LAPPEENRANTA UNIVERSITY OF TECHNOLOGY
School of Business and Management
Strategy, Innovation and Sustainability (MSIS)

Iiris Ikonen

THE ROLE OF ECO-LABELS IN SUSTAINABLE FOOD CONSUMPTION

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1st examiner: Kaisu Puumalainen
2nd examiner: Anni Tuppura

ABSTRACT

Author	Iiris Ikonen
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The aim of this qualitative research is to find how significant eco-labels are in sustainable food consumption and which attributes determine their use and importance in the buying decision of food products. The purpose is to understand what factors stimulate consumers toward sustainable consumption and when consumers consult the labels to make sustainable buying decisions.

The research was implemented in Lappeenranta, Finland, in the autumn of 2017 and the beginning of 2018. Primary data consisting of 91 semi-structured interviews was used for the study.

The results indicate that on a general level, consumer involvement both regarding food products and ethical aspect of food is high. Ethical involvement is higher among the highly educated and grows with age. Knowledge about food's ecological and ethical implications increases perceived consumer effectiveness and ethical involvement, and the significance of the eco-label in buying decision. The rate of paying attention to eco-label is high, and roughly half of the buyers base their product choice on the presence of the label. The most familiar labels to the sample were the Finnish organic label and the fair trade label. The awareness of eco-labels grows with ethical involvement.

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Tämän laadullisen tutkimuksen tarkoitus on selvittää, kuinka tärkeässä asemassa ekomerkit ovat kestävässä ruuan kulutuksessa, ja mitkä tekijät määrittävät niiden käyttöä ja merkitystä kestävien ruuanostopäätösten tekemisessä. Tarkoitus on ymmärtää mitkä attribuutit kannustavat kuluttajia kestävää kulutusta kohti ja milloin kuluttajat käyttävät ekomerkkejä apuna tehdäkseen kestäviä ostopäätöksiä.

Tutkimus toteutettiin Lappeenrannassa, Suomessa, syksyllä 2017 ja vuoden 2018 alkupuolella. Tutkimukseen käytettiin primaarista aineistoa, joka koostui 91 semistrukturoidusta haastattelusta.

Tulokset osoittavat, että yleisellä tasolla kuluttajat ovat osallisia (involved) ruokatuotteiden ja niiden eettiseen näkökulman suhteen. Eettinen osallisuus on korkeampaa korkeasti koulutettujen keskuudessa, ja kasvaa iän myötä. Tieto ruuan ekologisista ja eettisistä vaikutuksista kasvattaa miellettyä kuluttajavaikuttavuutta, ja ekomerkin merkitystä ostopäätöksessä. Ekomerkin huomioimisaste on korkea, ja noin puolet kuluttajista perustavat ostopäätöksensä ekomerkin löytymiseen tuotteesta. Tutuimmat merkit näytteelle olivat suomalainen luomumerkki ja reilun kaupan merkki. Tietoisuus ekomerkeistä kasvaa eettisen osallisuuden myötä.

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List of Abbreviations

CH4 – methane

CIA – consumer instrumentality awareness

CO2 – carbon dioxide

FRL – Food related lifestyles LCA – life cycle analysis

GHG – greenhouse gas

GMO – genetically manipulated organism

LOHAS – lifestyle of health and sustainability

N20 – nitrous oxide

PCE – Perceived consumer effectiveness

RCB – Responsible consumer behaviour

SOM – soil organic matter

1 INTRODUCTION

1.1 Background of the study

Eco-labels, eco-labelling and their relationship to customers have received a lot of attention from researchers over the past decade – during the past five years even more so, as environmental sustainability and the threats posed by climate change have been a serious topic in politics, business and the media. The impact of food choices on the environment and climate change specifically have been raised as a global issue. This indicates the significance of ecological products and ecological product choices have in today's world.

The purpose of eco-labelling schemes is to stimulate practices that are environmentally sustainable (UNEP 2005, 4), provide information on a product's environmental performance and thereby facilitate ecological consumer behaviour (Gallastegui 2002, 316). In the context of food products, the previous researches have tried to determine the buyer group characteristics of those buying labelled products (Furlow & Knott 2009), examine the buyer attitudes comparing eco-labelled and otherwise labelled products and their willingness to pay (Sirieix et al. 2013; Tait et al. 2011; Loureiro et al. 2002), buyers' attitudes toward products that are labelled both eco-friendly and genetically modified (Sörqvist 2016), or how the multitude of eco-labels affects the consumers (Brécard 2014). There have been studies about the relationship between eco-labels and customer trust (Atkinson & Rosenthal 2014), as well as the reliability of eco-label information (Van Amstel et al. 2008). While attitude-behaviour relationship regarding eco-labelled products has been studied a lot, their impact as a facilitator and motivator of green purchasing choices has received less attention.

The topic of eco-labels or their impact in general has not received much attention in the Finnish academia. However, sustainability is a pressing matter among political field and environmental organisations in Finland. As eco-labels are an instrument meant to improve sustainability, more should be known about how efficient they are in encouraging sustainable buying decisions, and consumers general relationship with eco-labels and green consumer behaviour, as well as the connection between the two.

1.2 Research gap and research questions

The objective of the study is to examine which factors impact the importance of the eco-label in buying decision, and what is the eco-labels' role in sustainable buying behaviour. The research questions are stated as follows:

RQ1. What is consumer perception of sustainable buying behaviour regarding food products?
RQ2. What is consumer' relationship with eco-labels on food products?
RQ3. Which factors contribute to the use of eco-labels in buying decision?

This is a qualitative research, and the data will be collected through observation and semi-structured interviews. The buyers of one of the chosen three eco-labelled products (bananas, eggs, wine) will be the target sample.

1.3 Scope of the study

The data will be collected in Lappeenranta, Finland, and it will consist of Finnish consumers only. The products that will be examined will be conventional vs. organic-labelled eggs, conventional vs. fair trade or organic wine, conventional vs. organic fair trade bananas. The eco-labels considered are Type I labels, meaning certified by a third party organisation, according to ISO 14020 (UNEP 2000). The Finnish organic label, which is present in the organic eggs, is not used outside of Finland. Therefore, due to the target sample, the place of the interviews and the selected products, the results are limited to Finland and the selected products under scrutiny only.

1.4 Structure of the thesis

The second chapter of this paper, Literature review, is built based on academic literature and one interview with specialist of a packaging labels. The literature review will cover three main topics: sustainable food, eco-labelling, and green consumer behaviour. The third chapter, Model of eco-label use in buying decision, combines the findings of the literature review to build a model of eco-label use in buying decisions.

The fourth chapter, Research methodology, will lay down the methodology of the research, including research approach, design of the semi-structured interview, sampling method and data collection, generalisability of the sample, and lastly, reliability and validity of the study.

The fifth chapter, Results, will discuss the results, which test the model built in chapter three and additional analyses based on observations during the data collection. Chapter six, Discussion, discusses the results and reflects them to theory to find correlations. It suggests the theoretical contribution, limitations and implications for further studies. The final chapter, chapter seven, Conclusions, will conclude the findings and answer the research questions, suggest theoretical contribution and lastly explain limitations of the study and implications for future research.

2 ECO-LABELS IN SUSTAINABLE FOOD CONSUMPTION

This chapter consist of the results of the literature review on two main topics: sustainable food, eco-labelling and sustainable consumer, each in its own sub-chapter. [1]

2.1 Sustainable food consumption

In the following chapters I will look into the projected growing food demand of the world, the environmental burdens caused by the global food system, and the reasons why it is vital to shift toward more sustainable practices throughout the food value chain. I will also find literature to define a sustainable diet and sustainable food consumption habits in general.

2.1.1 Environmental impacts of food

Human health, livelihood and lifestyles of today's and future generations will be influenced by environmental problems (Lea 2005, 21). The environment is affected by food production, packaging, and distribution, combined with marketing systems and consumers' food choices (Jones 2002, 560-561; Kirchmann & Thorvaldsson 2000, 145-157; Lea 2005, 21). Actions causing greenhouse gas emissions are the use of fossil fuel in agriculture and transportation, the production of fertiliser, the digestive system of livestock, and the use of refrigerants in cold storage facilities (Carlsson-Kanyama 1998, 278). The production, preservation and distribution of food use a significant amount of energy, adding to the total CO2 emissions. As the food industry is one of the largest industrial sectors in the world, it is a significant user of energy, and due to the immense energy use, greenhouse gas emissions have escalated significantly. Global warming caused by this is the most critical problem that the humankind is currently confronted with. (Roy et al. 2009, 2) Reported environmental issues globally include salinity, pollution, global warming, loss of natural habitat and biodiversity, clear-cutting of forests, exhaustion of natural resources, and deteriorated quality of air, water and soil. (Lea 2005, 21)

[1] The literature review was conducted by searching academic journal publications found on SCOPUS, EBSCO, Emerald journals, Springer Link or Science Direct, through the LUT FINNA search engine. Also some articles published by civic organisations and governmental publications were reviewed. Publications written in English or Finnish, published between 1972 and 2017 were included in the search, with the emphasis on publications from after the year 2000.

Conventional farming is associated with environmental issues such as water use, desertification, deforestation and emission of greenhouse gases including methane from ruminant animals (Lea 2005, 21), contamination of water and terrestrial habitats and groundwater from farming nutrients, and pesticides building up in the environment (Tilman et al. 2002, 672; Kirchmann & Thorvaldsson 2000, 147-149). Agriculture intensification causes landscape composition to become homogenous, and biodiversity to deteriorate drastically. These changes weaken the functioning of natural pest control. Natural terrain protects a broad variety of natural organisms that function as pest-control in agriculture crops. (Gomiero et al. 2011, 116)

Food distribution is another significant factor that influences the environment. The distance a food product travels before reaching the consumer, or 'food miles', has grown over the past decades as the food supply chain has become longer. (Lea 2005, 22) Enormous amounts of energy are used to transport food. Purchasing imported products has been recorded to cause carbon dioxide emissions multiple times higher than purchasing locally grown produce (Jones 2002, 569). The growth of food miles is caused by a reduced importance of food self-sufficiency within countries, the capability of buying cheaper foods from overseas, and the requirement of fresh produce being available round the year (Lea 2005, 22).

Global demand of crops is projected to double by 2050 (Tilman et al. 2002, 671). The doubling of crop demand will come from the projected 2.4-fold growth in per capita real income and from increase in proportion of (largely grain-fed) meat (Tilman et al. 2002, 671), dairy, fish and processed food in the diet, related to higher income (Godfray et al. 2010, 812; Tilman et al. 2002, 671). As the world population and its collective demand for food grows, food producers' competition over land, water and energy is intensifying, and it is becoming undeniable that the damaging effects of food production on the nature must be contained (Godfray et al. 2010, 812). Foley et al. (2005) summarise the current situation in saying that "modern agricultural land-use practices may be trading short-term increases in food-production for long-term losses in ecosystem services" (Foley et al. 2005, 570-571).

2.1.2 Defining a sustainable diet

Although the food industry and the production stage in a food product's ecological footprint are significant, and therefore play an important part in the ecological impact of food, ultimately the consumer is in a decisive role when it comes to sustainable practices. Through pursuing environmentally sustainable diet people can regulate their ecological footprint, and simultaneously

support either sustainable or unsustainable food producing practices. There are many aspects and attributes that must be taken into account when seeking to make a sustainable buying decision. A sustainable diet implies a low environmental impact, sufficient nutritional value, cultural acceptance, inexpensiveness, and economic development (Burlingame & Dernini 2012, 294-296).

Life cycle assessment (LCA) is an objective, holistic tool for evaluating the environmental impact of a product, process or activity, generated during its complete life cycle (Guinée et al. 2002, 19; Roy et al. 2009, 2; Baroni 2007, 280). It recognises two types of environmental effects, which are use of resources (energy and raw material) such as land or fossil fuels, and release of waste or pollutants such as methane or ammonia into the environment (Guinée et al. 2002, 19; Baroni 2007, 280). Emission of pollutants influences impact categories, including climate change and ecosystem acidification and freshwater eutrophication, and eco-toxicity to human or land. The LCA associates the ecological impact to a functional unit, which is a quantitatively indicated main purpose of a production system. (de Vries & de Boer 2010, 2) In LCA studies of agricultural products, functional units are expressed, for example, as kg of grain produced, or kg of meat produced (de Boer 2003, 70-71). The LCA's purpose is also to increase environmental consciousness of the legislative bodies, to aid them in the informed development of agricultural and industrial food production system (Roy et al. 2009, 2).

There have been several LCA studies regarding the environmental effect of foods and diets (e.g. Jungbluth et al. 2000; de Vries & de Boer 2010; Roy et al. 2009; Hallström et al. 2015; Tukker & Jansen 2006; Baroni et al. 2007; Masset et al. 2014). These studies have resulted in largely uniform implications when it comes to environmental impacts of different dietary patterns. The impacts of agricultural production stage are dominating the overall environmental impact of meat, which is why some of the LCA studies on meat production effects only focus on this phase of the life cycle (e.g. Jungbluth et al. 2000; de Vries & de Boer 2010; Roy et al. 2009). In terms of land use, energy efficiency and effect on climate change, production of meat showed the highest environmental impact**,** grazing (ruminant) animals indicating in general the highest impact, followed by pork and poultry (monogastric meat). (de Vries & de Boer 2010, 5-8; Baroni et al. 2007, 282-285; Hallström et al. 2015, 6-7; Jungbluth et al. 2000, 137-138; Masset et al. 2014, 864-868; Roy et al. 2009, 3-4) Ruminant meat caused the highest GHG emissions and acidification effect, while pork, poultry and eggs gave the highest eutrophication indicator. Starchy foods, fruits and vegetables scored lowest values on all three environmental indicators. They found strong evidence that acidification and

eutrophication were correlated both with each other and with GHG emissions. (Masset et al. 2014, 864)

The poor environmental efficiency or high environmental impact of beef is explained through various approaches. Cows, compared with chicken or pork, have low efficiency of converting ingested energy and nutrients that is, feed, to edible meat (Roy et al. 2009, 4; de Vries & de Boer 2010, 7). The chief contributors to climate change are the CH4 emitted from ruminant animal's digestive system and N20 emissions caused by feed production (Roy et al. 2009, 4). Additionally, when comparing production of beef, pork and chicken, the latter two produce higher number of offspring and reach sexual maturity faster, requiring less land use than beef from breeding stock (de Vries & de Boer 2010, 7).

In essence, meat products, and especially beef, have the highest environmental impact, whereas vegan and vegetarian diets have the lowest. Plant-based diets are recommended as a significantly better option than meat-based diets, while within meat-based diets, those excluding red meat are more favourable. (Godfray et al. 2010, 816; Jungbluth et al. 2000, 139; de Vries & de Boer 2010, 8-9; Hallström et al. 2015, 7; Tukker & Jansen 2006, 169-174; Baroni et al. 2007, 283, 285; Pimentel & Pimentel 2003, 662-663) This guideline is uniform with arguments that selecting foods low on the food chain is more environmentally sustainable, as they have lower energy and resource (e.g. water) demand (Pimentel et al. 1997, 104; Pimentel & Pimentel 2003, 661-663). Hallström et al. (2015) state that shifting from animal products to plant-based food has the potential to reduce the diet's land demand by up to sixty percent (Hallström et al. 2015, 6), and food availability can be increased by transferring crop production away from non-human-food usage, such as livestock feed and bioenergy (Foley et al. 2011, 340).

It has been documented that the environmental, nutritional and economic (inexpensiveness) indicators are strongly correlated (Masset et al. 2014, 868). In addition to preserving the nature, vegan and vegetarian diets, as they contain high proportions of grains and other vegetable goods, are healthier than diets rich in meat and dairy. This promotes these diets as an opportunity to prevent obesity and instead provide better nutrition, and to decrease hunger and malnutrition in developing countries (Baroni et al. 2007, 285; Godfray et al. 2010, 816).

Considering the less impacting post-production life cycle stages, according Jungbluth et al. (2000) pasteurisation had a high impact in the conservation stage due to the wasted agricultural production that results from the process. Other means of conservation, such as with chilled or fresh products,

displayed comparatively low impact. The product origin and the associated transportation to the selling destination are significant factors, as transportation by air causes significant amount of emissions (Jungbluth et al. 2000, 138). The effect of transportation is so significant that plant-based vegetarian meals containing exotic ingredients may result in higher emissions than those containing locally produced meat and vegetables (Carlsson-Kanyama 1998, 289).

