzen (1991). Overall, both of these theories have been used widely in studies that predict behavior. They have been applied a lot in sustainable buying behavior studies particularly. (Vassallo et al., 2016) There is also clear proof that TPB is an effective theory to predict consumers intentions in sustainable behavior (Man, 1998). Because of the suitability of this framework in predicting human behavior and especially sustainable buying behavior, as well as the proven effectiveness, it is reasonable to apply this framework for this study. Of course, it is important to notify, that human behavior is a very complex phenomenon, and it can never be fully explained or predicted (Ajzen 1991, 179-181).

### ***2.3. Theory of Planned Behavior***

Theory of planned behavior investigates an individual's intentions to perform a certain behavior. The theory argues that an intention to do something predicts the actual behavior. An intention captures motivational factors of a person, which tells how much effort he/she is willing to make to perform the given behavior. The theory assumes, that the strength of the intentions maps out the likelihood of performing the behavior. The stronger the intention, the more likely it leads to behavior. (Ajzen, 1991, 181) Figure 2 presents the theory and the connections of its components. This assumption has created quite a lot of criticism, which will be discussed in later parts of this chapter.

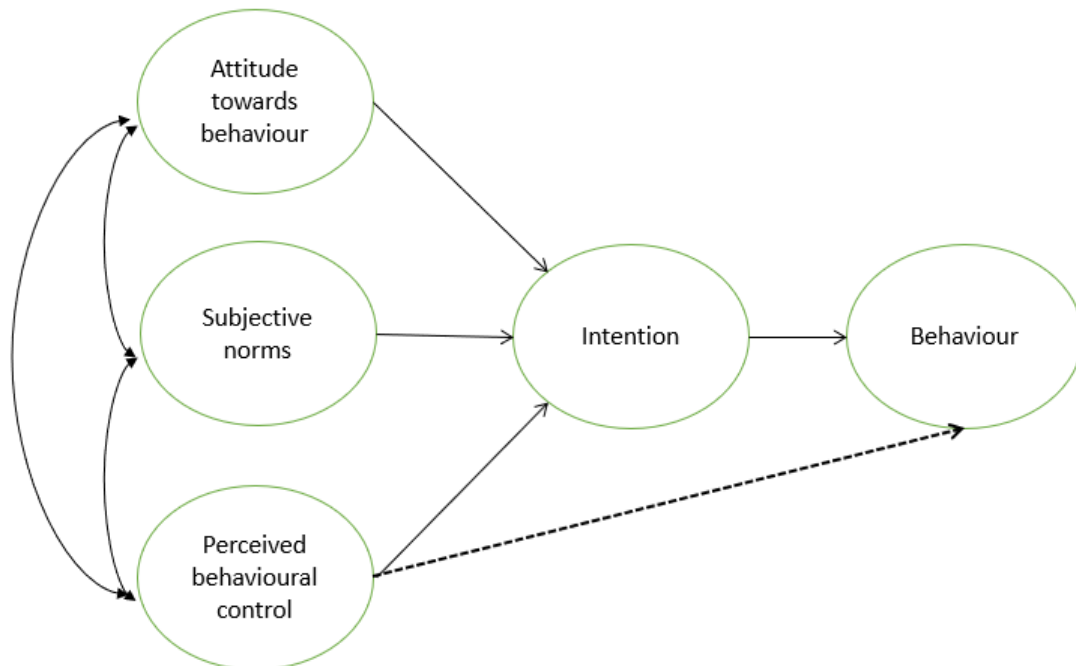
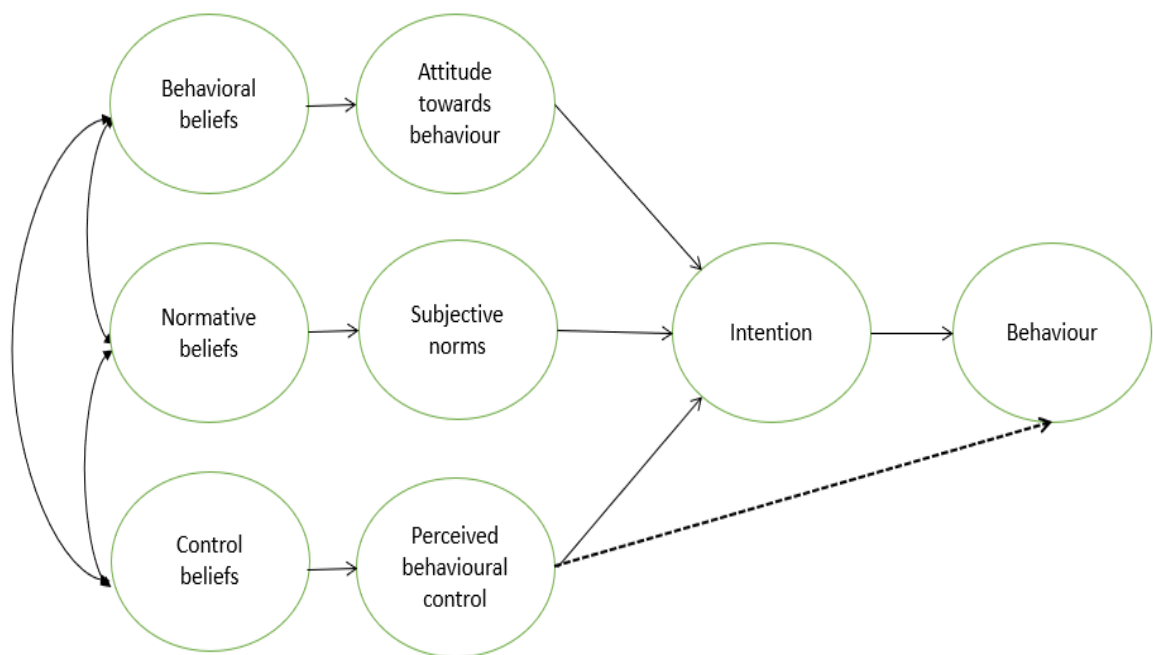


Figure 2: Theory of Planned Behavior, (Ajzen, 1991)

Intentions are formed by three factors: attitude towards the behavior, subjective norms and perceived behavior control. All of these will affect on how strong the intention will be. The attitude factor means how a person generally feels about the behavior. It explains whether a person has positive or negative attitudes towards the behavior - whether behaving is seen as favourable or unfavourable. Subjective norm includes a social aspect to the intention. According to the theory, intention is affected by social pressure. This means the level of how much a person perceives social pressure to perform the behavior or vice versa, not perform the behavior. The last factor affecting intention is perceived behavior control. This refers to the circumstances of the behavior. The theory suggests, that the perceived level of easiness to perform the behavior affects to the intention. If the behavior is perceived as difficult, the intention to perform it is not as strong as it is when the behavior is seen easy. Aspects that affect the control are for example time, money or skills (Ajzen, 1991, 182). Past positive or negative experiences about the behavior are assumed to show in behavioral control, as well as are anticipated impediments and obstacles.



What affects all of these three factors are beliefs behind them, and the beliefs are therefore the ones that actually determine the intention. Behavioral beliefs affect the attitude towards the behavior, normative beliefs influence subjective norms and lastly control beliefs are the ones creating the behavioral control. (Ajzen, 1991, 189). These beliefs are portrayed in figure 3 below.



*Figure 3: The role of beliefs in Theory of Planned Behavior (Ajzen, 1991, 189)*

The conclusion of the Theory of Planned Behavior is that the more positive attitudes a person has about the behavior and the more favourable the perceived social pressure is towards doing the behavior combined with the more control a person has over the behavior, the stronger the intention is to perform the behavior. (Ajzen, 1991, 188)

A crucial factor for this theory lies in the circumstances. For intentions to predict a behavior, the behavior in question needs to be under volitional control. As the name of the theory implies, a person needs to plan the behavior. If the behavior is involuntary due to circumstances, the arguments of this theory are not valid and, in that case, intentions do not act as predictors. (Ajzen, 1991, 181) This one of the reasons why this theory is examined for

studying the intentions to purchase sustainable food in this thesis. The focus is not on spontaneous choices when buying the products, it is on the conscious decisions on whether to purchase a sustainable option or not, and what are the reasons behind these conscious decisions. As Ajzen has explained in his theory, The TPB should be used in behaviours like the one in question. As the literature review expressed, there are other theories and frameworks used to examine sustainable buying behavior and intentions, but here it is chosen to use the TPB because of the volitional control aspect of the behaviour.

### *2.3.1 Behavioral beliefs and attitudes towards the behaviour*

Ajzen (1991, 191) explains in his model, that attitudes form from beliefs that people have about the object in question. These beliefs are generated with associating the object with attributes. The attributes can be for example other objects, characteristics or events. As people are planning to perform a behaviour, they have some kind of beliefs on what does it mean to do the behavior. This refers expectations that people have of the outcome of the behavior or some other attributes, such as cost of the behavior. Ajzen (1991, 191) In the context of buying sustainable food, a favourable outcome could be that the purchase of these products helps to save the environment. An unfavourable outcome could be that buying these products would lead to loss of money, if a person believes these kinds of products are too expensive.

The evaluation that people make, will lead to either a positive or negative view of the behavior, which is the attitude towards the behavior. This is an automatic and simultaneous attitude. People tend to favour those behaviours they view positively and believe will have good consequences, and in turn avoid the behaviours that they have a negative attitude towards and believe will lead to unwanted consequences. (Ajzen, 1991, 191) This theory focuses on beliefs, not facts, so the beliefs people have, do not need to be accurate or realistic. They only tell how people view the behavior from their perspective, which gives understanding about the background factors of behavior.

**H1: Attitudes towards purchasing sustainable pet food products positively affect the intention to purchase sustainable pet food products.**

### *2.3.2 Normative beliefs and subjective norms*

Normative beliefs refer to those perceptions that people have of other people viewing their behavior. When evaluating the behavior, people also evaluate how their peer group or other important people to them think about them performing the behavior. It can also refer to how they feel is the social normative pressure. In other words, people evaluate how likely other people will or will not approve their behavior. Subjective norms are then the concluding perceptions of doing the behavior with normative beliefs included (Ajzen 1991, 195-196).

In the context of this study, normative beliefs could be that a person feels social pressure to purchase sustainable food products. On the other hand, it could be that a person believes that their peer group thinks it is foolish to purchase sustainable food products. However, thinking about peer group's opinion or feeling social normative pressure might not apply to all people. According to Ajzen (1991, 179-211), intention can be formed without some of the determinants of the theory, such as subjective norm in this case.

**H2: Subjective norms positively affect the intention to purchase sustainable pet food products.**

### *2.3.3 Control beliefs and perceived behavioral control*

Control beliefs refers to those beliefs that people hold about how easy or difficult it is to perform the behavior. They are perceptions of factors that can either enable or impede the behavior. People can gather these beliefs from different experiences and situations. It can be

past experiences of performing the same behavior that leads to certain beliefs. Or it might not even be the persons' own experiences, but it could be experiences of friends or other people that lead to these beliefs. It can be almost any kind of information that leads to the belief of easiness or difficultness to perform the behavior. (Ajzen 1991, 196-197).