2.1.3 Sustainable food consumption

Literature presents definitions related to sustainable consumption that sometimes differ in the extent of what they cover. Buerke's (2016) comprehensive concept of 'responsible consumer behaviour' (RCB) includes two perspectives: doing good and doing well. The societal perspective of doing good, concerns the ecological, social as well as economic results of the consumers' actions (Bansal 2002, 123), and the perspective of doing well refers to the consumers' individual obligations to fulfil their own needs both in the short and in the long term (Buerke et al. 2016, 6). Auger and Devinney's (2007) definition of 'sustainable consumption' and Doane's (2001) term 'ethical consumption' are largely similar in content and cover only the societal perspective, including an ecological and a social dimension (Auger & Devinney 2007, 362; Doane 2001, 5-6). The social dimension is related to human rights (Salonen et al. 2014, 60), benefiting people (De Pelsmacker et al. 2005b, 364), and ecological dimension to "the maintenance of the prerequisites for life", meaning conservation of environment and natural resources, as well as animal welfare (Salonen et al. 2014, 60), benefiting the natural environment (De Pelsmacker et al. 2005b, 364). Ethical consumption may indicate these benefits to environment or people either close to home or in a distant part of the world. This study will focus on the perspective of doing good (ethical consumption) including both the social and ecological (environmental) dimensions.

Food consumption has been recognised as one of the activities within a household that demand most resources and are most polluting (Vringer & Blok 1995, 895; Wackernagel & Rees 1996, 83). To make sustainable food choices, consumers must consider a variety of aspects. From the (environmental) life cycle analysis perspective, the most important aspects to take into account include avoiding products transported by air, to choose organic over conventionally farmed products, to avoid foods grown in heated greenhouses, and to minimise the consumption of meat products. (Jungbluth et al. 2000, 137-138) Social dimension of ethical consumption includes issues such as fair trade or avoidance of child-labour (De Pelsmacker 2005b, 363). The purchase of environmentally friendly and fairly traded products are the two most representative examples of ethical purchase

behaviour (De Pelsmacker et al. 2005a, 512-513). Gilg et al.'s (2005) listing of sustainable food consumption practices include buying locally produced, organic, and fairly traded products, with less packaging (Gilg et al. 2005, 485-486).

Drawing together the evidence and implications of the reviewed literature, we present a simplified guideline to sustainable food consumption and diet. This guideline suggests a diet that is plant-based, preferring organic and open-air farmed, locally grown and fairly traded products, that are either sold fresh or conserved by cooling (such as frozen goods), and avoiding meat, especially ruminant meat, products that have been heavily processed, grown in heated greenhouses or products that travel a long way, especially those transported by air.

2.2 Eco-labelling

In this chapter, I will look at the literature findings concerning how ecolabels work and what their purpose is, and take a look at the subtypes of eco-labels. I will also review eco-labels' claims and the reliability of these claims, as well as customer attitudes toward eco-labels. Lastly, I will briefly view food eco-labels.

2.2.1 Eco-label objective and functionality

According to Golden's (2010) definition of eco-labelling, when a product meets a broad range of criteria or standards related to environmental efficiency, it can be awarded and identified with an eco-label. The requirement of fulfilling detailed environmental conditions is what sets eco-labels apart from green symbols or claims. Governments, manufacturers, as well as third party organisations establish eco-labels as environmental certifications, and due to the variety of products in the market, there is a great number of different kinds of environmental performance labels and assertions. (Golden 2010, 14)

An eco-label functions as a certification mark, with the purpose of increasing consumer awareness concerning the environmental effects of products (Schumacher 2010, 2203), to signal consumers about a product's or a service's environmental characteristics (Atkinson & Rosenthal 2014, 34; Schumacher 2010, 2203), while confirming the reliability of these claims (Atkinson & Rosenthal 2014, 34).

Eco-labelling is a voluntary, globally exercised practice (Golden 2010, 14). This means that, instead of governments imposing laws and regulations to dictate the acceptable processes and production methods, the labels and certifications serve the purpose of informing the customers on the methods in use, so the customers can make informed buying decision (UNEP & IISD 2005, 61; Atkinson & Rosenthal 2014, 34). Eco-label information is product specific, while environmental management certification schemes tell something about a producer company or a part of it (UNEP & IISD 2005, 61).

The "ultimate objective" of eco-labels is to progress environmental performance. It targets the related purposes such as low consumer awareness, insufficient market segmentation, insufficient financial initiatives or insufficient rewards for innovators (UNEP 2005, 4). By these means, eco-label advances the adoption of environmentally sustainable production methods and technologies (Schumacher 2010, 2203). According to Teisl et al. (2008) the way the information is enclosed and the capability of consumer to assimilate and act on it tells about the eco-label's effectiveness (Teisl et al. 2008, 144). The correct amount of information on a label is debatable. A consumer should be able to tell the difference between competing products by referring to their environmental performance attributes. While a high information content can improve the customer trust, too much information may cause confusion (Teisl 2003, 672). As different labels emphasise different facets of sustainable manufacturing, consumers become confused over how to distinguish a better option over the other, for instance between fair trade and organic (Pattie 2001, 189).

There are two classes of eco-labels: single-attribute and multi-attribute standards. Single-attribute standards are only concerned with one environmental attribute, such as energy efficiency. These labels only show one dimension of how ecological a product is, as comparing two products that have different single-attribute labels, for instance fair trade and organic, is difficult. Due to only including one facet of environmental performance, their information is overly simplified. However, that makes them easy for consumers to understand, and they can be consistently applied to products across industries. Therefore, retailers prefer single-attribute labels to multi-attribute labels. Conversely, multi-attribute labels measure a variety of environmental effects of a product, usually throughout the phases of its lifecycle. Multi-attribute labels are commonly not as intricate as a full lifecycle analysis; however, they are considerably more comprehensive in terms of data than single-attribute labels. Both types of labels are important actors in product certification. (Golden 2010, 13)

Engels et al. (2010, 47-48) developed a standardised method to the labelling of sustainable food products. Their design was built to be understandable to consumers and to carry scientific credibility, and it assimilated various sustainability aspects (multi-attribute). They utilised Jungbluth's (2000) approach of modular LCA and expanded it to integrate (non-environmental) social and economic standards as well. The results of their surveys with consumers and experts indicate that this type of a label could 'reach a high level of acceptance'.

In Finland the law concerning packaging labels is strict, and packaging labels that are not true are not allowed. The messages of the packaging cannot mislead consumers; if the package is misleading, Finnish food safety authority Evira will intervene and give the company feedback. The products and their attributes must be true to their definitions. A company that misuses the packaging risks its reputation, as the public attention upon getting caught gives a bad image. Therefore, the packaging labels in Finland are highly reliable (Koivula, H. 2017)

2.2.2 ISO label types I-III

The International Organization for Standardization (ISO) has recognised three categories of voluntary product labels: Type I, II, and III. Type I refers to "product environmental labels schemes" certified by a third-party. These schemes involve granting the use of a logo associated with certified goods. The term 'eco-label' in literature often refers to this type of label, though in this paper it includes all three label types, focusing on types I and II. Type II labels do not involve a third-party, but are based on manufacturers', importers', distributors' or retailers' self-declaration. These claims can involve the use of natural ingredients or biodegradability, for instance. Type III labels offer measurable life cycle environmental data. In addition to and outside of ISO classifications there are labels that resemble ISO type I; these labels are focused on a specific product group. (Horne 2009, 177) For instance, Marine Stewardship Council's MSC label and fishery certification program is about sustainable fishing practices. Table 1 presents these voluntary label schemes, providing a description and a few examples. (Horne 2009, 177)

There are also ecolabels that are not voluntary. For instance, by Commission Regulation (2010/271/EC), the Organic logo of the EU (green leaf) is a label that is a compulsory mark on the packaging of all products that have been organically farmed within the EU, but is voluntary to products imported from the outside of the EU. This paper examines the types I and II, and considers type I-like labels as similar.

Table 1 Voluntary label schemes (based on Golden 2010, 14; Horne 2009, 177)

Label type	Description	Example
ISO type I	A third-party program where an independent body sets multiple criteria and controls them through a certification of auditing process. Products within the same category are compared with one another, and label is awarded to those that have comparably better environmental performance through their life cycle.	EU Ecolabel (Flower), Nordic Swan
ISO type II	Self-affirmed environmental claims made about products by their producers, importers or distributors. Involves no independent verification or use of pre-determined and approved criteria for reference.	CFC-free, Organic content, Biodegradable, Natural ingredients
ISO type III	Labels provide a table of a product's quantified environmental impacts, following pre-determined categories of parameters set by a qualified third party (industrial sector or an independent body) and based on life cycle assessment (LCA), and verified by that or another qualified third party.	Nutrition Panel on Food
ISO type I-like	Environmental certification programs and labels targeted at a specific product group, managed and awarded by non-profit organisations. Emphasis on a specific product category.	MSC, FSC

2.3 Sustainable consumer

The first of the following three sections I will build a basis for what sustainable consumption is, and in the second section I will talk about three major segments of sustainable consumers: the green, the potential green, and the non-green segment. The third section will dive into the characteristics of a sustainable consumer, in terms of socio-demographic, psychological and personal values of a consumer.

2.3.1 Sustainable consumer behaviour

Consumer behaviour strives for fulfilling a consumer's needs. The sustainability concept implies fulfilling the consumer needs in a sustainable way; current consumption should meet the current needs without damage to the needs of future generations. (Buerke et al. 2016, 4) Consequently, particular consumer behaviours, such as buying products that damage the environment, (e.g. Thøgersen 2014), or overconsumption (Sheth et al. 2011, 25), have been defined unsustainable as they are irresponsible from the sustainability point of view. As explained in chapter 2.1.3, responsible consumption includes the perspectives of doing good and doing well. The focus in this study is the (ethical) perspective of doing good, which includes a social dimension (human wellbeing), and an ecological dimension (animal welfare and wellbeing of the natural environment).

Undertaking ethical consumption behaviour ('doing good') is a means by which consumers can communicate their feelings of responsibility towards society and their recognition of socially responsible companies and products (De Pelsmacker et al. 2005a, 512). Ethical consumption is an individual consumer's freely made choice to buy products associated with a specific ethical issue (Doane 2001, 5-6) and make efficient energy and material choices (Salonen 2014, 60), or refuse products with negative features (De Pelsmacker et al. 2005b, 364). In practice, this can translate into favouring products with an eco-label (Salonen 2013, 2049). According to a questionnaire survey in the UK by Wheale and Hinton (2007), amid green consumer population, ethical drivers have an importance hierarchy in the buying decision-making process, with environment at the place of the most important ethical driver, followed by human rights and animal welfare issue (Wheale & Hinton 2007, 313).

The consumers are increasingly aware of the link between their buying activity and the associated ethical issue (Shaw & Shiu 2002; Shaw & Newholm 2002; Shaw et al. 2005). The intensity of association with ethical issues varies between product groups, with food products having strongest and 'brown goods' such as household electrical entertainment appliances having the least strong linkage (Wheale & Hinton 2007, 23). For the conscious consumer, environmental performance is an essential attribute, but on its own not sufficient to make a purchase, as the product needs to also meet the functional requirements; both conditions need to be met. (De Pelsmacker et al. 2005a, 512-513)

As stated by Verain et al. (2012), in the more prosperous societies especially, consumers' food comparisons are very intricate (Verain et al. 2012, 124). In selecting foods, the important factors

consumers consider include sensory appeal, healthiness, and price (Scheibehenne et al. 2007, 583-584; Steptoe et al. 1995, 279). According to Tobler et al. (2011), environmental friendliness does not seem a significant factor in food choice of consumers in general. Ecological food patterns do, however, in some cases involve other benefits not related to environment. Seasonal and locally grown fruits and vegetables may appear fresher, for example, as they can be harvested when ripe and do not require a long transport. (Tobler et al. 2011, 675) It has been found that consumers find regionally grown food to be of better quality, especially in terms of freshness and taste (Chambers et al. 2007, 211). Health and ethical concerns can be motivators to give up meat consumption (Beardsworth & Keil 1991, 120-123; Jabs et al. 1998, 198-199). Ecological food consumption behaviour can thus be motivated by several factors (Tobler et al. 2011, 680; Magnusson et al. 2003, 115), and consumers favouring environmentally friendly products may completely ignore the social dimension of responsibility, and vice versa (Balderjahn et al. 2013, 551; Salonen 2010, 229–230).

2.3.2 Segments of sustainable consumers

Many studies have categorised sustainable food consumers based on the level of their responsible consumer behaviour (Verain et al. 2012; Gil et al. 2000; Chryssohoidis & Krystallis 2005; Grunert & Juhl 1995; Kihlberg & Risvik 2007; Janssen et al. 2009). Verain et al.'s (2012) review on sustainable food consumers reveals three most frequently appearing segmentations of consumers: green segment, potential green segment, and non-green segment (Verain et al. 2012, 127-129). In 2014, Salonen et al.'s (2014) and Kuudes Helsinki's (2016) studies concerning sustainable consumerism in Finland discovered eight consumer segments (Salonen et al. 2014, 67; Kuudes Helsinki 2016), some of which can be grouped into these different levels of 'greenness'. There is also a consumer segmentation type called LOHAS, short for 'lifestyle of health and sustainability', who are divided into four main levels: LOHAS heavy, LOHAS medium, LOHAS light, and not interested (Koivula, H. 2017; Korhonen et al. 2014)

The concept of food-related lifestyle (FRL), introduced by Brunsø and Grunert (1995), positions lifestyle as "the system of cognitive categories, scripts and their associations which relate a set of products to a set of values" (Verain et al. 2012, 124; Brunsø & Grunert 1995, 475). The authors built a FRL measuring tool that is applicable across cultures (Brunsø & Grunert 1995, 475) and majority of the studies in Verain et al.'s (2012) review utilized FRL variables as the foundation of segmentation (Verain et al. 2012).

The consumers within the green segment, also called ‘true greens’ or ‘committed environmentalists’, are distinguished by values in the sphere of openness to change and self-transcendence, the latter representing communal values stimulating people to transcend egoistic concerns and advance the wellbeing of others (Schwartz 1992, 42). The most noticeable individual value for these consumers was that of self-direction, concentrating on independent thought and action. Judging by these results, individual and collective values are both significant in describing the green consumer. (Verain et al. 2012, 127) This segment was more environmentally informed, thought highly of the environment, highly concerned of the environment, and showed high intent of buying ecological products (Gil et al. 2000, 211-218; Jungbluth et al. 2000, 139). Gilg et al.’s (2005) ‘committed environmentalists’ were the group that was the most frequent to consistently compost their waste and significantly more likely to regularly exercise sustainable buying activities, especially by selecting local produce and shopping at a local store. The members of this group more frequently bought organic and fairly traded goods, however they still represented a minority of people participating in these activities. (Gilg et al. 2005, 488-489; Jungbluth et al. 2000, 138-139) The LOHAS heavy segment prioritizes health and ethics, are particular about their diet. They find out about the health effects and ethics behind the products they consume and base their priorities on these attributes, and live according to that lifestyle. This segment exercises information seeking and is more aware of the requirements behind each eco-label (Koivula, H. 2017)

Some studies found that those who were most likely to purchase organic produce had positive beliefs toward organic fruits and vegetables and involvement with them (Saba & Messina 2003; Chryssohoidis & Krystallis 2005), showed more concern about environmental degradation (Grunert & Juhl 1995) compared to those less probable to buy organic food. Additionally, they were more concerned about health (Gil et al. 2000; Honkanen & Olsen 2009; Janssen et al. 2009). In Salonen et al.’s (2014) study the green segment is represented by a group called the Devoted, which covered 14% of the respondents in 2014 (Salonen et al. 2014, 73), but only 13% in 2016 (Kuudes Helsinki 2016). The LOHAS heavy segment covers roughly 10 % of all consumers (Koivula, H. 2017)

The potential green segment represents a consumer segment between green and non-green consumers. ‘Explorers’, ‘likely consumers’, and ‘occasional buyers’ are alternative names for this category. The findings of the studies reviewed by Verain et al. (2012) had highly varying descriptions to this segment. A few studies recorded preference and fairly frequent buying of organic food (Chryssohoidis & Krystallis 2005, 594; Gil et al. 2000, 214-215; Grunert & Juhl 1995, 57). Gil et al. (2000, 214-215) found these consumers to place importance on the naturalness of the food; in a study

by Chryssohoidis and Krystallis (2005, 594) these customers declared to be following a balanced and healthy diet. The level of the reported environmental knowledge varied. This segment is also very sensitive to price. Concluding these findings, beside environmental aspects, this potential green segment places importance on additional aspects such as price, health and naturalness. (Verain et al. 2012, 129) Gilg et al. (2005, 489-490) recognised two groups that could be placed in the potential green segment; these were called 'mainstream environmentalists' and 'occasional environmentalists'. Mainstream environmentalists exercised the range of green behaviours as frequently as committed environmentalists, however they had notably lower tendency to compost their waste. Contrary to them, occasional environmentalists would either rarely or never exercise sustainable buying behaviours. Most remarkably, this was the case regarding organic or fairly traded goods, as well as local purchases. (Gilg et al. 2005, 488-489) In Finland, the potential greens involve many sub-segments, most prominent of them being 'the caretakers', representing 24% of the respondents in 2014 (Salonen et al. 2014, 76), but only 15% of them in 2016 (Kuudes Helsinki 2016). The potential green segment is similar to LOHAS medium segment, which makes up 30-40 % of the consumers. This segment supports LOHAS but does not necessarily act according to this lifestyle. Instead this segment is more flexible in the matters of health and sustainability. This group probably recognises eco-labels and favours them when possible, but may not deliberately find out more about them the way LOHAS heavy consumers do. (Koivula, H. 2017)

According to Verain et al.'s (2012) review, the non-green segment is distinguished by communal values of conservation, including security, conventionality and tradition; and individual values of self-enhancement, such as power and success (Grunert & Juhl 1995, 57-58; Kihlberg & Risvik 2007, 477-479). Gil et al. (2000, 215-216) and Grunert and Juhl (1995, 57-58) found that this group showed negligible or negative appreciation towards the environment (Verain et al. 2012, 129). According to Mostafa (2009), relative to other segments, they were the least concerned and informed, and had the lowest attitudes towards green purchases (Mostafa 2009, 1033). Janssen et al. (2009) described this segment as carefree (Janssen et al. 2009, 211). These consumers thought of organic products as too costly, showed less concern for genetic modification, artificial aromas and additives, and had faith in the industry (Verain et al. 2012, 129). Gilg et al.'s (2005) non-environmentalists were the least committed group, and most of its members never participated in any of these activities. They were evidently not motivated to exercise any of the relevant behaviours. (Gilg et al.2005, 488-489) In Finland, this group was most prominently represented by a change-resistant group called the Bystanders, with 19% of the respondents in 2014 (Salonen et al. 2014), and 23% in 2016 (Kuudes Helsinki 2016).