The perceived behavioral control is developed from these beliefs. It means, how much a person thinks she/he can affect on doing the behavior itself by the resources believed to have and the obstacles believed to face. (Ajzen 1991, 196-197). In this case, a person might feel for example like they cannot purchase sustainable food products because they believe based on their past experience that it is difficult to find them. Perceived behavioral control is a critical part of the theory, and it is the aspect that makes it different from the TRA (Ajzen, 1991, 183)

**H3: Perceived behavioral control positively affects the intention to purchase sustainable pet food products.**

#### *2.3.4 From intentions to behavior*

TPB assumes that when the behavior is under volitional control, intentions directly lead to behavior. The stronger the intention to behave, the more likely people will behave as they intend to. According to the theory, intentions capture motivational factors, because they reflect on how hard people are willing to try to behave. (Ajzen, 1991, 181) TPB has been applied widely in studies predicting sustainable buying behavior and this assumption has faced a lot of criticism. In fact, the sustainable consumer behavior literature has a clear consensus about there existing an intention-behavior-gap: in most cases intentions do not lead to behavior (e.g., Carrington et al., 2010; Bray, Johns & Kilburn, 2011).

So even though TPB assumes intentions to lead directly to behavior, the academic literature has proven this to be false in most cases. For this reason, it seems important to clarify, that

this particular study does not assume that intentions will lead to behavior. This study aims to investigate what kind of intentions dog owners have about purchasing sustainable dog food and how these intentions are formed. Future studies can complement the findings of this research by investigating how dog owners actually behave in terms of purchasing dog food, and what are the explaining factors of the possible intention-behavior-gap.

## ***2.4 Extending the theory***

Ajzen (1991, 191) has left the theory open for discussion and additional predictors, reminding that TPB is also itself an extension of the previous version TRA. Therefore, in order to explain sustainable purchase intentions better, it has been common for researchers to have added some extensions to TPB or to have modified it. Some researchers have with other methods identified factors that relate to the behavioral intentions of TPB. Even though some of the factors are beliefs that consumers have about a sustainable product, the beliefs have a part in the formation of attitudes towards purchasing intentions. (Janssen & Joëlle Vanhamme, 2015)

### ***2.4.1 Role of personal values***

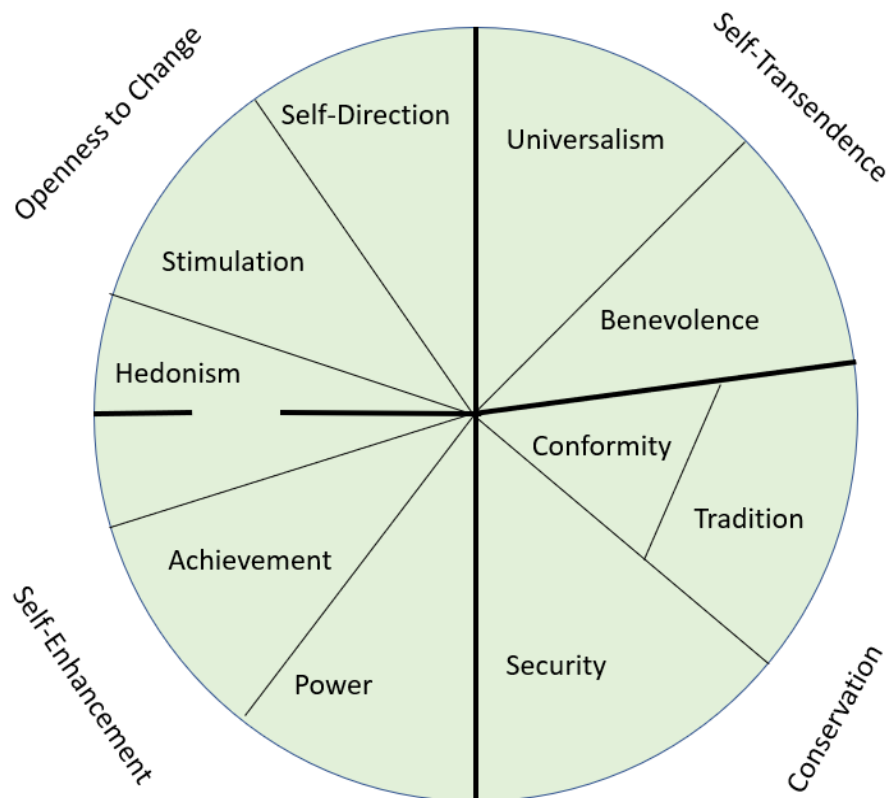
Incorporating individual's values has been found to be impactful when studying sustainable consumption. It is clearly proven, that having environmental values or concerns is linked to having environmental attitudes (Schultz, Gouveial, Cameron, Tankha, Schmutz & Franck 2005). Previous research for example shows, that a positive attitude towards organic food is linked to universalistic values and concerns about the environment (Olander & Thøgersen, 2002; Thøgersen & Zhou, 2012). Zhou et al., (2013) added human values in their model and found out that strong self-transcendence values of a consumer lead to stronger intentions compared to consumers with weak ones. Their research is consistent with other studies, which state that self-transcendence values guide specifically environmental buying behavior in terms of organic food. TPB also recognizes the importance of values by mentioning that when people form an attitude towards a behavior, their values have an impact on what is the behavioral outcome (Hill, Fishbein & Ajzen, 1977). Schultz et al., (2005) suggest, that

the way we perceive environmental problems, how they affect us and which solutions seem reasonable to us, is guided by our personal values and culture.

Schwartz (2012) has developed a widely applied values theory, which recognizes ten universal values. Research shows these values are most likely universal because they are based on the general requirements of human existence, with which they help humans to cope. The ten different values are:

1. stimulation (STI)
2. self-direction (SDI)
3. universalism (UNI)
4. benevolence (BEN)
5. achievement (ACH)
6. power (POW)
7. security (SEC)
8. conformity (CON)
9. hedonism
10. tradition (TRA)

In the values theory, Schwartz also describes the relations of those values in a circle. According to the theory, each value has conflict and congruity relations with the other value, which in turn create two different dimensions. These relations and dimensions are portrayed in figure 4 below. (Schwartz, 2012)



*Figure 4. Theoretical model of relations among ten motivational types of value. (Schwartz, 2012)*

One dimension explains the contrast, which occurs when the values that represent “openness to change” conflict with values of “conservation”. “Openness to change includes values that emphasize independence, whereas conservational values are related to emphasizing order and preservation of the past. The other dimension explains the contrast of “self-enhancement” conflicting with “self-transcendence”. Values in self-enhancement include personal interests and power over others, and “self-transcendence” values in turn are for example caring for common well-being. (Schwartz, 2012)

Past research has identified that environmental consumer behavior is linked to the dimension of self-transcendence and self-enhancement. (Schultz et al., 2005; de Groot & Steg, 2007). Some researchers use the concept of value orientations when referring to values in these

dimensions. Egoistic value orientation includes values that Schwartz describes as self-enhancement. Self-transcendence values include altruistic and biospheric value orientations, where altruistic values refer to benevolence values and biospheric to universalistic values. According to previous research, those people with egoistic value orientation behave environmentally only when they themselves benefit from it and the perceived personal cost is outweighed by the personal benefits. Those people with altruistic or biospheric value orientation behave environmentally when they believe it is beneficial for common well-being and for the environment. (de Groot & Steg, 2007)

As these findings show, values guide behavior. As Ajzen (1991, 189) explains, “behavior is a function of salient information, or beliefs, relevant to the behavior”. People behave based on what they believe are the consequences of their behavior. In TPB, this links values as a contributing factor to attitudes, because attitudes develop from beliefs held about the object of the attitude (Ajzen, 1991, 191). As mentioned previously, values in turn impact on what kind of attitudes people hold towards their behavior. In the context of purchasing dog food, this study argues that biospheric, altruistic and egoistic value orientations affect positively on the attitude towards purchasing sustainable dog food. Based on these findings, the next hypotheses are proposed:

**H4. Biospheric value orientation has a positive effect on the attitude towards purchasing sustainable dog food.**

**H5. Altruistic value orientation has a positive effect on the attitude towards purchasing sustainable dog food.**

**H6. Egoistic value orientation has a negative effect on the attitude towards purchasing sustainable dog food.**

#### *2.4.2 Companion animals and pet-owner relationship as a moderator*



As the focus group of this study is dog owners, it is meaningful to investigate the literature of owner-pet relationships and companion animals. Animals, and especially dogs, have been known to be pets and loved family members since the ancient times. Studies have shown that owning a pet not only improves physical health but also mental health. Dog-related consumption has increased over the years, which indicates that the bond between humans and their dogs has developed. The time and money spent on dogs increases due to people wanting to provide more high-quality life for their bellowed dogs. (Dotson & Hyatt, 2008)

Several researchers have explained the relationship between owners and their dogs. Not everyone experiences this special family member like bond with their dog, and there can be different reasons why people choose to own a pet. Hirschman (1994) saw pets as companions or possessions and argued there to be six different relationships based on what pet ownership brings to their owners. Holbrook, Day, Stephens, Holbrook, & Strazar (2001) approached the relationship from a consumption point of view, where pets provide opportunities to shared experiences trough consumption. These two different perspectives are represented in the tables 1 and 2 below. According to Hirschman's (1994) approach, having a pet can be derived from the owners aim to gain status or admiration, to seeing pets as family members. Holbrook et al (2001) see that sharing a life with a pet brings people psychological and medical benefits, which impacts pet related consumption patterns.

*Table 1: Six reasons for pet ownership (Hirschman, 1994)*

Number	Reason
1	animals as objects in the consumer's environment representing an extension of the owner
2	animals as ornaments wherein the animal is kept for its aesthetic value
3	animals as status symbols
4	animals as avocations, such as those individuals who exhibit or show their pets
5	animals as equipment whose use facilitates performance of other functions, such as the use of animals as protectors, guides, search and rescue animals, and therapy animals
6	animals as people, the most common reason, where the animal has the role of companion, friend, family member, sibling, or child

*Table 2: Opportunities from pet ownership (Holbrook et al., 2001)*

Number	Reason
1	the opportunity to appreciate nature and appreciate wildlife
2	the opportunity for inspiration and learning
3	the opportunity to be childlike and playful
4	the opportunity to be altruistic and nurturant
5	the opportunity for companionship, caring, comfort, and/or calmness
6	the opportunity to be a parent
7	the opportunity to strengthen bonds with other humans

Demographic factors give some explanation on how the pet-owner relationship is constructed. Women have in general a stronger companionship with their dog than men, and they are usually the main care givers. In addition, younger age and high education are linked to a strong companionship. The level of investment in dog ownership relates to the type of companionship. Owners who spend a lot of time with their dog and have had them for a long period experience a deeper companionship. Yet dog companionship is a complex phenomenon, and the background factors are not easily explainable. (Dotson & Hyatt, 2008)

The emotional attachment that is created with a pet can be seen in owners' consumption patterns. In fact, pet-related consumption is not only for the pet - it is also a way for the owner to construct an identity. Consumption builds one's identity both with social interactions and via the emotional attachment to the pet. (Jyrinki, 2012) Pet ownership can also create co-consumption of the pet and the owner, depending on the perceived

relationship. When the pet is an inseparable part of living, decisions are always made with taking the pet into consideration, even in situations that are not directly related to pet-related consumption. Such situations can be for example buying a new car or whom to marry. When the pet is treated like a very valued family member, the owner cares about the pet's own experiences, which affects pet-related consumption. In this situation the owner provides services to the pet and the service provider needs to consider both the owners and the pets experiences. Pets can even act as the service provider themselves in pet-related consumption. Pets provide experiences to the owner and might replace friends or commercial service providers. (Kylkilahti, Syrjälä, Autio, Kuismin & Autio, 2016)

When buying dog food, this relationship affects on the buying criteria. The more the dog is humanized and seen as a family member, the more owners emphasize the quality and the dog's own experience about the food. Those owners, who live their life on their dog's terms and see them as their best friends, put the most importance on nutrition, taste and freshness when buying good for their dog. These buying criteria are significantly more important to them than for other type of dog owners, who are not as emotionally attached to their dog. Those owners, who think of their dog mainly just as a pet rather than a childlike family member, put value on convenience in the shopping experience and money savings. (Boya et al., 2015) Brockman, Taylor & Brockman (2008) argue, that having a strong emotional bond with a pet leads to decisions that are more emotional instead of reasoned, at least in decisions about veterinary care.

As previous studies indicate, pet-owner relationship affects the consumption patterns in pet-related consumption and dog food. The more owners feel emotionally attached to their dog, the more they include the dog's experiences to their consumption decisions. In relation to this, emotion plays a role in decisions when there is strong attachment. In other words, the strength of the relationship impacts on the level of investment to the consumption: when there is a strong emotional bond between the owner and the dog, the owners believe that investing in dog food will lead to a better outcome for the dog and also for the owner itself. Those who do not experience such an emotional bond with their dog evaluate the dog related consumption differently. They believe that investing in dog food does not lead to as positive

of an outcome, instead they believe that emphasizing other attributes such as affordability and convenience in shopping experience leads to a better outcome. In theory of planned behavior this is linked to behavioral beliefs that form attitudes towards the behavior. People evaluate behaviors to have different positive or negative outcomes based on their beliefs about the behavior (Ajzen, 1991, 191).

One important observation also rises from this. Those owners with a strong dog-owner relationship think the behavioral outcomes more from their dogs' perspective, whereas other type of dog owners evaluate it more through their own preferences. The beliefs the owners have about purchasing dog food vary on how much they emphasize the dog's own experience versus their own personal experience. The previous studies have not specified sustainability in pet related consumption, which is why this study will try to answer, whether pet owner relationship also impacts on the intention to purchase sustainable products.

As clarified previously, the positive attitude towards purchasing sustainable dog food is based on personal values supporting environmental consumption, rather than sustainable dog food in itself being tasty and healthy for the dog. Therefore, this study argues that the attitude's impact on intention towards choosing an ecological option when purchasing dog food is affected by how strong the dog-owner relationship is. This indicates whether the outcome of purchasing dog food is viewed from the dog's perspective or the owner's own perspective. Those owners who have a strong emotional bond with their dog evaluate the dog food purchase from their dog's perspective, which is why they want to purchase the option they believe is the best from the dog's perspective, such as a product that is tasty and healthy for their dog. Even though they would have positive attitudes towards purchasing sustainable dog food, they choose not to follow them as the main buying criteria. This leads to a hypothesis being formed:

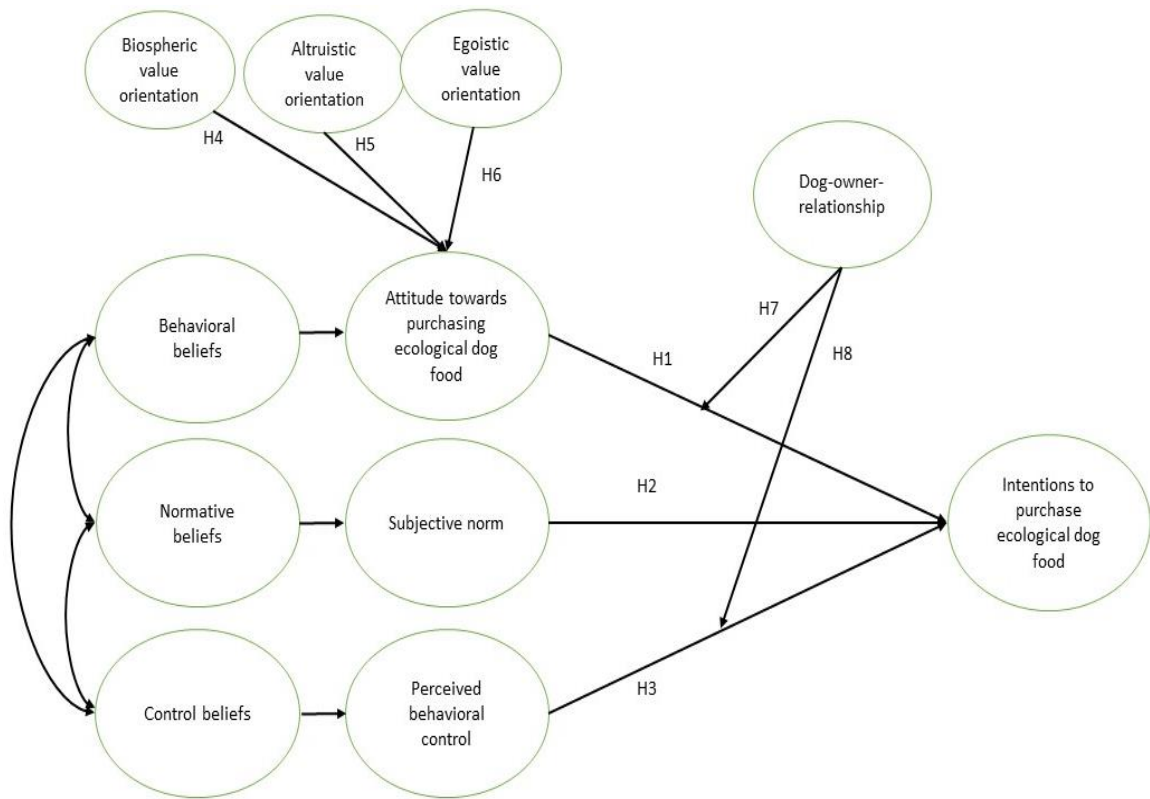
**H7: The positive relationship between attitude and intentions to buy sustainable food is stronger for consumers that have weak dog-owner -relationships (compared to consumers who have strong dog-owner -relationships).**

The dog-owner relationship has also another moderating effect in the formation of intention, which is linked to the impact of attitude towards intention. Ajzen (1991, 184) describes perceived behavioural control to be consisting of actual behavioral control, such as available resources, and perceived behavioral control, which reflects one's confidence in performing the behavior. The self-confidence aspect is in a key role in the formation of intention to purchase sustainable dog food. As explained previously, those owners who have a strong emotional bond with their dog do not emphasize sustainability as the main criteria when planning to buy dog food, even if they in general have positive attitudes towards choosing an sustainable option. This indicates that they might not know whether they can choose a sustainable option that would at the same time be the best option for their dog. The perceived behavioral control in terms of self-confidence becomes an important factor in the formation of intention, rather than attitude.

Vice versa, the self-confidence can be seen amongst those dog owners who have positive attitudes towards purchasing sustainable dog food and also intent on choosing them. These dog owners emphasize the impact of attitude in their intention formation, which indicates that they have high self-confidence. For them, perceived behavioral control does not affect as strongly on intention formation. These observations lead to the next hypothesis:

**H8: The positive relationship between perceived behavioral control and intentions to buy sustainable food is stronger for consumers that have strong dog-owner -relationships (compared to consumers who have weak dog-owner -relationships).**

The theoretical framework of this study is formed by connecting the previous findings from academic literature about dog-ownership and sustainable buying behavior as extensions to the Theory of Planned Behavior. This framework acts as a basis for all of the hypotheses tested in this study. Figure 5 below portrays the theoretical framework and the hypotheses.



*Figure 5: Theoretical framework and hypotheses of the thesis*

To sum up the theoretical part of this thesis, the aim of this research is to find out, what kind of intentions Finnish dog owners have about purchasing ecological dog food and how these intentions are formed. Based on previous academical findigns, it will be reserached wether biospheric, altruistic and egoistic value orientations have an positive effect on attitudes towards purchasing ecological dog food. It will also be tested, wether the positive relationship between attitudes and intentions are stronger with those dog owners who have a weak emotional relationship to their dog.

### **3 RESEARCH METHODS**

This chapter opens up the chosen research method of this study and the reasoning behind it. First the data collection method is presented, which is followed by the formation of the questionnaire design. Lastly, the chosen data analysis method is explained and with that the reliability and validity are analyzed. The aim of this chapter is to justify how the chosen research method is chosen to answer the research questions of this study.

#### ***3.1. Research design***

A quantitative approach was chosen for this research. Some of the main reasons for this choice were the facts that Ajzen (1991) has originally formed the measurements of the TPB to be quantitative. In addition, many of the most popular studies researching sustainable buying behavior (e.g., Paul et al., 2016; Vermeir & Verbeke, 2008; Al-Swidi Hugue, Hafeez & Shariff, 2014) applying TPB have all used a quantitative research method. To create comparable results to complement the existing field of research, a quantitative approach was also used in this study. The data for this research was collected as an online quantitative survey, because the aim was to understand the behavior of a specific group of people, in this case Finnish dog owners. A quantitative survey is useful when the goal is to measure how chosen variables are related to each other when studying a group of people (Punch, 2003, 23).

Surveys are also useful in testing existing theories and hypotheses. All respondents answer the same questions, which removes any unwanted variation in answers that might arise in other type of data collection methods. Surveys also leave out the possibility that the data collector could impact the answers in some way. (Gray, Williamson, Karp & Dalphin, 2007, 44) The aim was to measure the level of respondents' intensity to the proposed themes and therefore the survey was constructed from close-ended questions. This kind of construct is a fixed-response format, and it is popular in studies that measure attitudes (Teo, 2013, 11). To

measure attitudes, most of the questions had multiple-item scales, because those provide opportunities to measure the underlying attitudes of people (Balnaves & Caputi, 2001, 78).

### ***3.2. Data collection methods***

The respondents for the survey were Finnish dog owners. The survey was distributed to a Facebook group with the theme of dog food and feeding dogs. At the time of the survey there were approximately 2000 members. The survey was made with Qualtrics platform, because of its easiness of use and clear structure. The survey was kept open for three weeks. Answering the survey was anonymous, for the hope of lower threshold to answer. The original questions in English were translated to Finnish to reduce any language barrier. Before distributing the questionnaire to the Facebook group, it was tested with a few people to find out if there were any modifications that needed to be done. Based comments from the test group, the questionnaire was adjusted a little bit to be more understandable.

The questionnaire itself was formed with four parts and it followed the structure of the theory, first part being background questions. The questions were applied from existing questionnaires in previous academic research, some with little modification to fit for the context in question. All of the questions were close ended. First theoretical questions were about personal value orientations, and for that the E-PVQ-measure was chosen. They were presented on a 5-point likert scale, 1 being strongly agree and 5 being strongly disagree. E-PVQ is a modified version of Schwartz's E-SVS -questionnaire to measure personal values and it uses the PVQ-survey style (Bouman, Steg & Kiers, 2018).

Next group of questions were about intentions to purchase sustainable dog food. The questions were modified from the suggested questions from Ajzen (2002). These were presented in a 1–7-point scale as suggested. The description of the options dependent on the question. To measure the dog owner relationship, the questions were applied from Dotson & Hyatt's (2008) questionnaire, which divides measures into two categories: Dog-oriented self-concept items and Anthropomorphism items. Those questions were also presented in a



5-point likert scale, 1 being strongly agree and 5 being strongly disagree. The complete questionnaire consisted of 22 questions, which can be seen in appendix D. The total amount of completed responses was 78, which are further analysed in the results part of this study.