The consumer field in Finland has seen drastic change in a few years' time. Between 2014 and 2016, a drastic change in the segments was evident, and the ultimate finding was that the consumers are roughly divided in terms of their stand on sustainable consumption. (Kuudes Helsinki 2016)

2.3.3 Characteristics of a sustainable consumer

In this section, we look into the characteristics of consumers that were most committed to sustainable purchasing behaviours. As established by several authors, a conscious or green consumer cannot be identified only based on demographic characteristics, but a closer look is required to the values they hold (De Pelsmacker et al. 2005b, 366; Gilg et al. 2005, 482) and their psychological factors (Diamantopoulos et al. 2003, 477; Dagevos 2005, 33, 38).

Socio-demographic values

The socio-demographic values that have been studied involve age, gender, level of education, income, employment status, and even social status, however the level of consistency in results between studies is not very high, and many find specific values to be of no relevance. According to the review by Verain et al. (2012) the ability of age, education and gender to portray sustainable consumer segments is unclear (Verain et al. 2012, 129), and Dagevos (2005) and Diamantopoulos et al. (2003) have also pointed out that of socio-demographic attributes are not functional indicators of environmentally conscious consumers (Dagevos 2005, 38; Diamantopoulos et al. 2003, 477), and described the connection between socio-demographic qualities and environmental awareness measures as 'relatively complex' (Diamantopoulos et al. 2003, 477).

Authors are largely unanimous in that, responsible buying behaviour is not influenced by gender (De Pelsmacker 2005b, 378; Gilg et al. 2005, 501-502; Pedrini & Ferri 2014, 134), however Roberts (1996a) and Olli et al. (2001) found females to undertake more environmentally conscious consumption behaviours (Roberts 1996a, 225; Olli et al. 2001, 200).

According to the more recent studies, age is positively affecting green consumption habits (Olli et al. 2001, 200; Gilg et al. 2005, 491; Pedrini & Ferri 2014, 134; Roberts 1996a, 225), although some studies found age to be of no relevance in the matter (Dickson 2001, 110-112). It has also been documented that young consumers express more environmental concern, but older consumers are more likely to take part in green consumer behaviour (Panzone et al. 2016, 91). De Pelsmacker et al.

(2005b) found that those most committed to ethical consumption were dominantly aged between 31 and 44 (De Pelsmacker 2005b, 379), and Pedrini and Ferri (2014) found those with higher propensity to responsible consumerism to be over 35 years of age (Pedrini & Ferri 2014, 134). Morrison and Beer (2017) found that environmental awareness is highest with customers in their 40s, 50s and 60s, and deteriorates with the oldest age groups (Morrison & Beer 2017, 97).

In various studies, it has been reported that high level of education is more often associated with responsible consumption (Maignan & Ferrell 2001, 473; Hines et al. 1987, 5; Olli et al. 2001, 185; Panzone et al. 2016, 91; Pedrini & Ferri 2014, 134). Panzone et al. (2016) explains that education activates environmental concerns, and helps them in assessing and looking for information about the environmental impacts of their options. Without proper knowledge on the environmental consequences of their choices, it is hard for consumers to undertake ethical consumption habits even if they are environmentally concerned. (Panzone et al. 2016, 91-92) In line with this notion, Grunert et al. (2014) found a strong correlation between education and level of understanding (Grunert et al. 2014, 184). De Pelsmacker et al. (2005b) found that the highly educated represented a more than proportionate part of the most ethically-committed (fair trade) consumers, but concluded that the significant difference is mainly between consumer who have only finished high-school and consumers with higher education (De Pelsmacker et al. 2005b, 379).

Dickson (2001) did not find income to be a discriminating factor (Dickson 2001, 112), however, in several studies green consumption habits were more frequent with consumers with higher income, though the relationship was often weak (Maignan & Ferrell 2001, 473; Hines et al. 1987, 5; Pedrini & Ferri 2014, 134). Those with liberal political affliction have been linked to environmental responsibility (Gilg et al. 2005, 484; Olli et al. 2001, 186). Another less noted socio-demographic value is employment status, which according to Dickson (2001, 112) is not discriminating.

Drawing together from these findings, the average profile of a responsible consumer is one with higher education, high income (Maignan & Ferrell 2001, 473; Hines et al. 1987, 5-6; Pedrini & Ferri 2014, 134; Olli et al. 2001, 185, 200; Panzone et al. 2016, 91), and over 30 years of age, but not older than 70 (Pedrini & Ferri 2014, 134; Gilg et al. 2005, 484; De Pelsmacker 2005b, 379). In contrast, the profile of a non-environmentalist, according to Gilg et al. (2005), was more likely to be male of low income and low education level, and politically passive (Gilg et al. 2005, 493).

Social and environmental values

The values people hold seem to have a considerable impact on their ethical or environmental consumption behaviour (De Pelsmacker 2005b, 366) and green behaviours can be predicted by the personal attitudes and beliefs held by the individual (Tanner & Kast 2003, 891). Values are rooted beliefs on what kind of behaviour or consequence is good or acceptable, and act as guidelines to our behaviour across situation and over time (De Pelsmacker 2005b, 366).

Social and environmental values are a relatively young topic in the research field of green consumerism. The effect of underlying values on behaviour has been explored in studies regarding environmental activities. (Gilg et al. 2005, 482) Steel's (1996) findings indicated that high degree of environmental involvement was strongly connected with values that found natural environment to be very valuable in someone's life (Steel 1996, 33-34). Buerke et al. (2017) found evidence to show that sustainability-focused value orientations are a central basis of societal and personal responsible consumer behaviour. (Buerke et al. 2017, 979-980)

The combined findings of Gilg et al. (2005), Roberts (1996a, 1996b), Chan (2001), Buerke (2017), and Fritzsche (1995) indicate that people engaging in ethical behaviour hold considerably different values from those who behave unethically, and those strongly involved in green consumption habits are more likely to have hold pro-environmental and pro-social values.

Psychological factors

Psychological factors are personal attitudes that the individual holds regarding the behaviour in question. Tanner and Kast (2003) found favouring attitudes toward environmental protection, fair trade and local production to be vital drivers of green purchases (Tanner & Kast 2003, 893). A factor called consumer instrumentality awareness (CIA) refers to the consumer's awareness of their everyday consumption habits as an instrument to the resolving of certain issues (Buerke et al. 2017, 968). The consumers with higher instrumentality awareness are more likely to take into consideration the societal and personal outcomes of their buying behaviour. (Buerke et al. 2017, 979-980). A factor closely related to CIA is perceived consumer effectiveness (PCE), which tells the degree to which an individual consumer feels that they are able to affect the environment (Gilg et al. 2005, 484). The results of studies indicate that when consumers perceive that their purchase choices will actually have an impact on the environment and affect future policy, they are likely to purchase in a more sustainable manner (Kinnear et al. 1974, 22; Tucker 1980, 335-336; Roberts 1996a, 226; Gilg et al. 2005, 494-495), while low PCE may inhibit green purchases (Diamantopoulos et al. 2003, 477-478; Vermeir & Verbeke 2006, 184).

Social responsibility refers to the degree to which an individual finds themselves morally responsible to participate (Schwepker & Cornwell 1991, 85) According to Gilg et al. (2005), when environmental matters are personalised – making them the responsibility of citizens and not only the government – and when consumers have faith in the environmental information provided, they are more inclined to be involved. (Gilg et al. 2005, 502)

Lastly, there is the interaction of the effects of price, quality and brand loyalty (Schuhwerk & Lefkoff-Haguis 1995, 52-53; Shrum et al. 1995, 80-81). Purchase priorities are likely to be significant, concerning trade-offs related to price, health, safety, buying locally and environmental friendliness (Gilg et al. 2008, 502). In summary, consumer's knowledge, PCE, CIA, and social responsibility have a positive effect on ethical purchase behaviour. The hindrances to pro-environmental consumption include perceived time barriers (Tanner & Kast 2003, 893) perceived increased inconvenience, cost or risk, or reduced product quality, involved with buying an eco-friendly product. (Grankvist & Biel 2001, 409-410)

3 MODEL OF ECO-LABEL USE IN BUYING DECISION

Eco-labels do not have an equal impact on purchasing decision across product categories (Golden 2010, 11). As discovered by Gallastegui (2002), eco-labels are of more importance for perishable, frequently used, and highly visible consumer goods (Gallastetui 2002, 320). Study by Grunert et al. (2014) documented some socio-demographic differences regarding the response to eco-labels. Women and men have an equal understanding of the labels, but women show more environmental concern and use labels more frequently. Older people do not have a high degree of understanding or use, but are more concerned. Higher education resulted in higher degrees of understanding and use of labels, but not to higher levels of concern (Grunert et al. 2014, 187).

While other studies claim that consumer perception and attitudes have a clear impact on behaviour (Ferrell & Gresham 1985; Shaw & Clarke 1999; Vitell et al. 2001), there is also strong evidence to imply that attitudes unaided are weak predictors of buyer behaviour (Cobb-Walgren et al. 1995, 27; Grunert et al. 2014, 188; Tobler et al. 2011, 681). The phenomenon of 'attitude-behaviour gap' refers to the inconsistency between attitudes and ethical purchasing behaviour (De Pelsmacker et al. 2005b, 364). The existing literature indicates that consumers are often motivated to exercise sustainable behaviour, however this motivation does not show in actual sustainable food selecting and consumption (e.g. Bray et al. 2011; Chatzidakis et al. 2007; de Boer et al. 2009; Dutra de Barcellos et al. 2011).

It is possible that differences in attitude and behaviour do not necessarily imply attitude-behaviour gap, but may be attributed to misconceptions regarding what is sustainable behaviour (Panzone et al. 2016, 92). Often the communication about the benefits of sustainable products is insufficient, so consumers are incapable of making informed decisions (Vermeir & Verbeke 2006, 174). For example, consumers buying organic meat may believe they are acting sustainably, but this kind of purchase is unsustainable, and is recorded as such in research results. (Panzone et al. 2016, 92) Insufficient knowledge may be connected to the failure in developing product-specific concerns. The findings of Tanner and Kast (2003) and Jungbluth et al. (2002) also indicate that a level of suitable knowledge is required for taking appropriate action (Tanner & Kast 2003, 893; Jungbluth et al. 2000, 139).

The purpose of an eco-label is to provide consumer with certified, reliable information regarding a product's environmental performance (Atkinson & Rosenthal 2014, 34; Schumacher 2010, 2203).

Through providing information and raising awareness (Schumacher 2010, 2203), an eco-label presents the consumer with an opportunity to consider the related ethical and environmental issues when making food choices (Grunert et al. 2014, 188). Thus, it is the eco-label's purpose to fill the knowledge gap. With the sustainability attribute, consumers must rely on the source that presents the sustainability claims, as they cannot personally evaluate the sustainability (Vermeir & Verbeke 2006, 175). Consumers only pay attention to and utilize the labels in their purchase decisions if they trust the labels, signifying the influence of the credibility of the certifying organisation (Thøgersen 2000, 305-306; Thøgersen 2002, 93). The pro-environmental attitude had a stronger positive effect on paying attention to eco-labels when the consumer believes in the label, and trust has a higher effect when the consumer holds pro-environmental attitudes. (Thøgersen 2000, 306). On the other hand, scepticism toward the ethical claims of labels may hinder the buying of eco-labelled products (Grunert et al. 2014, 188; De Pelsmacker et al. 2005b, 365).

Even if the consumer trusts the label, there is still the question of understanding. How clearly an eco-label communicates its meaning influences how well consumers understand it (Grunert et al. 2014, 187), and whether they use it (Thøgersen 2000, 305; Thøgersen 2002, 90). Understanding the label is also influenced by consumers' awareness of the labels (Grunert et al. 2014, 188).

Behavioural control means the ease or difficulty of acquiring or consuming a particular product. Even a very motivated consumer will find it hard or even impossible to buy sustainable products if they are poorly available. (Vermeir & Verbeke 2006, 175) For instance, some ethical products are mainly available in specialty shops, which may represent inconvenience and increased time-consumption if the consumers have to buy their groceries in more than one shop and/or are pressed for time. This is one of the central reasons for not buying ethical products (De Pelsmacker et al. 2005a, 517)

Behavioural control also relates to the perceived consumer effectiveness (PCE), signifying the consumer's belief in their decisions contributing to the resolution of a problem, for example in tackling social inequality or environmental issues such as waste, soil erosion or GHG emissions (Vermeir & Verbeke 2006, 175). Believing in responsible buying as a means to contribute to environmental protection influenced paying attention to eco-labels (Thøgersen 2000, 306). High PCE is vital to stimulate the consumers to convert their positive attitudes into actual buying behaviour (Roberts 1996a, 226; Lee & Holden 1999, 383)

Attitude-behaviour gap exists also in respect to attitudes and use of eco-labels. Paying attention to eco-labels is positively influenced by consumer's pro-environmental attitudes (Thøgersen 2000, 306). Issue-relevant knowledge, such as knowledge concerning eco-labels, is also important (Thøgersen et al. 2010, 1791). The use of eco-labels use is stimulated by motivation, thus the higher the apprehension about sustainability issues concerning food production, the higher the use of eco-labels; yet the effect is weak, and so the degree of use does not correspond to the (higher) level of concern. (Grunert et al. 2014, 188) General concern for sustainability issues does not automatically convert into behaviour (Grunert et al. 2014, 188; Grankvist & Biel 2001, 406), even when the information is comprehensible and available, especially as the general concern does not by default translate into product-specific concerns that could stimulate the use of eco-labels when selecting food products. Instead, more specific environmental attitudes are better at predicting behaviour (Panzone et al. 2016, 78); for instance, favouring attitudes toward environmental protection, fair trade and local production are central drivers of green purchases (Tanner & Kast 2003, 893). The overall the degree of use of eco-labels in Europe is rather limited (Grunert et al. 2014, 188). Yet, it has been documented in several studies that eco-labels drive green consumption behaviour (D'Souza et al. 2006, 168; Thøgersen 2002, 96-97; Chekima et al. 2016, 3445). For attitudes to have a significant impact on behaviour, they must be activated and easily accessible (Fazio et al. 1989, 284). As earlier mentioned, education has been projected to activate environmental concerns (Panzone et al. 2016, 91-92).

In the case of food products, the behaviour gap may have to do with the fact that the buying of food and drink causes continuous trade-offs. In making food purchasing choices, consumers are faced with product attributes such as sensory appeal, healthiness, price (Scheibehenne et al. 2007, 579; Steptoe et al. 1995, 279), brand, quantity, expiry date, nutritional values, and eco-labels, (Grunert et al. 2014, 178) as well as origin of the food. All of these attributes compete for consumer awareness, perceived importance and influence on choice behaviour. (Grunert et al. 2014, 178). As noted by Crane (2001) people commonly weigh the attributes equally in making purchasing decisions, although some consumers avoid products with unethical background (Crane 2001, 369). However, responsible consumers are more involved in the decision-making process and put more weight on the sustainability attributes (Thøgersen et al. 2012, 191, 194). Ethical products are priced higher, which often is not accounted for in the measuring of attitudes and intentions toward ethical products (De Pelsmacker et al. 2005b, 365). The significance of the price aspect might be perceived differently depending on the economic position of the consumer, and so the absolute price variance between an eco-labelled and a conventional product may be more significant (Grankvist & Biel 2001, 409).