### ***3.3. Data analysis methods***

To understand the impact of attitude, subjective norms and perceived behavioral control to intention, and to reveal possible relationship of values and dog-owner relationship to it, regression analysis was chosen as the analysis method. Regression analysis measures the dependence of a dependent variable and the independent variable(s) - how much a dependent variable changes when an independent variable changes. If the impact of only one independent variable is measured, the method is called linear regression. (Gray et al., 2007, 421). In linear regression, if there exists a perfect linear relationship, it means that when  $x$  changes one unit there is a constant absolute change in  $y$  (Krzanowski, 2007, 119). The formula of linear regression is portrayed as follows:

$$Y = a + bX$$

$Y$  represents the dependent variable and  $X$  is the independent variable, the explanatory value.  $A$  in this case means the intercept value, which refers to the value of  $Y$  when  $X$  gets the value 0.  $B$  on the other hand describes the slope, which is referred to as the regression coefficient. On the other hand, if there are multiple independent variables, the method to be used is multiple regression. (Gray et al., 2007, 421-422) The equation for simple multiple regression is as follows:

$$Y = a + bx_1 + cx_2 + \dots + dx_k.$$

It represents the impact of multiple independent variables to the one dependent variable. (Krzanowski, 2007, 125) A, b, c, d etc are referred to as partial regression coefficients, which provide the number of units change in the dependent variable when there is a one-unit change in a predictor. (Gray et al., 2007, 423, 429) There are four general assumptions for the regression model that need to be considered. Firstly, the model assumes that there is a linear relationship between the dependent and independent variables. Second assumption is that the model is homoscedastic and third that the residuals are normally distributed. The fourth assumption is that expected errors are independent and therefore there is no autocorrelation. Lastly, the individual independent variables should not be mutually dependent. (Krzanowski, 2007, 127, 144)

In order to perform the regression analysis for the collected data, the measurements were merged together by using factor analysis. Factor analysis reveals those variables that measure the same aspects and groups them together to a sum variable. The analysis makes it possible to measure the wanted themes with using more than just one proposition for each measurable item, which increases the quality of the measurements. Factor analysis is useful for testing the accuracy of preconceptions or existing theories in data. This model assumes that variables should be intervals, such as likert-scales, and that there are not a lot of outliers. Also, the data should be normally distributed. (Valli, 2015)

When forming the factors, the common lowest level of correlation between the variables in the same factor is 0,30. The eigenvalue is usually set to be 1,00 and there should be no more factors than 20 percent of the variables included. The percentage of variance explained should be over 50 percent. (Valli, 2015) Cronbach's alpha, which measures the reliability of the variables, should be over 0.6 and Keyser-Meyer-Olkin test, which calculates the ratio that comes from the squared correlation between variables to the squared partial correlation between variables, should be at least 0.5 (Metsämuuronen, 2011, 467 & 670).

### ***3.4. Data analysis process***

The analysis was conducted by using Stata. Stata was chosen as the software for the data analysis, because of its easiness of use and personal preferability of the author. The company behind the software is StataCorp, who released the first form of Stata in 1985 (StataCorp LLC, 2022). Before uploading the data to Stata, some screening needed to be done in order to have better quality data. This meant that those responses which had not been finished, were removed. Once the data was transformed to Stata, it was coded to the proper form, meaning coding the survey answers from text into numeric variables.

The analysis started by examining the descriptive statistics, which are discussed later on. After that, factor analysis was done to group variables together, which made it easier to analyse the relationships of the variables. Using factor analysis was also a good opportunity to test how well the collected data was in line with the questionnaires used. The result of factor analysis were new sum variables, which were then used in the regression analysis to test the hypotheses. The regression analysis was done in four parts with using multiple regression as the analysis method. The dependent variables were intention and attitude. Based on the analysis' the hypotheses were either supported or not.

### ***3.5. Reliability and validity***

In this section, the reliability and validity of the study are discussed. Reliability refers to how well the study can be repeated by other researchers - reliable research can be repeated by another researcher with the same results. Validity on the other hand means how well the study measures what it is supposed to – how good are the measures used and the accuracy and generalisability of the results. Reliability can be ensured by being consistent throughout the whole research process and by evaluating critically the used methods. (Saunders, Lewis & Thornhill, 2016, 202) According to Metsämuuronen (2009, 75), reliability can be tested with repetition of the study, with a parallel study or with the measurement of the internal statistics that are used in the tests of the research. For this research, the reliability was reported in factor analysis by using the Cronbach's alpha test. Those variables that did not meet the required level were not included in regression analysis to ensure the reliability of the results.

Validity can be divided into internal and external validity. Internal validity is present when a causal relationship between variables has been introduced in the research. External validity on the other hand describes how well the findings of the research can be generalized in other settings. (Saunders et al., 2016, 203-204) To ensure internal validity of the study, the survey questions were collected from previous literature in which they had been proven to work well. The data was collected from a Facebook group dedicated to options in feeding dogs, with the idea that a group with a lot of members would consist of people from different backgrounds.

Before the data collection, actions were made to increase validity. The questionnaire was translated into Finnish to reduce any language barriers. To make sure that the questions were easy to understand, the survey was tested with a test group before the actual data collection. Even though these actions were made, a major part of the respondents did not complete the survey. This indicates that there were still issues for example due to the survey being too long or difficulties in understanding the aim of the questions. Therefore, the external validity of this research was not great because of the small sample size.

## 4. FINDINGS

This chapter presents the empirical findings of this study. To give an overall outlook of the data, descriptions of the sample are presented first. After that the results of the factor analysis are provided and the formed factors act as the base for the regression analysis. Regression analysis is presented in the final part of this chapter and the results of it will confirm the previously determined hypotheses or not.

### 4.1. Data sample descriptions

The data set had originally 147 questions, but a major part of the respondents did not complete the survey. This drop led to 78 completed answers observations in total that could be used in this research. First in the survey the respondents were asked to tell their gender. 93.59% answered to be female, 3.85% answered male and 2.56% did not want to specify their gender. The gender distribution is visualised as a histogram in figure 6 below.

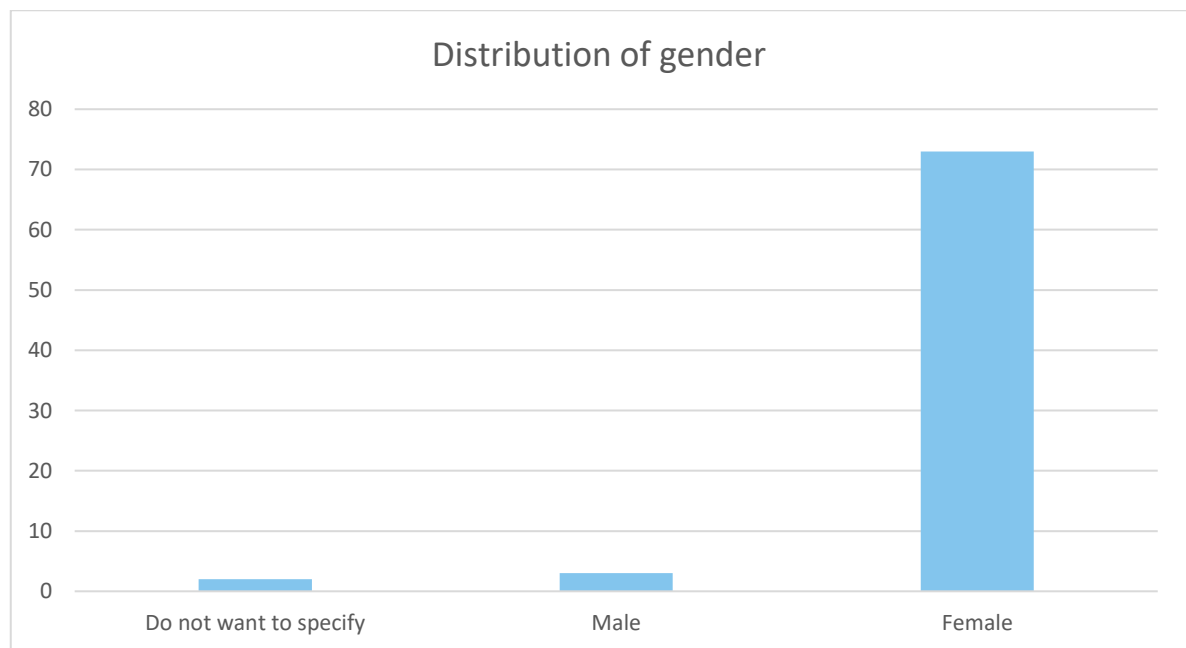
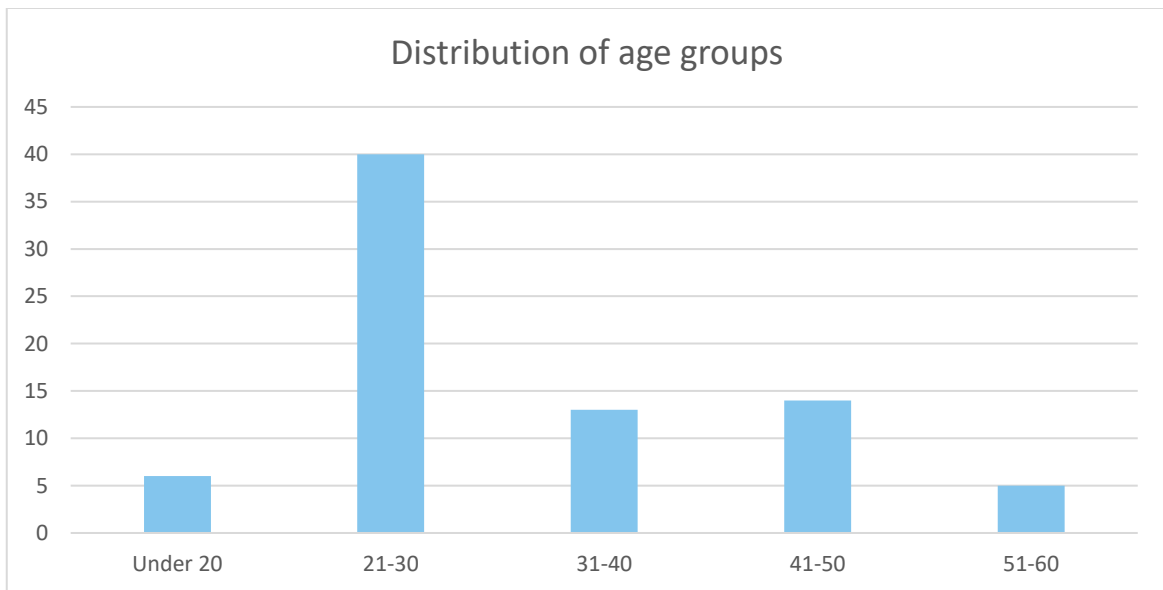


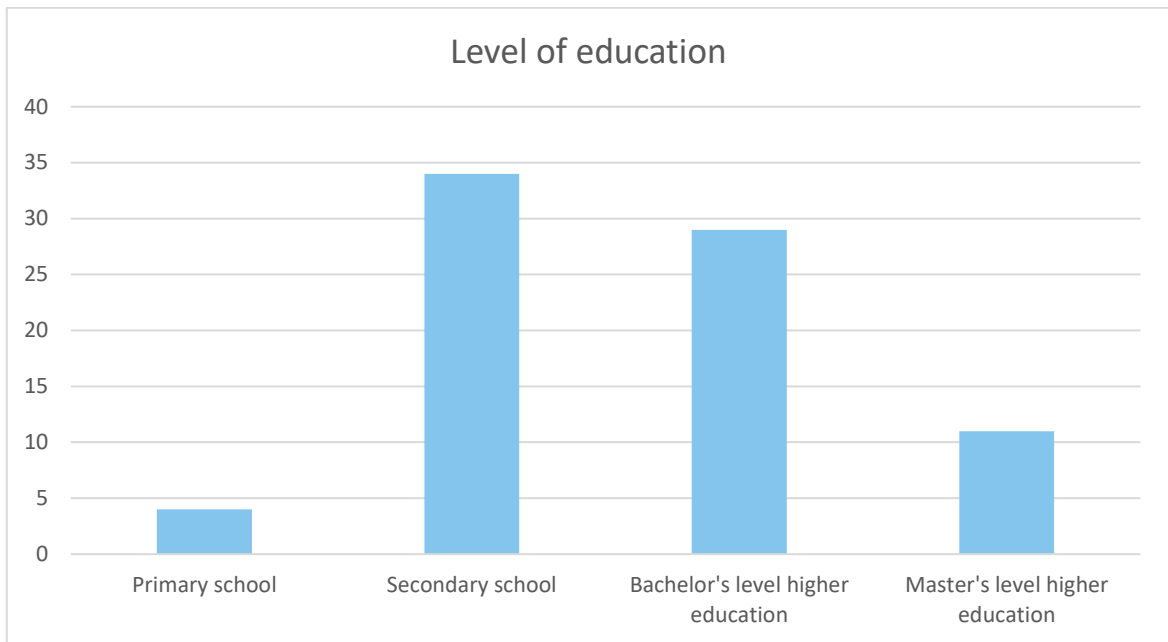
Figure 6: Distribution of gender (n=78)

Next question was age. To simplify the results, the respondents were asked to tell in which age group they belonged to, rather than providing the actual age. There were five age groups: under 20-year-olds, 21-30, 31-40, 41-50, 51-60 and over 60-year-olds. The distribution of age can be seen in figure 7 below. The majority of the respondents, 51.28%, answered to belong in the group of 21-30. 16.67% answered 31-40 and 17.95% answered 41-50. 7.69% answered to be under 20 and 6.41% answered to be 51-60 years old.