Involvement or perceived personal importance is a definite type if motivation. Low involvement causes habitual behaviour because of satisfied needs (Jager et al. 2000, 363). Habits guide the repeat purchase of daily products and where the selection process takes place largely through automatic cognition (Grankvist & Biel 2007, 405; Beattie & Sale 2011, 214). According to the definition of Verplanken and Aarts (1999), "Habits are learned sequences of acts that have become automatic responses to specific cues, and are functional in obtaining certain goals or end states" (Verplanken & Aarts 1999, 104). Learning a new behaviour requires deliberating about which product to choose, performing a new behaviour, and making it an instinctive response to definite cues, that are decisive in the situation (Grankvist & Biel 2001, 405). Whether the consumer buys eco-labelled or conventional products, this behaviour can be habitual. Indeed, according to Thøgersen et al. (2012) consumers selecting organic products did not spend any more time on product choice than those selecting conventional products (Thøgersen et al. 2012, 194), as they, too, want to spend as little effort and time as possible at the point of purchase (Hoyer 1984, 826-827). They had established routines to buying these products (Thøgersen et al. 2012, 194), and had learned to recognise the sustainable alternative easily, for example by taking notice of the eco-label (Thøgersen 2002, 87), and used "goal-directed, simple and efficient choice heuristics." (Thøgersen et al. 2012, 194)

Involvement is triggered when a product, service, or promotional message is viewed as influential in reaching significant needs, goals and values (Vermeir & Verbeke 2006, 174). As an eco-label functions as a promotional message that communicates ethical values (Thøgersen 2002, 85), it might activate consumer involvement. When the consumer is highly involved, due to an unsatisfied central personal need (Jager et al. 2000, 363), consumers are motivated to be more engaged in information search (Beharrel & Dennison 1995, 24) and more intensely analysing in their decision-making process (Jager et al. 2000, 363). The level of involvement affects behavioural intentions and results. Behavioural result, such as quantity or type of choice criteria, can mean for instance brand-loyalty or brand-switching behaviour. (Beharrel & Dennison 1995, 24) Consumers that buy ecological everyday products have been documented to be more involved in the purchase because of the "green" issue, compared to consumers choosing conventional products and to deliberate more (although not much more) than buyers of conventional alternatives when selecting the product, at least when buying a product for the first time (Thøgersen et al. 2012, 191-192). The highly involved consumers are also more willing to choose sustainable products (Vermeir & Verbeke 2006, 184). Therefore, high level of involvement can be linked to consulting the eco-label as an information source.

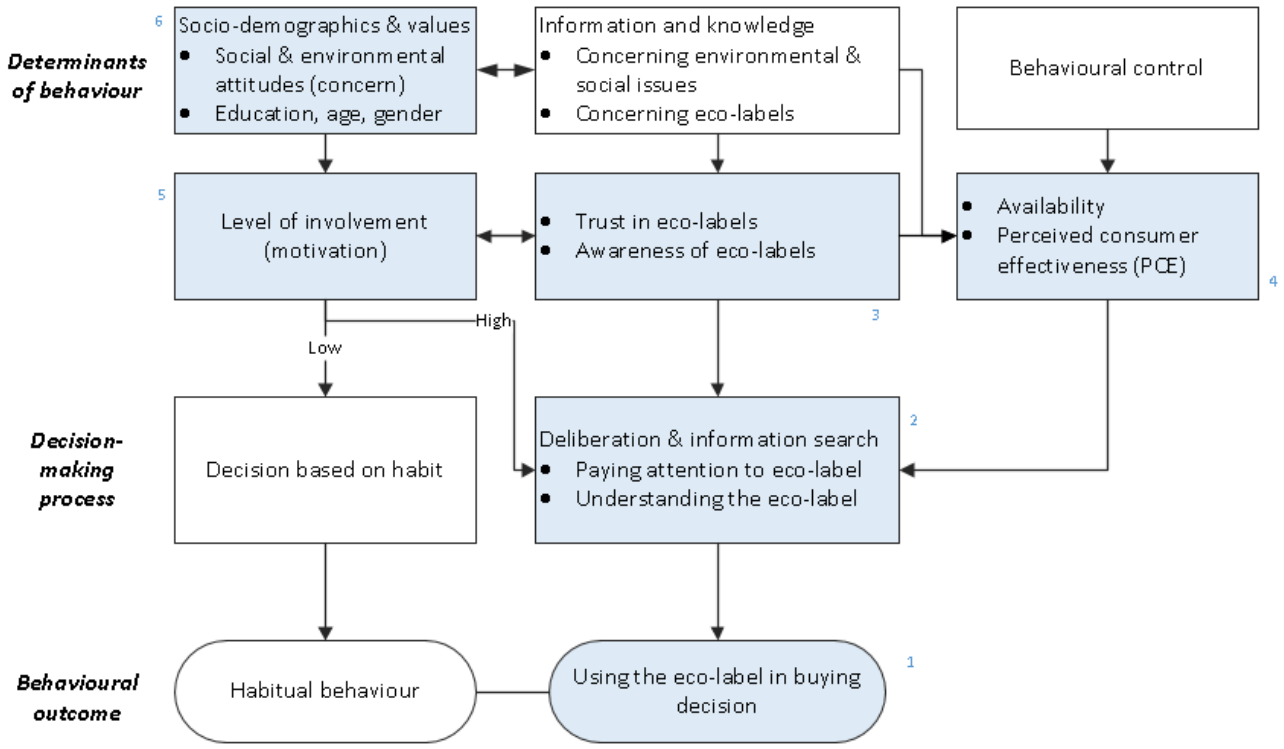

Figure 1 Model of eco-label use in buying decision (based on Vermeir & Verbeke (2006) and Grunert et al. (2014))

Based on the literature review and the theory frameworks by Grunert et al. (2014) and Vermeir and Verbeke (2006), I created a model of eco-label use in buying decision, Figure 1. Grunert et al.'s (2014) model is based on the principle that availability of sustainability labels leads to their use provided that consumer is motivated and has appropriate understanding. Their findings indicate that the availability of eco-labels results in their use on condition that the consumer is motivated (involved) and has understanding on the issue (Grunert et al. 2014, 188). Vermeir and Verbeke's (2006) model is founded on three key determinants of behavioural intention concerning sustainable consumption: (1) values, needs, and motivations; (2) information and knowledge; and (3) behavioural control. It seems appropriate that behavioural control is included, as in their discussion Grunert et al. (2014) stated that motivation and understanding alone were insufficient to result in behaviour.

Figure 1 combines the ideas of Grunert et al. (2014) and Vermeir and Verbeke (2006). As visible in Figure 1, information and knowledge concerning sustainability issues and education, which are affected by age and education, influence social and environmental attitudes, creating concern. Social and environmental values are connected to the level of involvement, low involvement causing habitual behaviour, and high involvement leading to deliberation and information search in product choosing process. Trust in and awareness of eco-labels is influenced by knowledge concerning them.

Eco-labelled products need to be available for the consumer to pay attention to them. If they are available, the consumer is more likely to pay attention to and understand the eco-label in the information search if they are aware of and trust eco-labels in general, and if they perceive their actions to be effective (PCE). Using the eco-label can also be based on a habit, in which case the consumer has gone through the deliberation process before. The areas highlighted with colour blue mark the variables involved in this study: socio-demographic values, involvement, trust in and awareness of eco-labels, perceived consumer effectiveness, deliberation and information search, and using the eco-label in buying decision.

4 RESEARCH METHODOLOGY

This chapter will lay down the reasons for choosing the selected research method, explain the questionnaire design process, data collection and the target sample. The realised research population (sample) will be compared to the statistics of the Finnish population to evaluate how well the sample represents it. Finally, the reliability and validity of the study will be discussed.

4.1 Research approach and design

The aim of the research is to gain understanding on the significance of eco-labels in green consumer behaviour in food consumption, and therefore it takes an inductive approach (Saunders et al. 2009, 127). It aims to find causal relations that result in using, or indeed, not using, the eco-labels, and to explain what role eco-labels have in green consumerism, making it an explanatory study (Saunders et al. 2009, 140-141). As the topic is closely related to consumer behaviour, it is natural to choose the grounded theory research design (Eriksson & Kovalainen 2011, 3).

Consumers who buy products that carry a sustainability label were the target group. Organic eggs, organic and fair-trade certified bananas, and organic and/or fair-trade certified wine we selected as representative test products: the buyers of these products were the target sample. In order to get sufficient representation of buyers of each product group, it was decided that thirty respondents per test product were needed, altogether 90 respondents. Despite the anticipated large sample size, qualitative research method was chosen, as it fits the inductive approach (Saunders et al. 2009, 127), and is capable of providing descriptive, expressive, multi-layered data (Alasuutari 2011, 84), and it can also be utilized for explanatory research (Saunders et al. 2009, 141). The data was collected in form of semi-structured interviews; this type of interview is suitable for gaining understanding on the connections between variables in an explanatory study (Saunders et al. 2009, 322). An audio-recorded interview is also time-efficient, making it the most convenient option for the target sample, consumers shopping for groceries. This would make them more willing to take part in the study.

The consumers who were be observed to buy the aforementioned products were approached to take part in the study. The interviews were carried out in two locations within Lappeenranta: in a large grocery store Prisma, and in an alcoholic beverage store Alko. This is a cross-sectional study, as the data is collected within a short time period – it provides information of consumer behaviour concerning the use of eco-labels, at the end of year 2017. (Saunders et al. 2009, 155).

4.2 Semi-structured interview design

The interview was semi-structured. The first version of the question set was tested with pilot interviews over a one-week period. The pilot questions can be found in Appendix 1. These questions were found to be too easily answered with a mere 'yes' or 'no', instead of providing further insights. It was found that four product types (coffee, wine, bananas, eggs) were a too broad selection of test products, so the amount was reduced to three (wine, bananas, eggs). Coffee was eliminated as the coffee selection is broad and there is a variety of eco-labels available in, and these appear in different products in different combinations, and this would prove inconvenient when attempting to observe the consumers' product selecting in a subtle manner without disturbing the consumer. Many questions or observations performed poorly in providing insightful data; for instance, the quantity of products was insignificant, as was the habit of buying the product in question. The question concerning the environmental impact associated with the product (signifying the consumer's eco-label understanding or knowledge) was composed poorly, or was not a functional question in general, as the consumers struggled to come up with any answers to this question. Therefore, the following question, concerning the consumer's trust toward the label's functionality toward these environmental issues was also dysfunctional.

Based on these judgments and the model of eco-label use in buying decision (chapter 3), a new set of interview questions was composed. This final set of questions can be found in English in Attachment 2 and in Finnish in Attachment 3. It consisted of nine (9) exploratory questions regarding the buying behaviour, and six (6) demographic questions. The first question, 'How did you end up choosing this product?' was an open question designed to uncover the reason(s) behind the consumer selecting the product in question, and whether they would mention associated the eco-label as one of the reasons. The second question, 'Did you notice the organic / fair-trade label?' would be presented if the consumer did not mention the label when answering the first question, in order to find out whether they paid attention to it. The third question, 'What do you know about this label?' is exploratory, with the purpose of uncovering how the consumer comprehends the meaning behind the label. At the same time, it may unravel how well the label communicates its meaning. Fourth question, 'Do you believe that the claims made by this label are reliable?' measures how well the consumer trusts the label.

The overall awareness of eco-labels is tested in question five, where the consumer is presented with a picture of six different sustainability labels (see Appendix 4), and asked how many of them they recognise. These labels are: the organic label of Finland, the organic label of EU, fair trade label,

Rainforest Alliance label, UTZ label, and MCS label. The last three labels are not strongly related to the observed product categories; however, bananas sometimes carry the label of Rainforest Alliance. Rainforest Alliance's labels are met with a wide array of products, such as coffee, tea, chocolate, beverages, and fruits as well as other products outside the grocery category (Ecolabel Index 2018a). UTZ is associated with coffee, tea and cocoa products (Ecolabel Index 2018b). MCS can be awarded to sustainably sourced marine products such as fish. The consumer is asked to give a brief explanation of the label if they say they know it, to certify their claim. Perceived consumer effectiveness (PCE) is tested with question six, 'Do you believe your purchase decision has an impact?' If the consumer fails to mention any specific effects, they will be offered some potential effects, such as the selection at the store, the community, producers, environment. There are two dimensions to involvement that I am testing: product class involvement and ethical involvement. Product class involvement is tested with question seven, 'How important is selecting good fruit / eggs / wine to you?' This approach on measuring product involvement is based on Mittal (1995, pp.) and Tarkiainen & Sundqvist (2009, 853-854), according to whom involvement has been assessed through level of 'importance' or 'perceived importance' in various studies.

The last section of questions is the demographic section. This involves age group, gender, educational level, size of the household, the amount of money spent on groceries weekly, and the income bracket of the household. The brackets for household grocery expenses were based on Statistics Finland's data sets on household consumption expenditure (food and non-alcoholic beverages) by type of household and by income bracket, in 2012 (the latest data available at the time of research). These data sets showed little variation between income brackets, spanning from 57 e (1st income bracket) and 128 e per week (5th income bracket). There was more variation between household types, spanning between 52 e per week for households of one-person aged under 65, and 156 e per week for two-parent family with children. Based on this, the brackets were kept quite narrow.

4.3 Target sample and data collection

The target sample was the buyers of the organic and fair trade bananas, organic eggs, and certified wine. The objective was to find out why these consumers selected these products to buy, and whether the sustainability labels played a part in their buying decision. To ensure that the sample consisted of people that provably bought the products selected for observation, only the consumers who had picked one of these products to their shopping basket were approached for an interview: the sampling selection was purposive heterogeneous sampling (Saunders et al. 2009, 237-239). The interviews

were recorded with a dictaphone, with the consent of the interviewee. The interview times varied between 11 am and 5 pm, and were implemented over the time-period of two weeks in November 2017. The objective was to get thirty (30) samples per product group. Prior to the actual data collection, 18 pilot interviews were carried out at Prisma. In the final sample there were 91 respondents, 31 for bananas, and 30 for eggs and wines each.

4.4 Sample representativeness

This section discusses the generalisability of the research population. The distribution of the sexes is shown in table 2 below. The rate of women to men, 58 % female and 42 % male, is unrealistic when comparing to the whole Finnish population, but may be a good representation of those who generally take care of the household's grocery shopping. According to Statistics Finland (2017b), in 2012 there were roughly 2 712k men, and 2 791k women in the country, giving an overall gender ratio of 50.7 % females and 49.3 % males, an almost even distribution (Official Statistics of Finland 2017b). The distortion in the sample is most likely caused by the fact that it is more common for women to take care of the grocery shopping. However, it must be noted that in some cases the interview was carried out with a couple – in these cases only the sex of the more active respondent was recorded.

Table 2 Gender structure: sample and the Finnish population (Official Statistics of Finland 2017b)

	Research population		**Finnish population**	
Sex	No. of people	Share of total (%)	No. of people	Share of total (%)
Female	53	58.2	2791k	50.7
Male	38	41.8	2712k	49.3

For comparing the sample's and Finnish population's age structure, we have calculated the percentages of the Finnish population in 2016 based on the total number of people aged 15 years or older. This way it will be easy to compare the shares of each age bracket between the two sets. The age structure of the sample, as shown in table 3 below, was dominated by those within the age brackets '55-64' and '65 or older'. These two brackets together included nearly half of the sample. 15-24-year-olds, with under 5 % of the sample, were underrepresented when comparing to the whole population where this group was 9.3 per cent larger. 25-34-year-olds were overrepresented in the sample with roughly 20 %, 4.5 % more than in the control group. Age brackets '35-44' and '45-54' each represented 13 % of the sample, differing from the control group by only 2.3 per cent at most.

According to Statistics Finland (2017b), at the end of December 2016, people aged between 15 and 64 accounted for 75 per cent, and people aged over 65 for 25 per cent of Finland's population. (Official Statistics of Finland 2017b)

The representativeness of the age structure of the sample is good in the sense that under 24-year-olds remain proportionally the smallest group (4.4 % of the sample, 13.7 % of the whole population) and over 65-year-olds the largest (26.4 % of the sample, 24.9 % of the whole population). The ratios of age groups 35-44 and 45-54 in the sample were close to those of the whole population, while the 25-34 and 55-64 age groups were strongly overrepresented in the sample. The time of day the interviews were carried out (day and afternoon) was probably one reason for underrepresentation of under-24-year-olds, who are typically students. Another reason is the location: most of the university students in Lappeenranta live in the university village, located 6-7 kilometres from the supermarket (Prisma) in which the interviews were carried out. The timing of the interviews probably also explains the high presence of ages 55-64.

Table 3 Age structure: sample and the Finnish population (Official Statistics of Finland 2017b)

	Research population		**Finnish population**		
Age group	**No. of people**	**Share of total**	**No. of people**	**Share of total***	**Difference**
15-24	4	4.4	633 704	13.7	-9.3
25-34	18	19.8	704 402	15.3	4.5
35-44	12	13.2	671 350	14.6	-1.4
45-54	12	13.2	712 553	15.5	-2.3
55-64	21	23.1	737 135	16.0	7.1
over 65	24	26.4	1 149 975	24.9	-1.5
Total	91	100	*4 609 119	100.0	

The education structure of the sample and the Finnish population in 2016 is portrayed in table 4. Almost 85 % of all the sample had either vocational school education, bachelor's or master's level, bachelor's level being the most common, obtained by 34.1 % of the sample. Basic and upper secondary school education were each obtained by only 8.8 % of the sample, while among the whole population the shares are high, 29.2 and 40.2 per cent respectively. There were two individuals who had both upper secondary school and vocational school education (a double degree), which is why the total number of the sample is shown as 93 and not 91. As is visible in table 4, the differences in education structure between the sample and the Finnish population are significant.

Table 4 Educational structure of sample and the Finnish population in 2016 (based on Official Statistics Finland 2017c)

	Research population		Finnish population		
Education level	**No. of people**	**Share of total (%)**	**No. of people**	**Share of total (%)**	**Difference (%)**
Basic education	8	8.8	*1 345 561	29.2	-20.4
Upper secondary education	8	8.8	1 852 669	40.2	-31.4
Vocational school education / Lowest level tertiary	26	28.6	447 112	9.7	18.9
Bachelor's or equivalent level	31	34.1	500 520	10.9	23.2
Master's level or higher	20	22.0	460 126	10.0	12.0
Total	93	100	4 605 988	100	

*2015 information

Additionally, the age distribution among each education level is shown in Figure 2 below. The basic education is made up of individuals of over 55 years' age (age brackets 55-64 and 65 or older), while all ages are evenly distributed in the upper secondary school education. Vocational education is dominated by age brackets 25-34, 55-64 and 65 or older. Among bachelor level, only age brackets 15-24 and 55-64 stood out by their lower presence. Among the master level, 15-24 and 55-64 ages has the strongest presence, and '65 or older' the lowest.

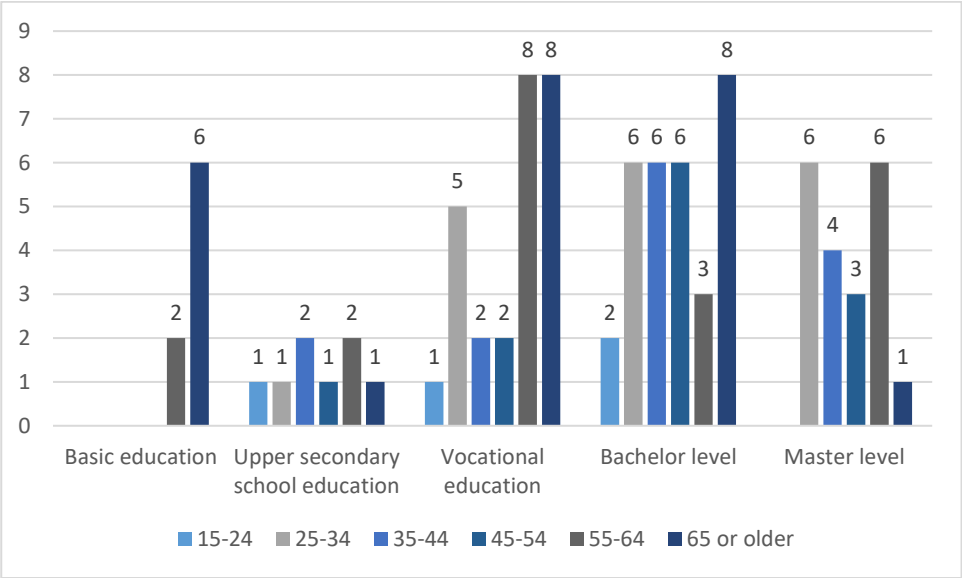

Figure 2 Age distribution as per education level

Households by number of members in sample and the Finnish population in 2012 are shown table 5. The sample was dominated by two-person households, represented by 53.8 per cent of the sample, and followed by single person households, which made up 18.7 per cent of the sample, making 72.5 per cent together. There were 6.6 per cent of three-person, 13.2 per cent of four-person households and 7.7 per cent of households consisting of five or more people. According to Statistics Finland (2017b), in 2012 one-person and two-person households dominated the household statistics, representing 40.3 and 35 per cent respectively, and 75.3 per cent combined. (Official Statistics of Finland 2017b). In the sense that one- and two-person households make up roughly 75 % of all the households, the sample has good representativeness, however there is a large difference in the specific shares, and one-person households take up the largest share, unlike in the sample where the situation is reversed. The shares of three-, four-, and five-or-more-persons' households are slightly different than those in statistics, with roughly 3 to 4 per cent variation between sample and Finnish population. (Official Statistics of Finland 2017b)

When testing the connection between household size and mean weekly grocery expenditure (see Appendix 9 and it was found that the bigger the household size, the higher the weekly grocery expenditure. The sample's grocery expenses per household size reflect those of the Finnish population quite well. When comparing the weekly grocery expenditure and the level of income, there seems to be a trend where the larger the income, the higher the grocery expenses. Comparison of consumption expenditure by income brackets between sample and the Finnish population exhibits almost similar levels of weekly food expenses between the two populations, though the growth of expenses across income brackets is more linear among the Finnish population than among the sample.

We can conclude that the gender distribution does not sufficiently represent the whole population- The consumption expenditure on groceries as per household size and household's income bracket are fairly realistic compared to the whole population's data. The age structure is close to that of the population, the largest differences are with age groups 15-24, 25-34 and 55-64, there the percentages between sample and population vary between 4.5 and 9.3 per cent. The education structure does not correspond with the Finnish population, and varies between 12 and 31.4 per cent between the education levels of the two sets.

4.5 Reliability and validity

Some interview questions failed in providing the intended information, so sometimes they had to be asked again with different wording; this is how the semi-structured type of interview was convenient. To the question ‘How many of these labels do you recognise?’ referring to the picture in Appendix 4, some people pointed out the labels based on understanding them and some based on having seen them. When it was clear the consumer had seen the label but did not know its meaning, this was not recorded as a familiar label.

The question ‘In general, do you aspire to buy ethical or environmentally friendly (food) products?’ and the extensive question ‘By what means?’ originally did not include the word ‘food’. The word was eventually added, but before that, due to poor wording, many of the interviewees were able to only associate ethical food with organic food, which may or may not reflect their true understanding of ethical food consumption. Many would have effortlessly associated environmental friendliness and ethics with other products such as cosmetics, cleaning detergents and clothes, and they found it difficult to come up with such attributes regarding food.

The question ‘Do you believe that your buying choices have an impact? On what?’ was often understood to be about buying organic products specifically, instead of food buying decisions in general. Some of the questions were re-worded to form ‘Do you believe that your buying decisions *in general* have an impact?’ however, at this point many interviewees had already been answering the original question. Similarly, food involvement question ‘How important decision is buying good wine / fruit / eggs to you?’, was often misunderstood to mean the importance of buying organic or fair trade product specifically, instead of the product in general.

To the question ‘In your understanding, what does this label mean or stand for?’ many interviewees gave an answer regarding the product category in question, instead of considering the eco-label on a general level. Many also started to answer the question by telling how important the label is to them, instead of telling about its function. Answers such as good taste and health were not recorded (as they do not refer to the functionality), but were mentioned by many.

The question regarding the weekly food expenditure is an estimation of the consumers, and as they found this question hard to answer, it may not always be accurate.

5 RESULTS

In this chapter I will go through the results of the analyses. In the first section I will test the relationship between ethical involvement and demographic variables: sex, age, education and income. The second section will look at ethical involvement's possible connection with trust in eco-labels and awareness of eco-labels. Third section will test the possible relationship between PCE, ethical involvement and trust in eco-labels. The role of eco-label in buying decision and the variables possibly associated to it will be viewed in section four. The fifth chapter will look at the results of truth tables.

5.1 Demographics' impact on involvement

The product category involvement overall was high: 67 per cent felt that selecting the product in question was an important decision, 22 per cent thought it moderately important, while only 11 per cent said it did not really matter to them, indicating low product category involvement. The degree of product category involvement was high among all product groups: bananas with 71 %, eggs with 80 %, and wine with 50 %. Among banana-buyers, there was no low involvement, among egg-buyers there was 7% share, and among wine-buyers 27% of low involvement. Table 5 describes the frequency and percentage share of each involvement level among each product group.

Table 5 Product category involvement by product

	Bananas		**Eggs**		**Wine**		**TOTAL**	
Involvement	**F**	**%**	**F**	**%**	**F**	**%**		
Low	0	0 %	2	7 %	8	27 %	10	13 %
Moderate	9	29 %	4	13 %	7	23 %	20	41 %
High	22	71 %	24	80 %	15	50 %	61	46 %
Total	31	100 %	30	100 %	30	100 %	91	100 %

The consumers general level of pursuit of buying ethical food products represented the level of their food-related ethical involvement (product category involvement). From here on, the term 'involvement' refers to ethical involvement, unless specifically mentioned that it means product category involvement. As shown in the far-right column of Table 5, when looking at the ethical involvement in the sample, the reportedly highly involved consumers (46 % of the sample) represent the largest portion of the sample. This group typically reported that they try to always choose the ethical option despite the price. The share of the moderately involved group (41 %) is slightly smaller. This group was distinguished by their general favouring of ethical options but considering also the

price and the convenience when making the buying decision; if the ethical option was considerably more expensive, they would choose the conventional option, and if the difference was small enough, they would choose the ethical option. They also mentioned that they would not go to special stores to find the ethical products. The group with low involvement, representing 13 % of the sample, generally reported that they did not pursue ethical choices in their grocery shopping, or did so very little.

Associated with the question regarding the pursuit of ethical buying behaviours, the sample were asked how they would pursue these behaviours in practice. They could name as many means as they wished. The responses divided into the ethical involvement groups are shown in Figure 3 below. In general, most of the consumers associated practices such as favouring local produce (69/91; 76 %) or organic products (59/91; 65 %) with ethical buying behaviours. Aside from these practices, other behaviours were mentioned much more rarely. Favouring eco-labelled products was mentioned by 23 people and favouring fair-trade products by 16 people in total. The rest are mentioned less than ten times in total. The highly ethically involved consumers named the highest number (103 pcs) of practices in total, followed by moderate involvement group (85 pcs). The low involvement group fell far behind the other two groups, naming only eleven (11) practices in total.

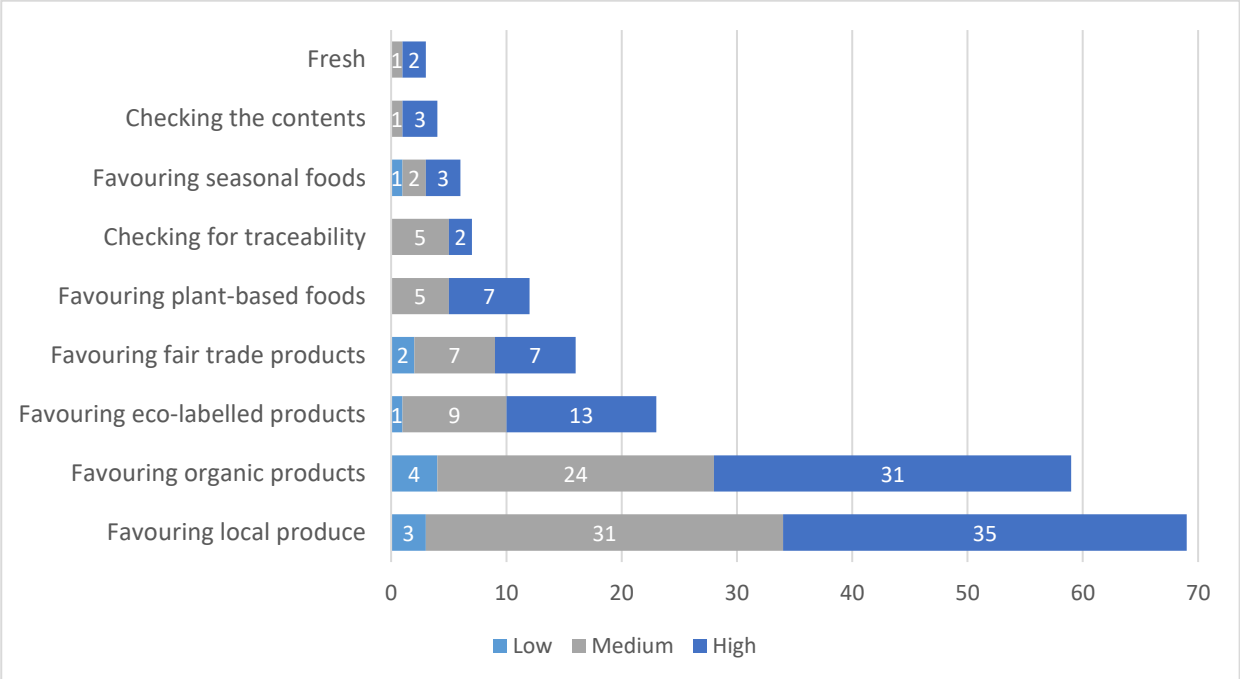

Figure 3 Perceived food-related ethical buying behaviours as per ethical involvement

As presented in Figure 4 below, when scrutinizing how frequently the different involvement levels emerge between sexes, the share of low involvement is larger among men (18.4 %) than among

women (9.4 %), and the moderate and high involvement shares are both higher among women. There is a notable difference (6.6 %) between the medium involvement groups, but only a slight one (2.5 %) between the high involvement groups of the two sexes. According to chi square test, between men (n=38) and women (n=53) the involvement differs by: df=2; X^2=1.62; p=0.445; the difference is more likely caused by sampling.

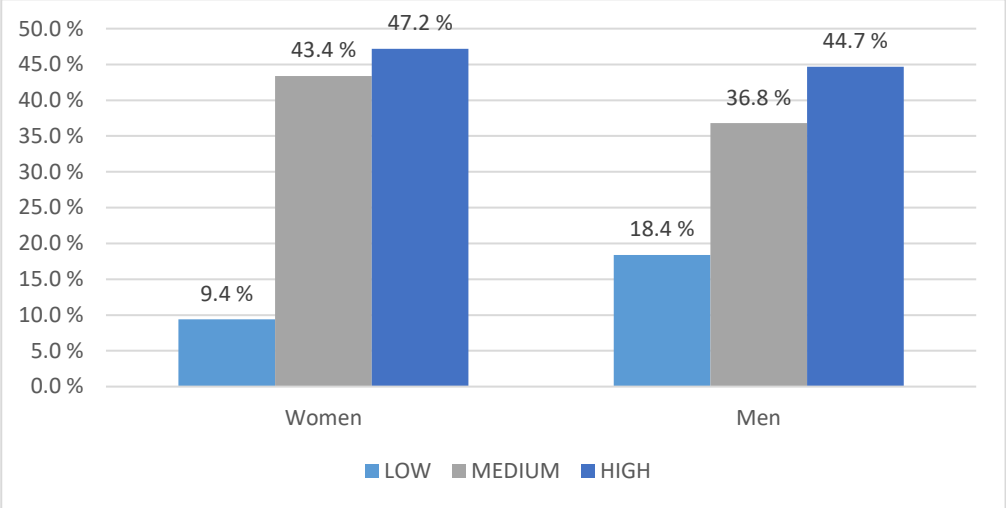

Figure 4 Distribution of ethical involvement levels by gender

Figure 5 visualises the frequency and share of involvement levels for each education level. The highest number of high involvement is found in those with a bachelor's level education or equal (16/31), followed by vocational school graduates (12/26), while the highest number of moderate involvement seems present with master's level (11/20), bachelor's level (12/31) and vocational school (11/26) graduates. There is a clear dip in the level of involvement after bachelor's level. However, if we combine moderate and high involvement, the level of involvement is distinctively higher among the higher education.