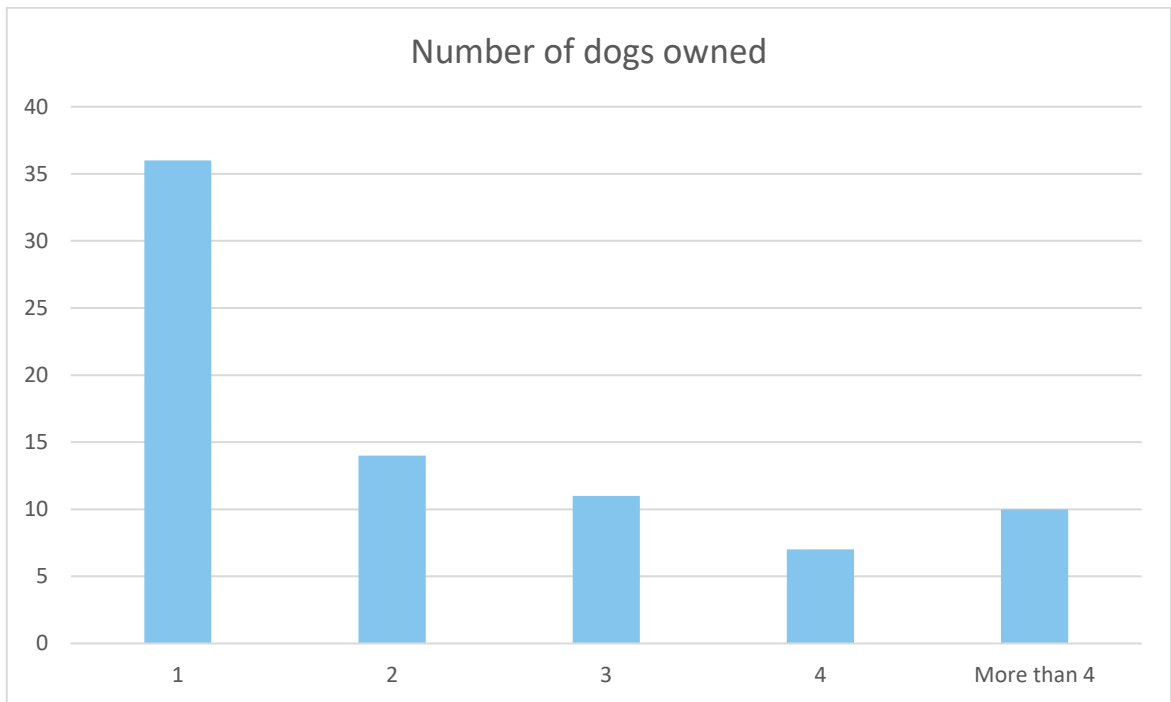
*Figure 7: Distribution of age groups*

Most of the respondents had answered their highest level of education to be either secondary school (43.59%) or bachelor level higher education (37.18%). 5.13% of the respondents answered primary school level and 14.10% answered master's level higher education. This is portrayed in figure 8 below.



*Figure 8: Level of education*

Next in line was the question “how many dogs do you own?”, for which the categories were 1, 2, 3, 4 and more than 4. A clear majority (46.15%) owned one dog. 17.95% of the respondents owned 2, 14.10% of the respondents owned 3, 8.97% owned 4 and 12.82% owned more than for. The results are visualised in figure 9.



*Figure 9: Number of dogs owned*

In relation to owning a dog, the respondents were asked what kind of food they mainly feed their dog. Distribution can be seen in figure 10. 62.67% feed mainly dry food (kuivaruoka) and 33.33% raw food (raakaruoka). 2.67 % feed wet food (märkäruoka) and 1.33% feed home food (kotiruoka).



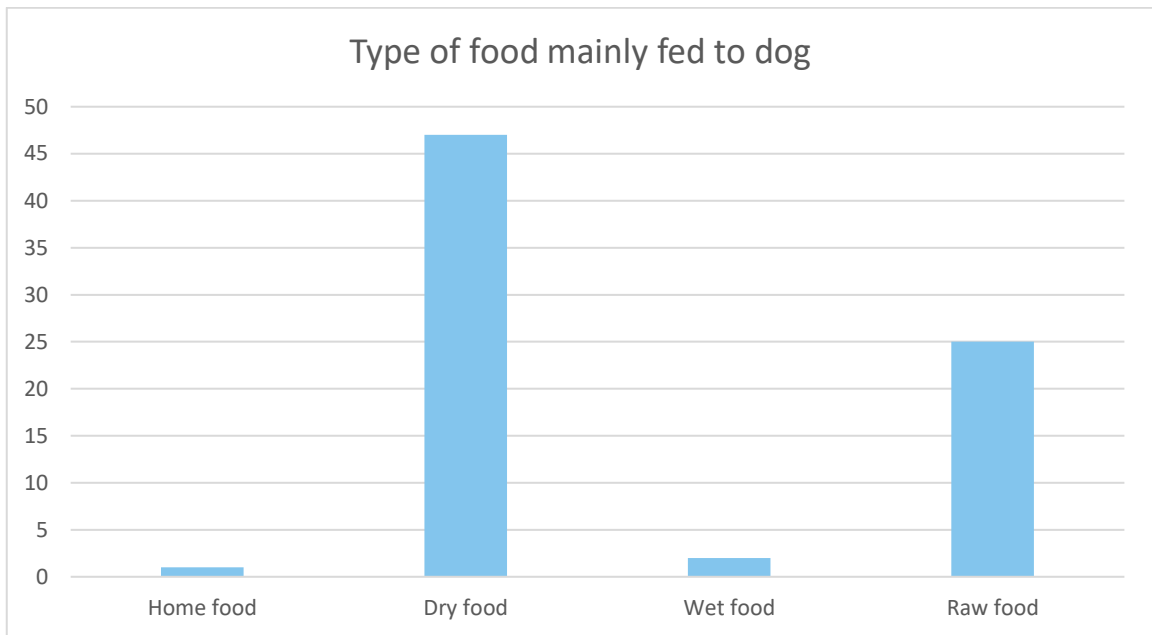


Figure 10: Type of food mainly fed to dog

#### 4.2. Factor analysis

After descriptions of the sample, the analysis moved on to factor analysis, which gave a base for the hypotheses testing. The factor analysis was divided on to three parts, following the themes in the questionnaire. First in line were questions concerning personal values, then questions about intention to purchase and lastly questions related to dog-owner relationship. All the measured statements can be seen in appendix A.

##### **Personal values**

Firstly, the questions about personal values were examined. In the first run the analysis suggested four factors, where question q6\_13: *“It is important to me to have money and possessions.”* loaded to the fourth factor by itself. Therefore, it was decided to be removed from the analysis. After that, the analysis provided three factors, where all of the questions were distributed nicely to specific factors without any problems (table 3).

Loadings were excellent with the range from 0.66-0.86. Eigenvalues for each factor were as follows: factor one with 4.865, factor two with 2.386 and factor three with 1.151. Together the three factors explained 70 percent of the variance. Keyser-Meyer-Olkin test values were all over the 0.5 and Cronbach's alpha were: factor one 0.857, factor two 0.864 and factor three 0.771. Those are all on a good level. The factors are also in line with the three categories that were presented in the questionnaire based on previous theory. Factors were named according to the questions represented in them: factor one as altruistic values, factor two as biospheric values and factor three as egoistic values.

*Table 3: Factor analysis on personal values*

Variable	Factor 1	Factor 2	Factor 3	Communalities	MSA	Uniqueness
Prevent environmental pollution		0,836		0,759	0,817	0,241
Protect the environment		0,906		0,874	0,782	0,126
Respect nature		0,803		0,744	0,830	0,256
Be in unity with nature		0,679		0,587	0,800	0,413
Equal opportunities	0,756			0,605	0,763	0,395
Take care of those who are worse off	0,838			0,756	0,845	0,244
Every person is treated justly	0,792			0,702	0,841	0,299

No war or conflict	0,770			0,667	0,879	0,333
Helpful to others	0,664			0,515	0,836	0,486
Control over others' actions.			0,859	0,799	0,597	0,201
Authority over others			0,855	0,821	0,628	0,180
Be influential			0,743	0,574	0,802	0,426
Eigenvalue	4,865	2,386	1,151			
Cumulative %	0,405	0,604	0,700			
Cronbach's alpha	0,857	0,864	0,771			

### **Intention to purchase**

Next analysis was run for the questions that measured the intention to purchase sustainable dog food, which were based on TPB. The results were a bit complicated, because the questions about intention did not load strongly to any of the four factors that were formed. Therefore, it was decided to divide the analysis to two parts: first part consisting of the questions about attitude, subjective norms and behavioral control and second with intention by itself. This gave the opportunity to see whether the questions grouped the same way as they are supposed to in TPB.

In the first part, three factors were formed but some questions loaded strongly to more than one factor. Q9\_1 ("Most people important to me think that when I buy food for my dog, I

should/should not choose a sustainable option”), q11\_1 (“The people in my life whose opinions I value think I should/should not choose a sustainable option”), q14\_1 (“Many people like me choose a sustainable option when buying food for their dog”), q15\_1 (“For me, choosing a sustainable option would be possible / impossible”) and q17\_1 (“I believe I can have influence on whether I choose a sustainable option or not”) were all dropped from the analysis because of double loadings.

After removing those questions, the final three factors were formed (table 4). Factor one resembles attitude, factor two subjective norms and factor three perceived behavioral control. This distribution also follows the logic of how they are distributed in TPB. These factors explained 71,6 percent of the variance. The Keyser-Meyer-Olkin test gave values all over 0.6 and Cronbach’s alpha values were as follows: factor one 0,861, factor two 0,727 and factor three 0,693.