The shares of low involvement per education level are at highest among basic (25 %) and upper secondary school education (25 %), and at lowest among master's level (10 %) and bachelor's level (10 %) education. Moderate level of involvement varies between 39 and 55 per cent between education levels, except with basic education where it is lower, at 13 per cent. High degree of involvement is most frequent with basic education holders, where it is at 63 %, followed by bachelor's degree with 52 %, and vocational school with 46 %. Upper secondary school has the lowest rate of high involvement (25 %). The basic education group and upper secondary group consisted of eight

individuals respectively. According to chi square test, between the education levels, the involvement differs by: df=8; X^2=151.56; p=0.000.

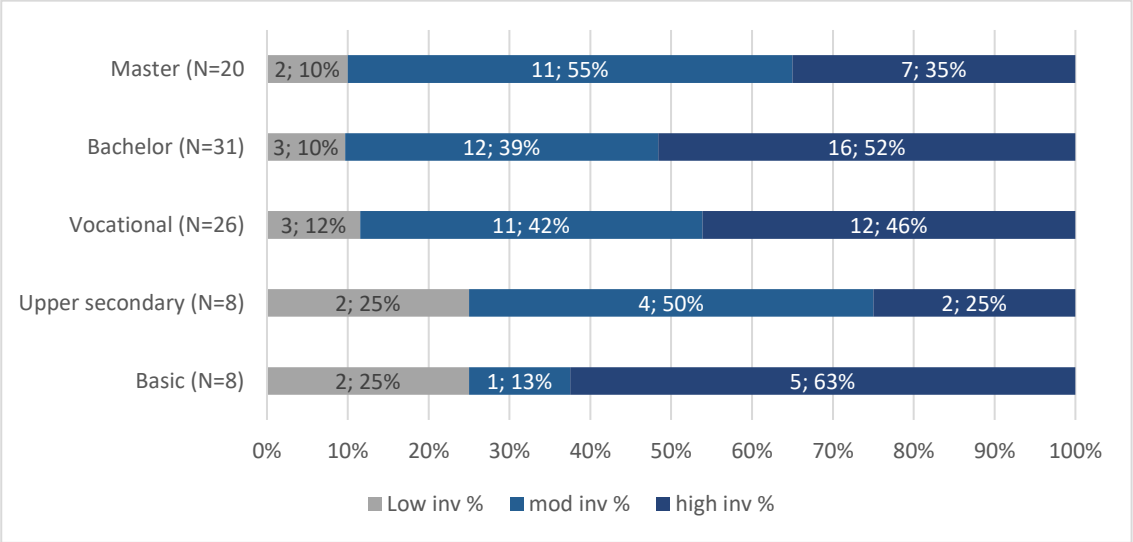

Figure 5 Ethical involvement levels as per education level

The distribution of levels of involvement in each age bracket is presented in Figure 6. The share of high involvement is highest among under-25-year-olds, however there are only four people in this age bracket. Otherwise, it seems the share of high involvement seems to grow as the age gets higher, starting from 33 % with 25-34-year-olds, and reaching its peak at 58 %, with the 'over 65 years' age bracket. The moderate involvement level is highest among 25-34- (56 %) and 35-44-year-olds (67 %), but then drops gradually, stopping at 25 % with 'over 65' age group. Low involvement is a highest at 17 %, with over-65-year-olds. Again, the low involvement group is made up of 12 people in total, not able to give accurate results. According to chi square test, between the age brackets, the involvement differs by: df=10, X^2=14.32, p=0.159. The indications are not completely reliable, but partly caused by sampling.

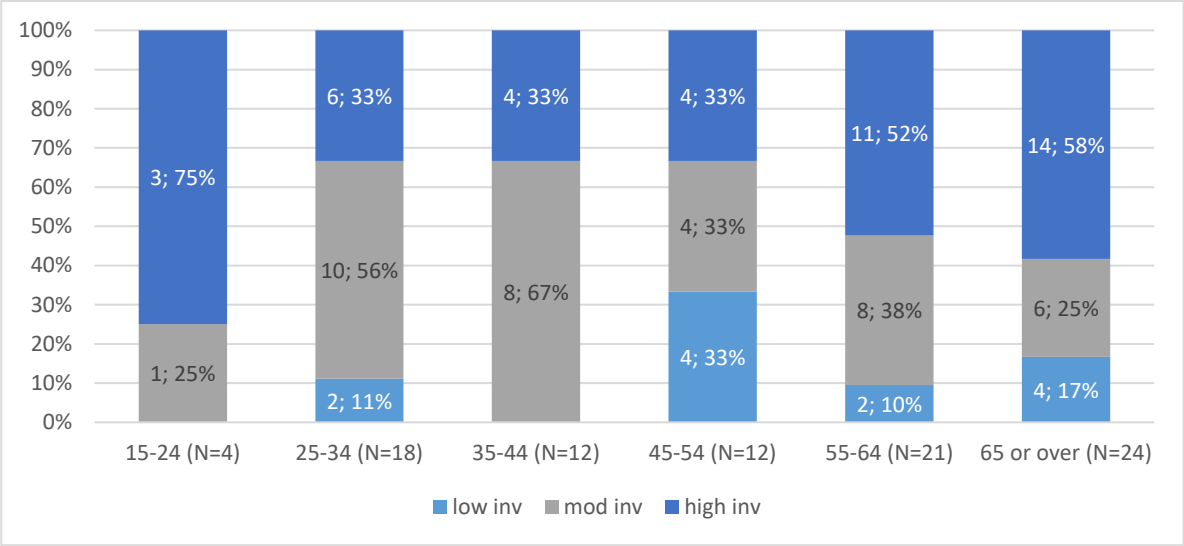

Figure 6 Ethical involvement by age group

Figure 7 showcases how the involvement levels are distributed in each income bracket. The three involvement levels do not seem to be correlated with income level. High involvement is at its highest within the income brackets of under 1600 e (56 %) and 3500-4500 e (57 %) a month, and between those it decreases. It is surprising that the lowest income bracket has the highest share of high involvement and the highest income bracket the lowest share of high involvement, but the highest share of moderate involvement. Low, moderate and high involvement levels all seem to grow and decrease irregularly as the income grows. According to chi square test, between the income brackets, the involvement differs by: df=8, X^2=8.34, p=0.0401, so the indications are not due to sampling. There is no correlation.

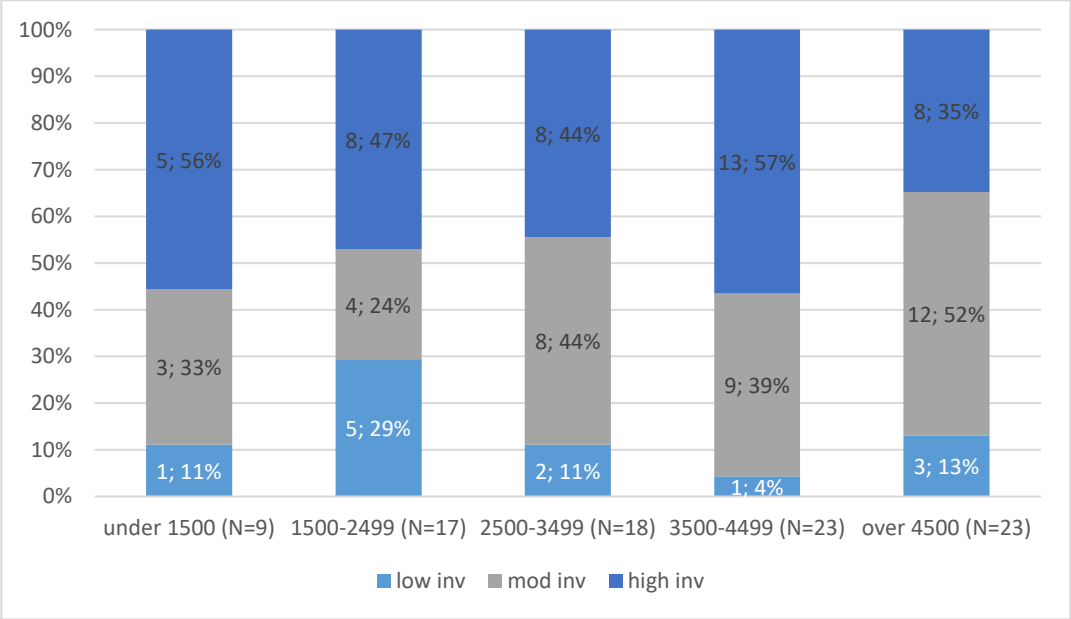

Figure 7 Ethical involvement by income bracket

5.2 Impact of trust in and awareness of eco-labels on involvement

Across the whole sample, 45 per cent (41 people) had high trust that the eco-labelled products production methods corresponded with the standards required to use the label – in other words, that the certifying organisations are thorough when controlling the complying to the requirements. Another 45 per cent (41 people) expressed moderate level of trust: this group's trust in the eco-label depended either on the product or the eco-label, or they often trusted eco-labels but not necessarily or not in all cases – but when they did trust, their trust was high. The low trust group, represented by 10 per cent (9 people) of the sample, typically stated that they doubted the eco-labels to do what they claimed to. These trust levels are displayed in Figure 8.

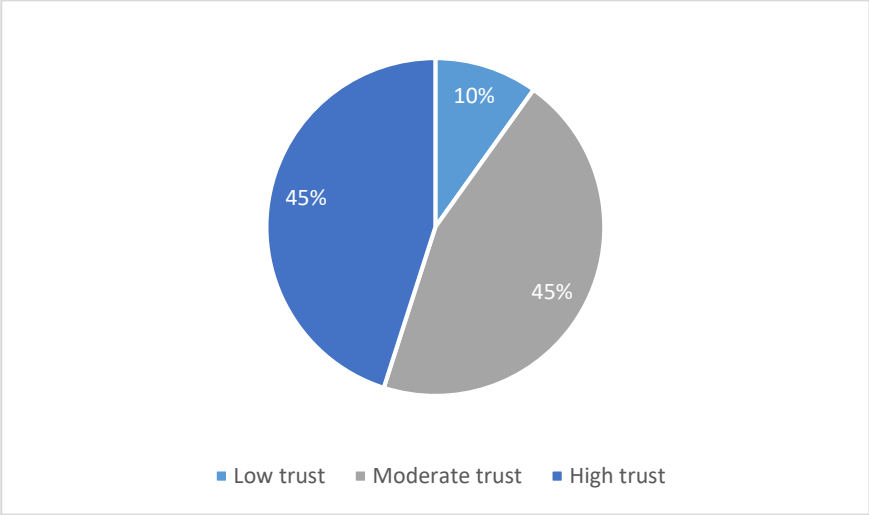

Figure 8 Levels of trust in eco-labels

Two sub-groups emerged within the group with moderate level of trust. Interestingly, 12 people (29 % of the moderate trust group; 13 % of the whole sample) expressed that their trust was higher when it came to Finnish products with an eco-label, eco-labelled products in the Finnish market or Finnish eco-labels in general. These people often stated, in one way or other, that they trust that abiding to standards is controlled very closely in Finland, but that they had their doubts when it came to foreign products. The second significant sub-group were those specifically saying that they *hope* that the eco-label standards are followed accordingly, indicating that they were optimistic yet had some doubts. Fourteen people (34 % of medium trust group; 15 % of the whole sample) were in this group.

As visible in Figure 9, the low trust group exhibits the highest share of moderate ethical involvement (56 %), followed by high (33 %) and low (11 %) ethical involvement. With moderate trust group, the high degree of ethical involvement is dominating, with 56 %, followed by moderate degree with 29 %, and low degree of ethical involvement (15 %). The high degree of trust depicts strong moderate involvement (49 %) and high involvement (39 %), and weak low ethical involvement (12 %). According to chi square test, between the trust levels, the involvement differs by: df=4, X^2=10.94, p=0.027, so the indications that involvement and trust are correlated are reliable.

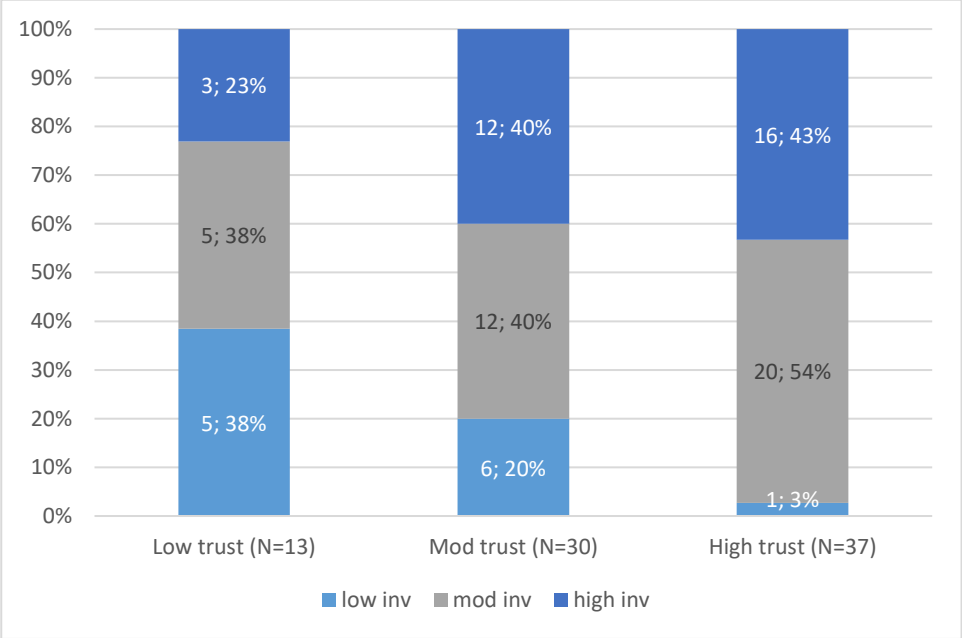

Figure 9 Ethical involvement level as per rate of level of trust

Figure 10 shows how the trust levels are distributed in each level of ethical involvement, switching the axes vice versa. The share of low trust grows from 8 % in the low ethical involvement group to 14 % in the moderate involvement group and falls to 7 % in the high involvement group. The moderate degree of trust dominates the low ethical involvement group with 50 % share, declining to 32 % in moderate involvement, and growing again to 55 % in in the high ethical involvement. High ethical involvement experiences the opposite trend, starting at 42 % in the low ethical involvement, growing to 54 % in moderate high involvement (the peaking share of high trust degree), and falling below the initial level, to 38 % in the high ethical involvement.

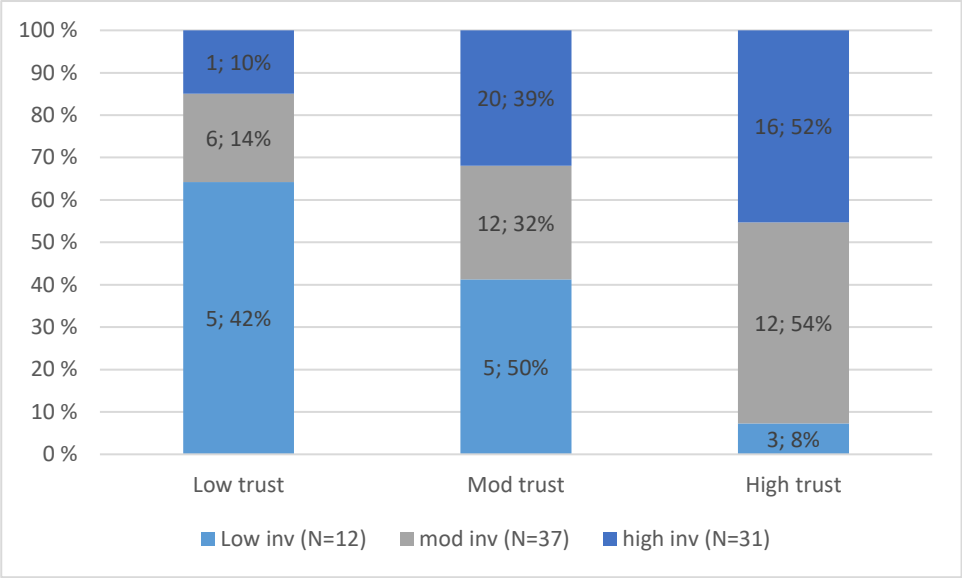

Figure 10 Level of trust as per rate of ethical involvement

Figure 11 below showcases the number of eco-labels the sample was familiar with. The labels that the consumers said they 'have seen but do not recognise' were not included in the count. Almost half of the sample (47 %) recognised one or two eco-labels, while about a third (33 %) recognised three or four, 18 per cent recognising five or all six of the presented labels. Two per cent (two people) could find no familiar labels among those presented to them. Most commonly, people found one or two familiar labels among the six presented to them. The number of recognised labels was spread quite evenly across product categories, as shown in Figure 12.