*Table 4: TPB factor analysis for attitude, subjective norms, and perceived behavioral control*

Variable	Factor 1	Factor 2	Factor 3	Communalities	MSA	Uniqueness
Choosing sustainable option: bad/good	0,767 5			0,6019	0,8743	0,3981
Choosing sustainable option: worthless/valuable	0,847 9			0,7812	0,7689	0,2188
Choosing sustainable option: harmful/beneficial	0,819 5			0,7117	0,8552	0,2883

Choosing a sustainable option: meaningless/meaningful	0,7816			0,7841	0,8025	0,2159
Expected to choose a sustainable option: not likely/likely		0,6767		0,5033	0,8588	0,4967
Most people important to me choose a sustainable option: untrue/true		0,8574		0,7732	0,7500	0,2268
Those whose opinions I value choose a sustainable option: no/yes		0,8075		0,7036	0,7689	0,2964
If I wanted, I could choose a sustainable option: false/true			0,7974	0,7563	0,7555	0,2437
It is up to me whether I choose a sustainable option: disagree/agree			0,9062	0,8270	0,6026	0,1730
Eigenvalues	3,9665	1,2584	1,2172			
Cumulative %	0,4407	0,5805	0,7158			
Cronbach's alpha	0,8610	0,7270	0,6931			

Factor analysis for questions about intentions is seen in table 5. This factor consisted with three questions which all loaded nicely to the same factor. Eigenvalue was 2,759, KMO-test levels all over 0,7 and Cronbach's alpha 0,956.

*Table 5: Factor analysis for intention*

Variable	Factor1	Communalities	MSA	Uniqueness
I will choose a sustainable option	0,962	0,926	0,747	0,074
I try to choose a sustainable option	0,969	0,940	0,711	0,060
I plan to choose a sustainable option	0,946	0,894	0,850	0,106
Eigenvalue	2,759			
Cumulative %	0,920			
Cronbach's alpha	0,956			

### **Dog-owner relationship**

Last factor analysis was done for the questions about dog-owner relationships, which were in the questionnaire divided into anthropomorphism items and dog oriented self-concept items. The first run with all the questions resulted in four factors, but some problematic questions existed also in this analysis. Questions q22\_2nro (“The time I spend with my dog prevents me from spending time with other people”), q22\_7nro (“I feel like I can communicate with my dogs”), q22\_8nro (“My dog is part of my family”) and q22\_10nro (“I learn a lot from my dogs”) were decided to be removed. KMO-test value for q22\_2nro was under 0.5 and was therefore left out of the analysis. In order for the analysis to group the questions according to the theory, q22\_7nro, q22\_8nro, q22\_10nro and q22\_11nro were left out since they did not load to the correct factors, or they loaded to more than one factor.

The final result was two factors, factor one describing dog-oriented self-concept items and factor two anthropomorphism items. Cumulative percent of variance explained was not as high as what it was with the previous factors, but it is still over the accepted amount of 50 % (Table 6). KMO-test results for these factors were all over 0,5 except for question: “*I see dogs as more like people than wild animals*”. For factor one, Cronbach’s alpha result was only 0,562, which is under the accepted limit. There were no options to raise the value by removing any of the variables. The uniqueness levels are also all relatively high, which indicates that the factor might not very be suitable to use. However, the factor was still decided to be left in the analysis. The reliability of it is taken into account and discussed later on in the research. For factor two the Cronbach’s alpha was 0,652, which is a good result.

*Table 6: Factor analysis for dog-owner relationship*

Variable	Factor 1	Factor2	Communalities	MSA	Uniquenes s
My dog is my best friend	0,7334		0,5674	0,609 2	0,4326
Better relationships with other people because of my dogs	0,6642		0,4560	0,704 6	0,5440
No relationship with someone who does not accept my dog	0,6295		0,3963	0,595 3	0,6037
My dog is an extension of myself	0,5832		0,4285	0,677 2	0,5715
Dogs more as humans than wildlife		0,8934	0,8253	0,410 7	0,1747
My dog is like my own child to me		0,7960	0,7363	0,521 6	0,2637
Eigenvalue	2,0569	1,3530			
Cumulative %	0,3428	0,5683			

Cronbach's alpha	0,5615	0,6525			
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### 4.3. Regression analysis and hypothesis testing

The created sum variables in the factor analysis were then used in the regression analysis to test the previously formed hypotheses. The analysis was done in four parts. First the impact of attitude, subjective norms and perceived behavioral control on intention. Second part was the impact of personal values on attitude. Third part was the moderating role of dog-owner relationship on the dependency of attitude and intention. Fourth part was the moderating role of dog-owner relationship on the dependency of perceived behavioral control and intention. In order to do the regression analysis, the normality of the variables were tested visually and no issues were found.

Firstly, a multiple regression analysis was done, where the dependent variable was intention to purchase sustainable dog food and dependent variables were attitude, subjective norms and perceived behavioral control. Before proceeding to the model, the correlations of the variables were studied. The dependent variable “intention” correlated strongly with all of the independent variables. There were also some correlations between the independent variables with each other. The results can be seen in table 7. All variables affect positively on intention, attitude having the strongest effect. Behavioral control has the lowest effect on intention. In this model the predictors explain 62% of intention to purchase. All results are statistically significant as all p values are  $< 0.001$ .

Table 7: Regression analysis for intention formation

Intention	Coefficien t	Std. err.	t	P> t	[95% conf. ]	interval
Attitude	0,6361	0,1169	5,4400	0,0000	0,4032	0,8691
Subjective norms	0,4160	0,1276	3,2600	0,0020	0,1617	0,6702



Perceived behavioral control	0,3084	0,0793	3,8900	0,0000	0,1504	0,4664
_cons	-2,5645	0,5729	-4,4800	0,0000	-3,7059	-1,4230
Number of obs	78					
F(3, 74)	40,5600					
Prob > F	0,0000					
R-squared	0,6218					
Adj R-squared	0,6065					
Root MSE	1,1906					

With all regression analysis', the assumptions of the models are checked. For the first model, there were no issues with linearity, but it turned out that the model was not homoscedastic. To fix that, the corrected mean errors were estimated with the additional attribute vce. The results of this can be seen in table 8. Other assumptions were met, which meant that there is no dependency with the residuals and the dependent variable, there is no multicollinearity and residuals are normally distributed.

*Table 8: Regression analysis for intention formation with corrected mean errors estimated*

Intention	Coefficien t	std. err.	t	P> t	[95% conf. ]	interval
Attitude	0,6361	0,1331	4,7800	0,0000	0,3710	0,9013
Subjective norms	0,4160	0,1417	2,9400	0,0040	0,1336	0,6983
Perceived behavioral control	0,3084	0,0823	3,7500	0,0000	0,1444	0,4724
_cons	-2,5645	0,5189	-4,9400	0,0000	-3,5985	-1,5305
Number of obs	78					
F(3, 74)	60,0300					

Prob > F	0,0000					
R-squared	0,6218					
Root MSE	1,1906					

Next regression analysis was done for the effect of biospheric, altruistic and egoistic value orientations to attitude for purchasing sustainable dog food. First thing to notice when examining the correlations between variable was that attitude and egoistic value orientation did not have a strong correlation ( $<0.05$ ). From the analysis (table 9) it can be seen, that biospheric values was the only variable that has a statistically significant positive impact on attitude, p value being  $<0.05$ . For the other variables the p value was larger than the accepted limit. The impact of biospheric values is also strong, 0.95. The assumptions of regression were met for the variable biospheric values.

*Table 9: Regression analysis for the impact of personal values on attitude*

Attitude	Coefficient	Std. err.	t	P> t	[95% conf.	interval]
Biospheric values	0,9535	0,1928	4,95	0,000	0,5693	1,3377
Altruistic values	-0,0399	0,2364	-0,17	0,867	-0,5111	0,4313
Egoistic values	-0,1290	0,1635	-0,79	0,433	-0,4548	0,1968
_cons	1,9126	0,9925	1,93	0,058	-0,0654	3,8906
Number of obs	77					
F(3, 73)	11,63					
Prob > F	0,0000					
R-squared	0,3235					
Adj R-squared	0,2956					
Root MSE	1,1337					

In the third analysis it was examined whether the positive relationship between attitude and intentions to buy sustainable food is stronger for consumers that have weak dog-owner -relationships, compared to consumers who have strong dog-owner -relationships. In order to conduct the analysis, two interaction terms *attitude\_x\_self-concept* and *attitude\_x\_anthropomorphism* were created with calculating the variable attitude times the both indicators for dog-owner relationship. The results of the regression analysis are in tables 10 and 11. As can be seen from the analysis', the results in either case were not statistically significant due to p values being larger than 0,05.

*Table 10: The relationship between attitude and intentions to buy sustainable food with the moderating role of the anthropomorphism items dimension on dog-owner relationships.*

Intention	Coefficient	Std, err,	t	P> t	[95% conf,	interval]
Attitude	1,4505	0,3834	3,7800	0,0000	0,6865	2,2144
Anthropomorphism items	0,6385	0,6024	1,0600	0,2930	-0,5618	1,8389
Attitude_x_anthropomorphism	-0,1512	0,1091	-1,3900	0,1700	-0,3685	0,0662
_cons	-3,8949	2,1311	-1,8300	0,0720	-8,1412	0,3514
Number of obs	78,0000					
F(3, 74)	23,4000					
Prob > F	0,0000					
R-squared	3,3806					
Adj R-squared	3,2361					
Root MSE	0,3104					

*Table 11: The relationship between attitude and intentions to buy sustainable food with the moderating role of the dog-oriented self-concept dimension on dog-owner relationships.*

Intention	Coefficient	Std, err,	t	P> t	[95% conf,	interval]
Attitude	1,837269	0,6094	3,0100	0,0040	0,6230	3,0516
Self-concept	0,9479281	0,7995	1,1900	0,2400	-0,6452	2,5410
Attitude_x_self-concept	-0,215947	0,1451	-1,4900	0,1410	-0,5050	0,0731
_cons	-5,659824	3,3766	-1,6800	0,0980	-12,3879	1,0682
Number of obs	78,0000					
F(3, 74)	23,4000					
Prob > F	0,0000					
R-squared	0,4868					
Adj R-squared	0,4660					
Root MSE	1,3870					

The last analysis was to predict whether the impact of perceived behavioral control to intentions to buy sustainable food is stronger for consumers that have strong dog-owner relationships, compared to consumers who have weak dog-owner -relationships. For that interaction terms *behavioralcontrol\_x\_self-concept* and *behavioralcontrol\_x\_anthropomorphism* were created by calculating the variable for behavioral control times the both indicators for dog-owner relationship. The results are in tables 12 and 13. These results of with the dimension of anthropomorphism items are not statistically significant, since the p values are above the accepted 0,05. However, with the dog-oriented self-concept items, the result is statistically significant.

*Table 12: The relationship between perceived behavioral control and intentions to buy sustainable food with the moderating role of the anthropomorphism items dimension on dog-owner relationships.*

Intention	Coefficient	Std. err.	t	P> t	[95% conf.	interval ]
Behavioral control	1,0177	0,2225	4,570 0	0,000 0	0,574 3	1,4611
Anthropomorphism items	0,3473	0,3416	1,020 0	0,313 0	- 0,333 4	1,0281
Behavioral control_x_anthropomorphism items	-0,0989	0,0615	- 1,610 0	0,112 0	- 0,221 4	0,0235
_cons	-0,9614	1,2124	- 0,790 0	0,430 0	- 3,377 0	1,4543
Number of obs	78,0000					
F(3, 74)	18,9900					
Prob > F	0,0000					
R-squared	0,4350					
Adj R-squared	0,4121					
Root MSE	1,4554					

*Table 13: The relationship between perceived behavioral control and intentions to buy sustainable food with the moderating role of the dog-oriented self-concept items dimension on dog-owner relationships.*

Intention	Coefficient	Std. err.	t	P> t	[95% conf.	interval ]
Behavioral control	1,3094	0,2809	4,6600	0,0000	0,7497	1,8692

Self-concept	0,4451	0,3555	1,2500	0,2140	-0,2633	1,1536
Behavioral control x Self-concept	-0,1485	0,0643	-2,3100	0,0240	-0,2767	-0,0203
_cons	-1,6481	1,5237	-1,0800	0,2830	-4,6841	1,3879
Number of obs	78,0000					
F(3, 74)	20,7800					
Prob > F	0,0000					
R-squared	0,4572					
Adj R-squared	0,4352					
Root MSE	1,4265					

According to the results, the positive relationship between perceived behavioral control and intentions to buy sustainable food is slightly weaker for consumers that have strong dog-owner -relationships in the dimension of dog-oriented self-concept items. When the value of the independent variable “behavioral control” rises by 1, it has a positive effect of 1,3094 to intention, when the moderating variable “self-concept” gets the value 0. When the value of the moderating variable rises by 1, the positive effect of behavioral control on intention lowers to 1,1609 (1,3094-0,1485).

The findings of the analyses are summarized below with each hypothesis. Four out of eight hypotheses were supported. Attitude, subjective norms and perceived behavioral control have all a positive effect on intention. In terms of personal values, biospheric values have a positive effect on attitude. The other two results of personal values’ effect on attitude were not statistically significant. Both of the hypotheses of dog-owner relationship’s moderating role to attitude’s and perceived behavioral control’s impact on intention were rejected. However, the dog-oriented self-concept items dimension of dog-owner relationship had a statistically significant moderating effect on how strong the effect of perceived behavioral control is to intention.

<b>H1:</b>	<b>Attitudes towards purchasing sustainable pet food products positively affect the intention to purchase sustainable pet food products.</b>	<b>Supported</b>
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Attitudes have a positive effect of 0,6361 on intention. P value was also in the accepted range, which means that this hypothesis was supported.

<b>H2:</b>	<b>Subjective norms positively affect the intention to purchase sustainable pet food products.</b>	<b>Supported</b>
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Subjective norms have a positive effect of 0,4160 on intention. P value was also in the accepted range, which means that this hypothesis was supported.

<b>H3:</b>	<b>Perceived behavioral control positively affect s the intention to purchase sustainable pet food products.</b>	<b>Supported</b>
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Perceived behavioral control has a positive effect of 0,3084 on intention. P value was also in the accepted range, which means that this hypothesis was supported.

<b>H4:</b>	<b>Biospheric value orientation has a positive effect on the attitude towards purchasing sustainable dog food.</b>	<b>Supported</b>
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Biospheric value orientation has a positive effect of 0,9535 on attitude. P value was also in the accepted range, which means that this hypothesis was supported.

<b>H5:</b>	<b>Altruistic value orientation has a positive effect on the attitude towards purchasing sustainable dog food.</b>	<b>Rejected</b>
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Altruistic value orientation has a negative effect of -0,0399 on attitude. P value was 0,867, which means that this hypothesis was rejected.

<b>H6:</b>	<b>Egoistic value orientation has a negative effect on the attitude towards purchasing sustainable dog food.</b>	<b>Rejected</b>
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Egoistic value orientation has a negative effect of -0,1290 on attitude. P value was 0,433, which means that this hypothesis was rejected.

<b>H7:</b>	<b>The positive relationship between attitude and intentions to buy sustainable food is stronger for consumers that have weak dog-owner -relationships.</b>	<b>Rejected</b>
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Both dimensions of dog-owner relationship had a negative moderating effect on the positive relationship between attitude and intention. Anthropomorphism items -dimension had an effect of -0,1512 and dog-oriented self-concept items -dimension had a -0,215947 effect. Neither of the results were statistically significant with p values of 0,1700 and 0,1410.

<b>H8:</b>	<b>The positive relationship between perceived behavioral control and intentions to buy sustainable food is stronger for consumers that have strong dog-owner -relationships.</b>	<b>Rejected</b>
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Both dimensions of dog-owner relationship had a negative moderating effect on the positive relationship between perceived behavioral control and intention. Anthropomorphism items -dimension had an effect of -0,0989 and dog-oriented self-concept items -dimension had a -0,1485 effect. The result of anthropomorphism items -dimension was not statistically



significant with the p value of 0,1120. The result of dog-oriented self-concept items - dimension was statistically significant with the p value of 0,0240

## 5. DISCUSSION AND CONCLUSIONS

This chapter consists of discussion of the previous findings. The findings are analysed thoroughly by reflecting them on the previous literature. The focus is to give answers to the research questions of this study.

### 5.1. *Theoretical contributions*

This study aimed to give a better understanding of sustainable buying behaviour in contexts, where the commodity bought is for meant for someone else than the buyer itself – in this case for a dog. The theoretical and empirical part together indented to clarify, how the intention to buy sustainable dog food is formed overall, and whether the relationship between the owner and the dog has a moderating impact on the formation. The sub-questions are answered first and based on those the main research question is answered.

#### ***SRQ1: What are the attitudinal drivers of intentions to buy sustainable dogfood?***

This question aimed to seek, whether the same attitudinal drivers of intention, that have been found to be accurate in previous research of buying sustainable food in particular, apply to the context of buying dog food. In the theoretical part, the Theory of Planned Behavior was introduced as the main framework for the formation of intention. Based on the results, this study argues that the intention to choose a sustainable option when buying dog food is driven by three attitudinal factors. Firstly, the positive attitude towards choosing a sustainable option has a positive effect on the intention to purchase sustainable dog food. Secondly, subjective norms have a positive effect on intention. Lastly, perceived behavioral control has a positive effect on intention. From these three drivers, attitude has the biggest positive impact on intention.

This result supports the accuracy of the Theory of Planned Behavior and Ajzen's (1991, 188) arguments, that the more positive attitudes are, and the more favourable the perceived social pressure is, combined with the more control a person has over the behavior, the stronger the intention is to perform the behavior. It also gives understanding to the fact that intention to purchase sustainable products differs based on what the context is, as was stated earlier in the literature review of this research.

***SRQ2: How do consumers' personal values influence intentions to buy sustainable dogfood?***

Previous studies have shown, that in addition of the three drivers of intention to purchase sustainable commodities, personal values have also found to be impactful. Personal values have been found to affect the attitude towards purchasing sustainable commodities. This viewpoint was also included in this research to gain a more comprehensive understanding of the formation of intention. Three categories of personal values were chosen in the research based on previous findings in the academic literature: biospheric, altruistic and egoistic. The results of the empirical analysis show, that in this case only biospheric value orientation has a positive effect on the attitude towards choosing a sustainable option when buying food for a dog. The other two value orientations were not found to have a statistically significant impact on attitude.

The result of biospheric values having a positive impact on attitude was not surprising. Many previous studies have found out that environmental values are linked to having positive attitudes towards ecological consumption. (for example see Schultz, Gouveial, Cameron, Tankha, Schmuk & Franêk 2005; de Groot & Steg, 2007; Olander & Thøgersen, 2002; Thøgersen & Zhou, 2012). However, the two other value dimensions did not have a significant impact. A possible explanation could be, that those value orientations are related more to how one sees itself and one's role compared to other people, whereas biospheric focuses on the protecting the environment. In the survey, dog owners were asked about their

thoughts on ecological dog food, which might have led to dog owner's viewing the purchase of sustainable dog food purely as an ecological choice.

***SRQ3: How does dog-owner relationship shape the formation of intention to buy sustainable dogfood?***

The last sub-question was formed based on previous findings about pet related buying behavior. Buying behaviour has been found to be different when people are buying for themselves compared to when they are buying for their dog, based on their relationship with their dog. However, this had not been studied previously in terms of sustainable buying behaviour. This research aimed to find an answer to whether the owner-dog relationship also has an impact on the intention to buy sustainable dog food.

The theoretical analysis led to the hypotheses that owner-dog relationship acts as a moderating factor when it comes to the strength of attitudes and perceived behavioral control's impact on intention. Firstly, no moderating effect was found for the positive relationship of attitude and intention. Even though the hypotheses were not supported, these findings still bring better understanding to subject of dog-owner relationship as a moderator in the dog related consumption. As Boya et al., (2005) argued in their research, those owners who are strongly attached to their dog, emphasize the dog's own experience when buying food. They also put value on nutrition, taste and freshness when buying dog food, more than those dog owners who are not as strongly attached to their dog. It seems that in the case of how strongly attitudes impact on the intention to purchase, the relationship with the dog does not matter.

Yet the findings show that the positive relationship between perceived behavioral control and intentions to buy sustainable food is weaker for consumers that have strong dog-owner-relationships. This is an opposite effect of what the hypotheses predicted. It should be noted, that the moderating effect happens only for those owners who have a strong relationship in terms of dog-oriented self-concept items. In the dimension of anthropomorphism items, no

moderating effect was found. This result supports the overall consensus of dog-owner relationship having at least some sort of moderating effect in dog owners' buying behavior also in the context of ecological products, as previous research has stated (Boya et al., 2005; Tesfom and Birch, 2010; Jyrinki, 2012). To understand the effect better, more research is needed.

Based on these sub-questions, the main research question can be answered: ***Which factors influence dog owners' intentions to purchase sustainable dog food?***

This study argues that dog owners' intentions to purchase sustainable dog food are influenced by three main factors: attitudes towards purchasing sustainable dog food, subjective norms and perceived behavioral control. The biggest impact comes from attitudes, and the smallest from perceived behavioral control. Attitudes to purchase sustainable dog food are influenced by how much the owners' value biospheric aspects, such as preventing environmental pollution and protecting the environment. The last finding is, that the stronger the relationship is between the dog and the owner in terms of dog-oriented self-concept items, the less of a positive effect perceived behavioral control has on the intention to purchase sustainable dog food.

## ***5.2. Managerial Implications***

The managerial implications are provided from the point of view of the companies selling dog food and those promoting sustainability in particular. As mentioned, attitudes towards purchasing sustainable food have the biggest impact on the intention to buy. If sustainability is something that the company selling dog food is interested to promote as a selling point, then one focus should be on those dog owners who do not have positive attitudes towards buying sustainable dog food. The focus should be on changing these attitudes positive, so that it would lead to buying intentions. First step should be to investigate why those people have negative attitudes in the first place. The results also showed that biospheric values have a positive effect on attitude. Therefore, companies should focus on promoting those

biospheric values in their marketing to reach the wanted target group of customers and to increase the positive attitudes towards purchasing sustainable dog food. Promoting the positive environmental effects of sustainable dog food could also increase the positive attitudes of dog owners.

The impact of subjective norms to intention highlights the importance of recommendation and word-to-mouth. Companies should focus on encouraging people to recommend the products for their friends and other people in their life who's opinions matter to them. This could also provide opportunities for using influencers in social media campaigning or getting experts of the field to promote the products. The role of perceived behavioral control on the other hand means, that it is important for the dog owners to feel like they have the capabilities to purchase sustainable dog food if wanted. For a pet commodities store, increasing the owners' feeling of perceived behavioral control could mean for example accessible prices, comprehensive selections of sustainable dog food and clear information about the possibilities to choose a sustainable option to increase self-confidence. Single dog food brands should also focus on pricing and informing customers about the sustainable aspects of the product.

It seems that the relationship between the owner and the dog does not moderate the strength of attitudes impact on intention. For managerial purposes this means that there should be no difference in promoting the factors that increase positive attitudes to different dog owners based on their relationship with their dog. The reasons why those owners who have positive attitudes but no intention to purchase underly somewhere else. The findings indicate, that the strength of attitudes impact towards purchasing sustainable dog food is based on other factors than the relationship between the dog.