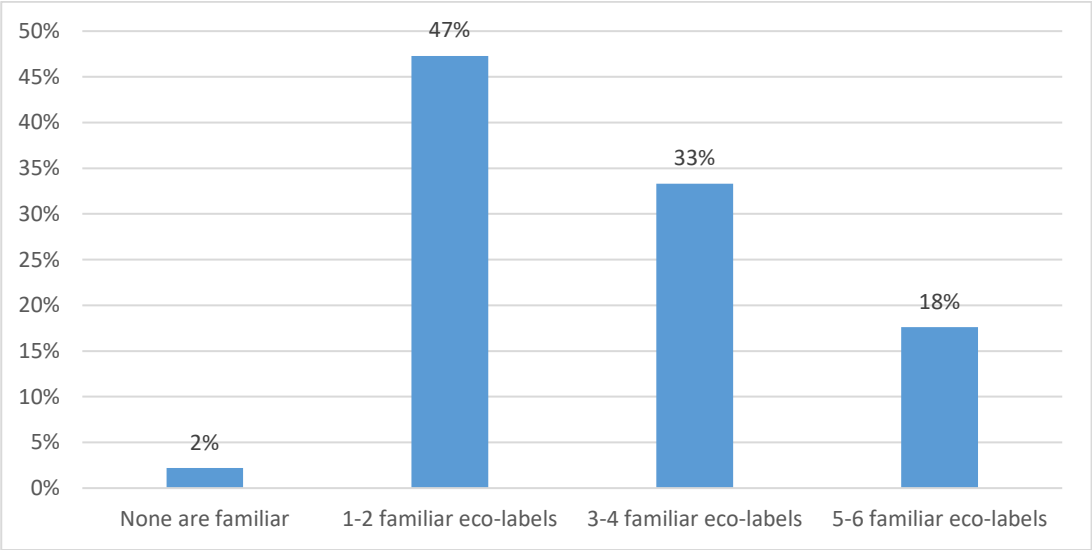

Figure 11 The number of recognised eco-labels as a percentage of the sample

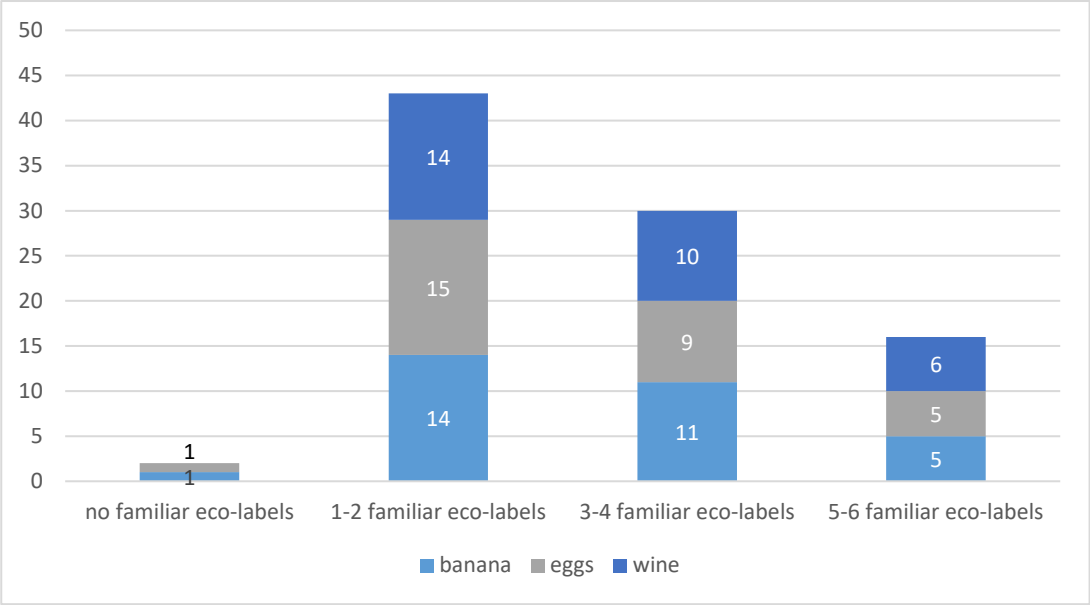

Figure 12 The number of recognised eco-labels as a frequency by product group

Figure 13 below visualises the number and share of people who recognised each of the six labels: Finnish organic label, Fair Trade label, EU organic label, Rainforest Alliance label, MCS label, and UTZ label. The eco-label that was the most familiar to the sample was the Finnish organic eco-label, recognised by 89 of the total 91 people in the sample (98 %). The second most familiar one was the Fair Trade label, recognised by 57 people (63 %), followed by the EU organic label which was familiar to 43 people (47 %). The rest of the six labels, were each recognised by less than a quarter of the whole sample.

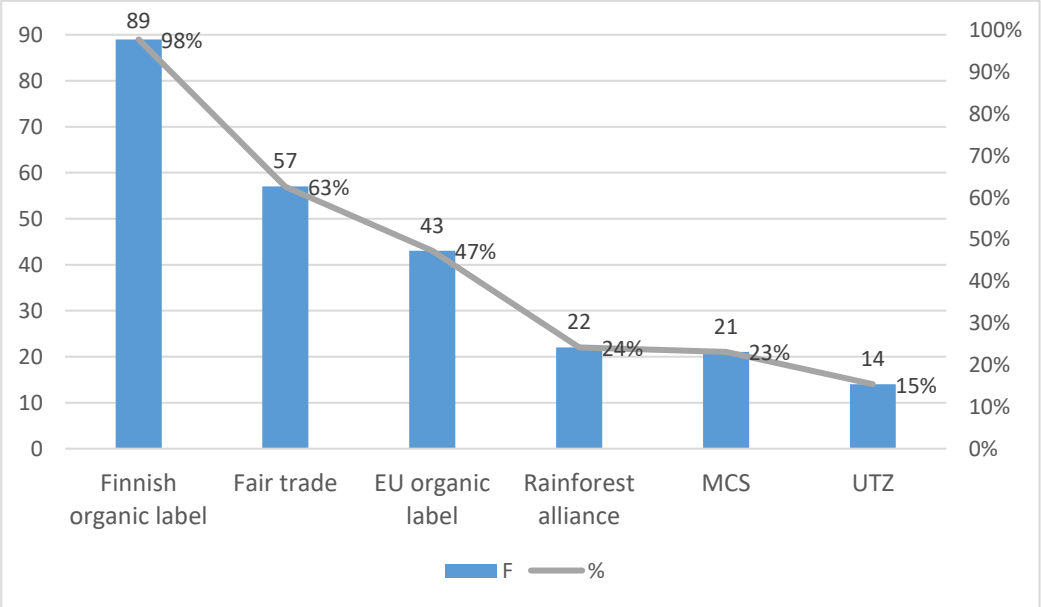

Figure 13 Eco-label familiarity to consumers: frequency and percentage of sample

Figure 14 below presents the number of recognised labels as a per cent of each ethical involvement group. Awareness of the labels and the level of ethical involvement seemed to be related to a degree. The proportion of those who recognised all or almost all (5-6 labels) out of all the six labels presented, was the highest among those with high ethical involvement (24 %). The high ethical involvement group had a fairly high proportion of those recognising only 1 to 2 labels (50 %). Correspondingly, the proportion of those who recognised only one or two labels was the highest in the low ethical involvement group (60 %), where there were none of those recognising all or almost all of the six labels. The rate of those recognising 3 to 4 labels is at 40 to 41 per cent in first two involvement groups, but drops to 26 per cent in the high involvement group. The awareness of (or familiarity with) eco-labels and the level of ethical involvement seem to be related, and roughly directly proportional, however these results are unreliable; according to chi square test, between the awareness levels, the involvement differs by: df=4, X^2=4.49, p=0.343 – the difference is caused by sampling.

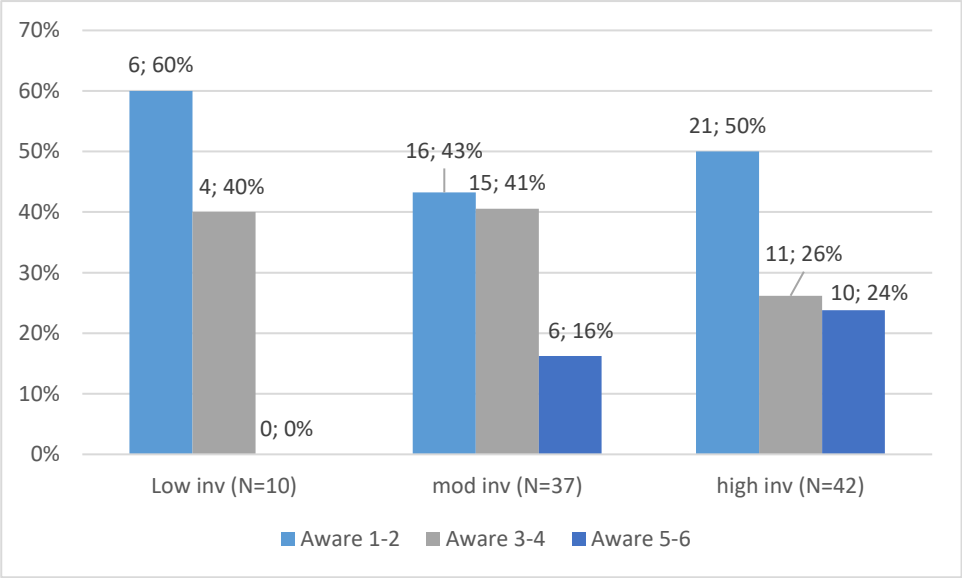

Figure 14 Number of familiar eco-labels, as a percentage of involvement level

5.3 Connections between PCE, ethical involvement, and trust in eco-labels

As visible in Figure 15 below, the overall level of perceived consumer effectiveness (PCE) is quite high, 54 % of the sample expressing high, 22 % moderate, and 24 % low level of PCE. When the interviewees were asked to specify what it is that they believe to be impacting though their buying behaviour, the most frequent answers were the selection (47 votes in total) and the environment (46 votes in total), followed by producers (38 votes in total). The group with high PCE were distinguished

by being by far the most active group active in reporting the hoped effects, giving 128 ‘votes’ in total, while the medium PCE group gave 47 and the low PCE group only 28. These results are visible in Figure 16 below.

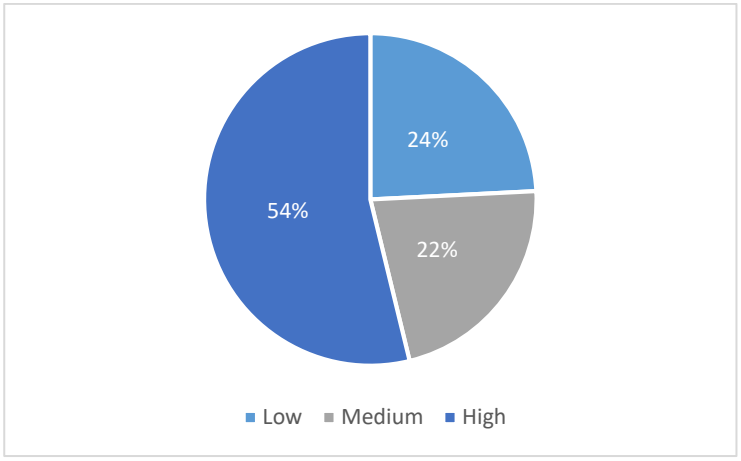

Figure 15 Distribution of PCE levels, whole sample

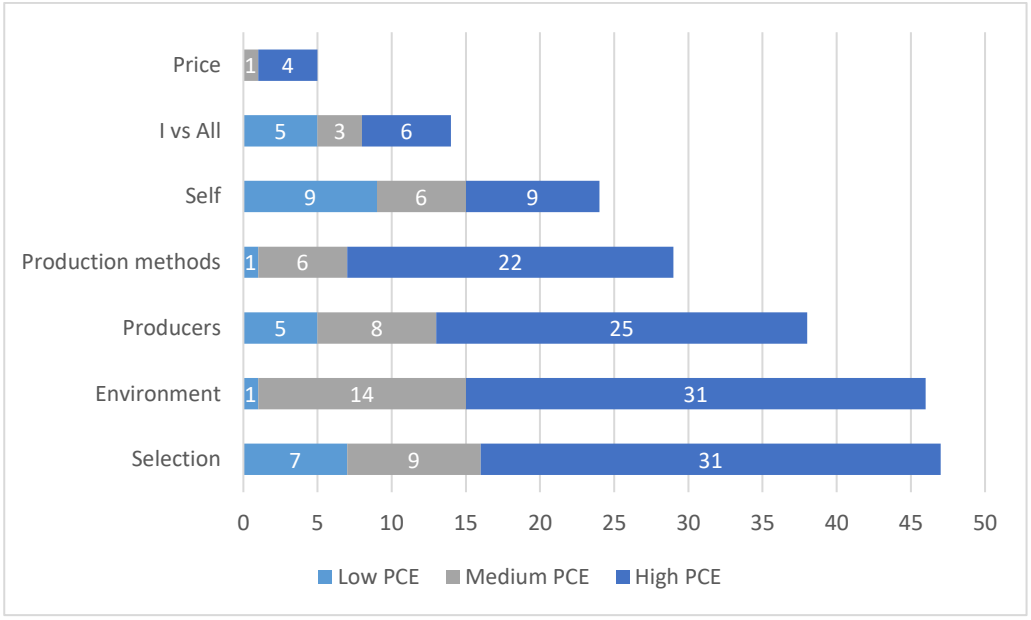

Figure 16 Effects of buying behaviour by level of PCE

As the literature suggested that PCE and awareness concerning eco-labels would be connected, this was also tested. However, there seems to be no pattern, and therefore no clear correlation PCE and number of familiar labels (eco-label awareness). The rate of number of familiar labels for each PCE is portrayed in Figure 17 below.

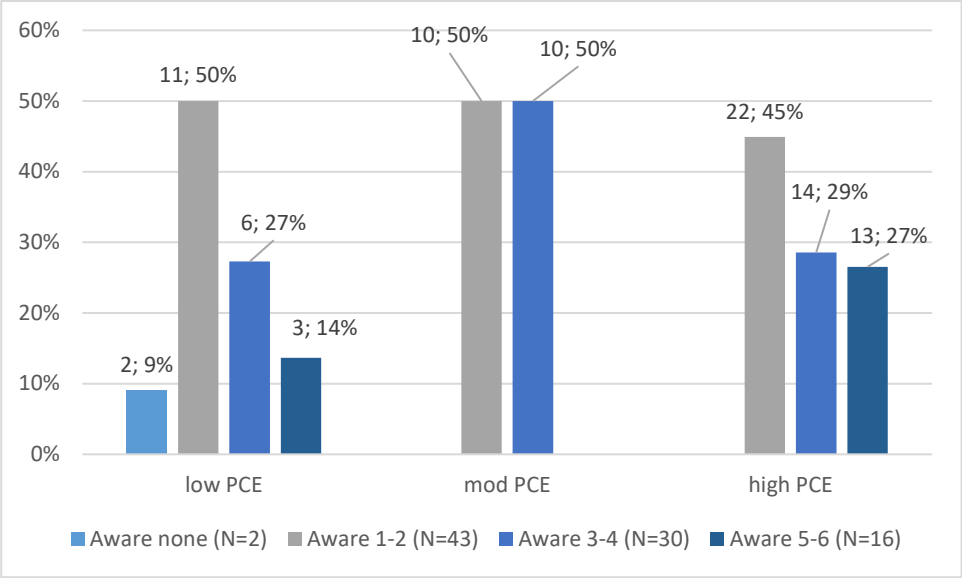

Figure 17 Number of familiar labels as a share of PCE level

Figure 18 below presents the presence of each PCE level as a share of each of the trust level groups. The low trust group demonstrates the highest rate of low PCE (78 %), with equal 11 % rate for both moderate and high PCE. The high PCE is at 56 % in moderate and 61 % in high trust group. Low PCE, represented by 12 % share, has the smallest proportion in the high trust group. The share of moderate trust grows from initial 11 % in low trust to 27 % in high trust group. According to chi square test, between the trust levels, the PCE differs by: df=4, X^2=17.65, p=0.001.