How ever, it still seems that there might be a difference in how dog owners' intent to purchase sustainable food for their dog compared to when they buy for themselves, based on their relationship with their dog. The findings indicate that the stronger the dog-owner relationship in the dimension of dog-oriented self- concept items, the weaker is the impact

of perceived behavioral control to intention. Even though those owners feel like they have the capabilities to purchase sustainable dog food, they still might not have the intention to do so. For managerial purposes this means, that for these dog owners the drivers for intention underlie somewhere else and companies should focus on the other suggestions introduced previously.

### **5.3. *Limitations and future directions***

Some limitations concern this research. First of all, the sample size was rather small due to a big group of people not finishing the survey. A larger group of answers would have provided a more reliable result and also more diversity to the sample group. The big number of unfinished answers indicate that the survey was either too long or too difficult to understand, which lead to people leaving it unfinished. A better design of the survey could have reduced this problem. As the survey was distributed in a Facebook group, it also automatically left out those not using Facebook. A bigger reach for the survey could have been gotten for example in a co-operation with a pet food store, in order to reach those not using social media. The survey questions were also in Finnish, which delimited those who do not understand the language. This research focused only on Finnish dog owners, which means that the results are not applicable for another country.

In the data analysis part, the sum variable for dog-oriented self concept items was not excellent. The reliability was under the accepted limit, which is why the results of the last regression analysis are not reliable and cannot therefore be utilized as they are. For a deeper understanding of the research problem and gaining a proper answer for the hypotheses, the variable was decided to be included in the research, despite of the reliability issue. In order to increase the reliability of it, a bigger sample size would have provided a better result. A more careful examination of the survey questions could have also reduced this problem.

As there seemed to be some moderating role for the owner dog relationship, this study suggests developing those indicators for relationships further in future research of the

subject. This study excluded to examine whether the strength of the impact of subjective norms to intention is moderated by the owner dog-relationship. That would be an interesting subject for future studies. Repeating this study in different countries would give relevant information of cultural differences in this phenomenon. It would be interesting to understand, if the intention to purchase sustainable dog food is formed differently in other countries. According to the results, for Finnish dog owners, attitude has the biggest impact on intention - does this apply also in countries where sustainability is not such a hot topic as it seems to be amongst the Finns?

The findings of this research are only limited to the intention to purchase sustainable dog food. The tip of the ice burg is only revealed here, which is why future research should continue the topic by examining the actual purchasing. If dog owners intend to buy sustainable dog food, does it show in their purchases? And if it does not, what are the reasons for the intention-purchase gap? To deepen up the understanding of intention formation, qualitative research about the background factors of drivers would be interesting. Future research could examine, what leads to dog owners having certain attitudes towards purchasing why people feel like they have (or do not have) behavioral control over purchasing. As some proof of the moderating effect of dog-owner relationship was found also for sustainable consumption, it is a subject that is recommended to study more in depth in the future. This research also encourages to broaden up the subject from dog owners to other contexts, for example parents buying commodities for their children.



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## APPENDICES

### Appendix A. Measured statements

<b>1</b>	<b>Prevent environmental pollution</b>
<b>2</b>	<b>Protect the environment</b>
<b>3</b>	<b>Respect nature</b>
<b>4</b>	<b>Be in unity with nature</b>
<b>5</b>	<b>Equal opportunities</b>
<b>6</b>	<b>Take care of those who are worse off</b>
<b>7</b>	<b>Every person is treated justly</b>
<b>8</b>	<b>No war or conflict</b>
<b>9</b>	<b>Helpful to others</b>
<b>10</b>	<b>Control over others actions</b>
<b>11</b>	<b>Authority over others</b>
<b>12</b>	<b>Be influential</b>
<i>13</i>	<i>Money and possessions</i>
<b>14</b>	<b>Choosing a sustainable option: bad/good</b>
<b>15</b>	<b>Choosing a sustainable option: worthless/valuable</b>
<b>16</b>	<b>Choosing a sustainable option: harmful/beneficial</b>
<b>17</b>	<b>Choosing a sustainable option: meaningless/meaningfull</b>
<i>18</i>	<i>Most people important to me think I should/should not choose a sustainable option</i>
<b>19</b>	<b>Expected to choose a sustainable option: not likely/likely</b>
<i>20</i>	<i>Those whose opinions I value support that I choose a sustainable option: no/yes</i>
<b>21</b>	<b>Most people important to me choose a sustainable option: untrue/true</b>
<b>22</b>	<b>Those whose opinions I value choose a sustainable option: no/yes</b>
<i>23</i>	<i>Many people like me choose a sustainable option: unlikely/likely</i>
<i>24</i>	<i>Choosing a sustainable option would be: impossible/possible</i>
<b>25</b>	<b>If I wanted, I could choose a sustainable option: false/true</b>
<i>26</i>	<i>I believe I can impact on if I chose a sustainable option: can not/can</i>
<b>27</b>	<b>It is up to me whether I choose a sustainable option: disagree/agree</b>



<b>28</b>	<b>I will choose a sustainable option</b>
<b>29</b>	<b>I try to choose a sustainable option</b>
<b>30</b>	<b>I plan to choose a sustainable option</b>
<b>31</b>	<b>My dog is my best friend</b>
32	<i>Time with dog prevents spending time with people</i>
<b>33</b>	<b>Better relationships with other people because of my dogs</b>
<b>34</b>	<b>No relationship with someone who does not accept my dog</b>
<b>35</b>	<b>My dog is an extension of myself</b>
<b>36</b>	<b>Dogs more as humans than wildlife</b>
37	<i>I can communicate with my dog</i>
38	<i>My dog is part of my family</i>
<b>39</b>	<b>My dog is like my own child to me</b>
40	<i>Learn from my dogs</i>
41	<i>Same responsibilities as a parent</i>

#### Appendix D. Survey questions

##### 1. Sukupuoli:

- a. Nainen
- b. Mies
- c. Muu
- d. En halua kertoa

##### 2. Ikä:

- a. Alle 20
- b. 21-30
- c. 31-40
- d. 41-50
- e. 51-60
- f. yli 60

##### 3. Korkein koulutusaste

- a. peruskoulu

- b. toisen asteen koulu
- c. alempi korkeakoulu
- d. ylempi korkeakoulu

4. Kuinka monta koiraa omistat?

- a. 1
- b. 2
- c. 3
- d. Enemmän kuin 4

5. Millaista ruokaa koirasi syö pääsääntöisesti?

- a. Raakaruokaa
- b. Kotiruokaa
- c. Kuivaruokaa
- d. Märkäruokaa

6. Oletko päävastuussa koiranruoan ostamisesta taloudessasi?

- a. Kyllä
- b. En

7. Minulle on tärkeää (asteikolla 1-5)

- a. Estää ympäristön saastuminen
- b. Suojella ympäristöä
- c. Arvostaa luontoa
- d. Olla yhtä luonnon kanssa
- e. Että jokaisella henkilöllä on yhtäläiset mahdollisuudet
- f. Huolehtia huonommassa asemassa olevista
- g. Että kaikkia kohdellaan oikeudenmukaisesti
- h. Että ei ole sotaa tai konflikteja
- i. Olla avulias muita kohtaan
- j. Että voin hallita muiden tekoja
- k. Että minulla on valta toisia kohtaan

- l. Olla vaikutusvaltainen
  - m. Että minulla on rahaa ja omaisuutta
- 
8. Ympäristöystävällisen vaihtoehdon valitseminen seuraavalla kerralla, kun ostan koiralleni ruokaa, on mielestäni (asteikolla 1-7)
    - a. Huono asia – Hyvä asia
    - b. Turhaa – Tärkeää
    - c. Haitallista – Hyödyllistä
    - d. Merkityksetöntä – Merkityksellistä
  9. Useimmat minulle tärkeät ihmiset ovat sitä mieltä, että kun ostan koiralleni ruokaa, minun (asteikolla 1-7)
    - a. Pitäisi – Ei pitäisi valita ympäristöystävällinen vaihtoehto
  10. Kun ostan seuraavan kerran ruokaa koiralleni, minun odotetaan valitsevan ympäristöystävällinen vaihtoehto (asteikolla 1-7)
    - a. Epätodennäköistä – todennäköistä
  11. Ne ihmiset elämässäni, joiden mielipiteitä arvostan (asteikolla 1-7)
    - a. Eivät kannata – kannattavat, että valitsen ympäristöystävällisen vaihtoehdon ostaessani seuraavan kerran ruokaa koiralleni
  12. Useimmat minulle tärkeät ihmiset valitsevat ympäristöystävällisen vaihtoehdon kun he ostavat ruokaa koiralleen (asteikolla 1-7)
    - a. Eivät valitse – valitsevat
  13. Ne ihmiset, joiden mielipiteitä arvostan (asteikolla 1-7)
    - a. Eivät valitse - valitsevat ympäristöystävällisen vaihtoehdon ostaessaan ruokaa koiralleen
  14. Monet minun kaltaiset ihmiset valitsevat ympäristöystävällisen vaihtoehdon ostaessaan ruokaa koiralleen (asteikolla 1-7)
    - a. todennäköisesti eivät - todennäköisesti valitsevat

15. Minulle ympäristöystävällisen vaihtoehdon valitseminen seuraavan kerran ostaessani ruokaa koiralleni olisi (asteikolla 1-7)
- a. mahdotonta – mahdollista
16. Tiedän, että halutessani voisin valita ympäristöystävällisen vaihtoehdon seuraavan kerran kun ostan ruokaa koiralleni (asteikolla 1-7)
- a. en voisi valita – voisin valita
17. Uskon pystyväni vaikuttamaan ympäristöystävällisen vaihtoehdon valitsemiseen seuraavalla kerralla, kun ostan ruokaa koiralleni (asteikolla 1-7)
- a. en pysty vaikuttamaan ollenkaan - pystyn vaikuttamaan täysin
18. On enimmäkseen minusta kiinni, valitsenko ympäristöystävällisen vaihtoehdon seuraavan kerran, kun ostan ruokaa koiralleni (asteikolla 1-7)
- a. täysin eri mieltä - täysin samaa mieltä
19. Aion valita ympäristöystävällisen vaihtoehdon, kun seuraavan kerran ostan ruokaa koiralleni
- a. hyvin epätodennäköistä - erittäin todennäköistä (asteikolla 1-7)
20. Yritän valita ympäristöystävällisen vaihtoehdon, kun seuraavan kerran ostan ruokaa koiralleni
- a. hyvin epätodennäköistä - erittäin todennäköistä (asteikolla 1-7)
21. Suunnittelen valitsevani ympäristöystävällisen vaihtoehdon seuraavalla kerralla, kun ostan ruokaa koiralleni (asteikolla 1-7)
- a. hyvin epätodennäköistä - erittäin todennäköistä
22. Oletko samaa mieltä seuraavien väittämien kanssa? (asteikolla: täysin eri mieltä, joksikin eri mieltä, ei samaa eikä eri mieltä, jonksikin samaa mieltä, täysin samaa mieltä)
- a. Koirani on paras ystäväni

- b. Koirani kanssa viettämäni aika estää minua viettämästä aikaa muiden ihmisten kanssa
- c. Koirani on/ovat auttaneet minua kehittämään parempia ihmissuhteita muiden ihmisten kanssa
- d. En ole valmis luomaan ihmissuhdetta sellaisen henkilön kanssa, joka ei hyväksy koiraani
  
- e. Koirani on jatkeeni itselleni
- f. Näen koirat enemmän ihmisinä kuin villieläimiä
- g. Minusta tuntuu, että voin kommunikoida koirieni kanssa
- h. Koirani on osa perhettäni
- i. Koirani on minulle kuin oma lapsi
- j. Opin paljon koiriltani
- k. Minulla on samat vanhemman velvollisuudet, kun huolehdin koirastani