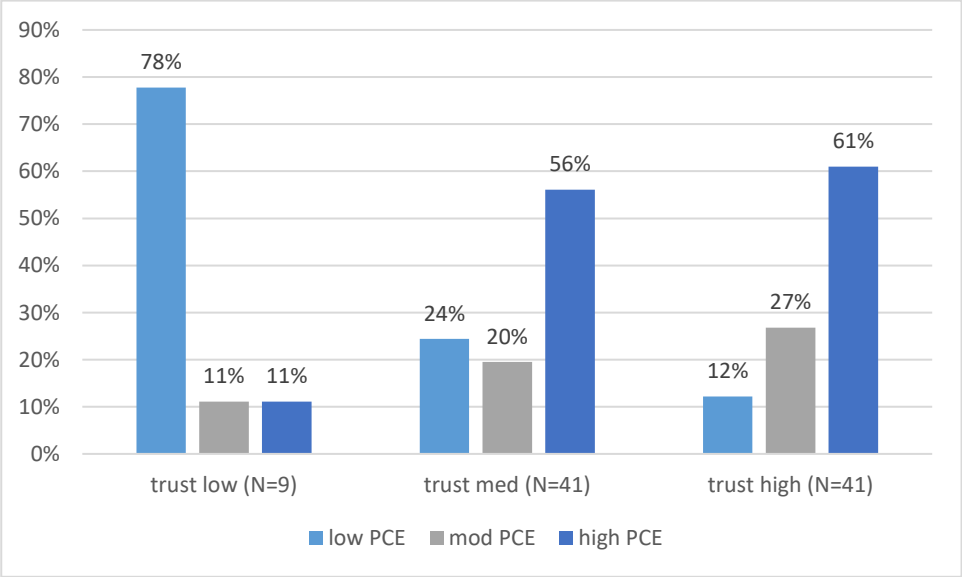

Figure 18 Shares of PCE levels as per level of trust in eco-labels

When switching the variables vice versa (see Figure 19), and the presence of each trust level is shown as a share of each PCE level, the indications are similar, although there is more variation in the rate of moderate trust levels. Again, the rate of high trust is high among moderate (55 %) and high (51 %) PCE groups, however now the share of moderate trust, at 47 % in high PCE is also quite high. Low PCE presents a fair share of low trust (32 %), but also a high share of moderate trust (45 %). There is correlation, but this way around the relationship is weaker and less linear. The chi square test results are the same as in the previous test, with p=0.001.

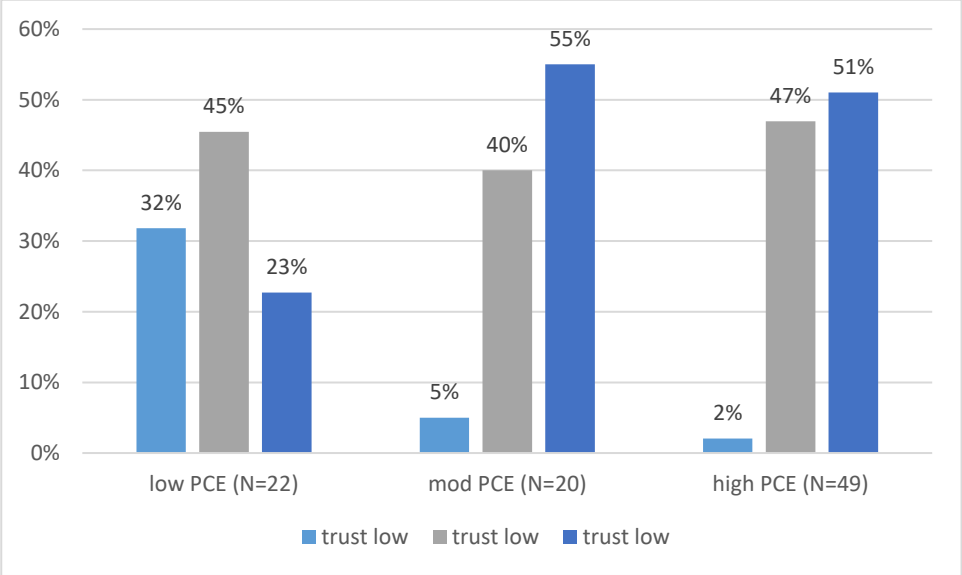

Figure 19 Shares of trust levels as per level of PCE

5.4 The impact of variables on the use of eco-label

The share of giving attention to the eco-label was as high as 92.3 %, while the remainder 7.6 % (7 people) said they did not notice the label. When testing the relationship between trust in eco-labels and attention to eco-labels (see Figure 20), the share of those not noticing the label was at 33 % (67 % noticed) in the low trust group, 7 % in moderate trust (93 % noticed) and only 2 % in high trust group (98 %) noticed. However, it must be noted that there were only seven people in the group that did not notice the label. According to chi square test, between those who did and did not notice the label, the trust differs by: df=2, X^2=9.93, p=0.007. The indications are reliable.

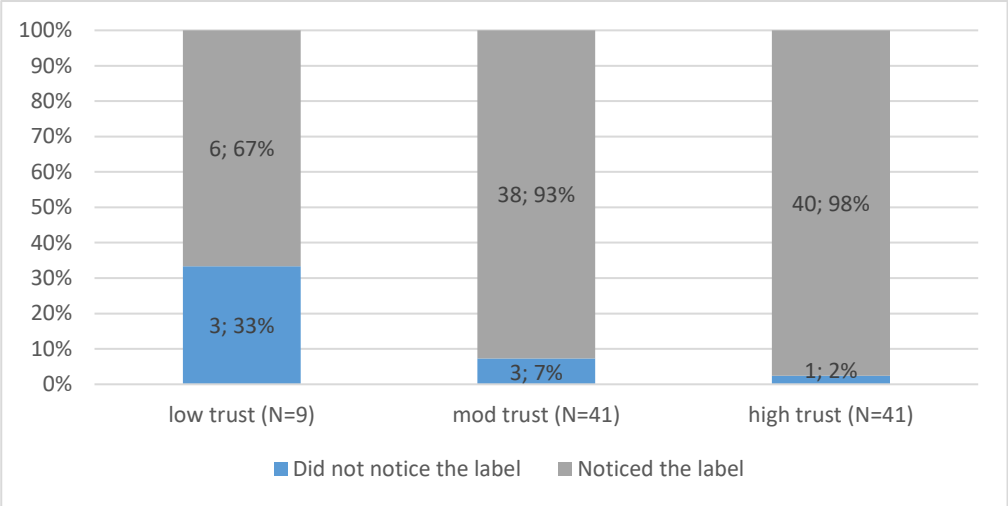

Figure 20 Attention to eco-label as a per trust in eco-label

As there often are multiple factors that affect the choice of a product, the consumers could state as many reasons as they wanted for picking out the product in question. Out of all cases, roughly 52 % selected the product primarily based on the eco-label, roughly 31 % stated that the eco-label had an impact in selecting the product, 17.5 % said the label had no impact on the product choice. Additionally, 2 % said that the presence of the eco-label was rather a nice addition, did had no impact on the decision. Habit played a part in 26 % of the cases. However, there were significant differences between product groups on the impact of the eco-label. As visible in Table 6 below, the eco-label was the primary factor for choosing the product for roughly 84 % of those who bought fair trade and organic certified bananas. For buyers of certified eggs or wine, the share was 37 % and 33 % respectively. Among the buyers of certified wine, the importance of the label in the buying decision was spread almost evenly between primary, impact, and no impact. Among organic egg-buyers, in most cases the eco-label had an impact on the buying decision (36.6%), and second-most often it was the primary reason for selecting the product (33.3% of the cases).

Table 6 Impact of eco-label on product choice by product group

	Banana		**Eggs**		**Wine**		**All products**	
Role of eco-label	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Primary factor	26	83.8	11	36.6	10	33.3	47	51.6
Impactful	3	9.6	14	46.6	11	36.6	28	30.7
No effect	2	6.4	5	16.6	9	30.0	16	17.5
Total	31	100	30	100	30	100	91	100

Figure 21 below presents the relationship between level of ethical involvement and the role of an eco-label in a buying decision. In 'no effect' group the three levels of ethical involvement are almost equally represented, with low involvement group leading by 7 % difference. In the group where the eco-label was the primary factor in the buying choice, 55 % of the people had high, 34 % medium, and 11 % low level of ethical involvement. We can see that the trend for high involvement is growing, from 31 % to 39 % and finally to 55 % in 'no effect', 'impactful', and 'primary reason' groups respectively. The rate of low ethical involvement is at strikingly high 38 % among the 'no effect' group and then takes a dramatic drop in the 'impactful' (4 %) and 'primary reason' (11 %) groups. The behaviour of the rate of medium involvement is again unclear, temporarily rising in the 'impactful' group but then falling in the 'primary reason' group. There seems to be a correlation between these variables. According to chi square test, between the involvement levels, the impact of the label differs by: df=4, X^2=14, p=0.007.

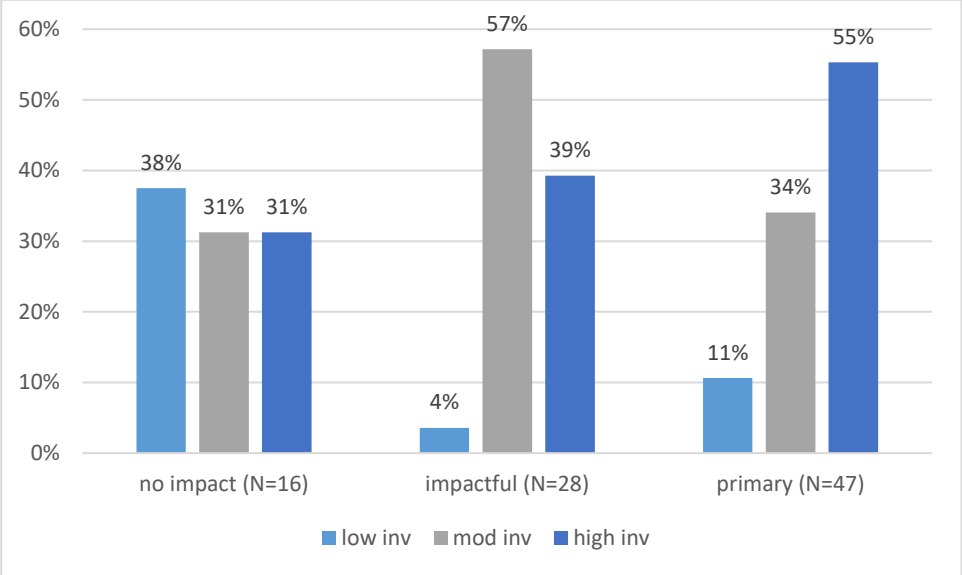

Figure 21 The rate of ethical involvement levels as per the impact of eco-label in buying decision

In Figure 22 below are presented the factors that affected the buying decision when the eco-label had no effect (the 'no effect' group). In this group, taste was a considered factor in 50 % of the cases, and the habit of buying the said product in 21 %. For thirteen per cent trying out a new product was a factor, and for twelve per cent the suitable price was important. Only four per cent out of this group reported a familiar brand to have an effect.

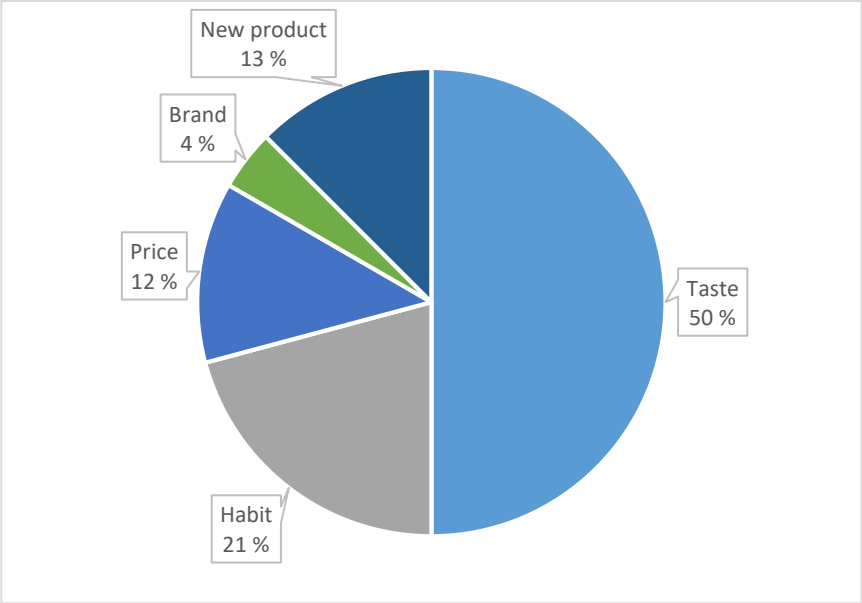

Figure 22 Factors affecting product choice in the ‘no effect’ group

Figure 23 below showcases how frequently factors, other than the presence of an eco-label, were mentioned as a factor in the buying decision, in the whole sample. Taste is again the most frequently mentioned factor, playing a part in about 33 % of the cases, followed by the habit of buying the product in question (26 %). Eleven per cent of the whole sample mentioned that they were intentionally trying out a product that was new to them. The rest of the factors were mentioned by less than ten per cent of the whole sample. Only the organic eggs were also local products, and 14 people (almost half) of those 30 who bought these eggs mentioned that the localness was one of the reasons for buying the product – for many this was the primary reason, and many had visited the farm themselves. The 15 % of the whole sample that reported localness to be a factor were all in the egg category.

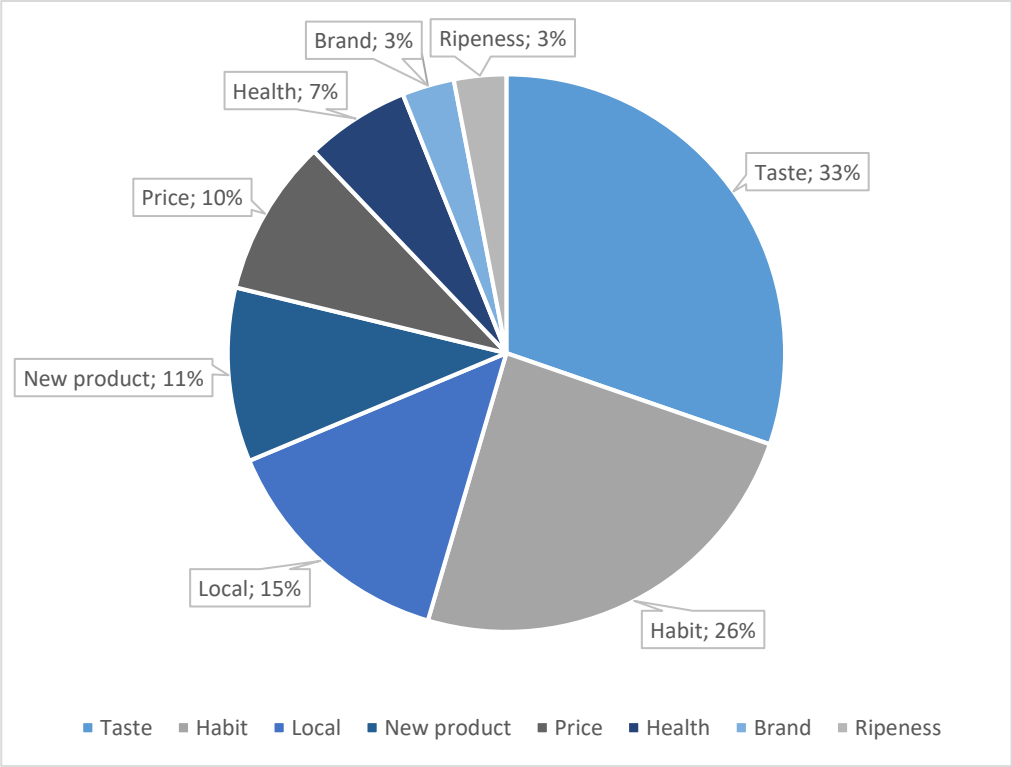

Figure 23 The frequency of factors other than eco-label affecting the product choice

The consumers were asked what the present eco-label stands for in their understanding, and the outcomes of this question are portrayed in Figure 24 below. As all the eggs were organic eggs, bananas fair trade and organic certified, and wines most frequently organic wines (in some cases also vegan or fair trade), this question most often referred to organic labels specifically. Most often, 53 times in total, the consumers mentioned the absence or lesser amount of chemical fertilizers or pesticides used in the production. A very common concept associated with organic labels was 'purity', mentioned 35 times in total. Health and environmental friendliness were also commonly recognised concepts, both mentioned 26 times in total. 'Compensation' mentioned by only 11 people stands for fair compensation to farmers, and accounts for the fair trade label, although some people also associated this with organic labels. Eight of those eleven people are banana buyers, and considering these bananas were fair trade certified (as well as organic), only eight out of 31 people mentioned fair compensation. Out of the 30 people who bought eggs, 10 mentioned animal welfare. Eleven people suggested that organic was 'more natural', which is an abstract and unspecific concept similarly to 'purity', though, in principle, organic farming utilises more natural solutions such as natural fertilisers instead of synthetic ones. The association with these concepts suggests that these people are relying on impressions instead of theoretical knowledge, unless they were also able to mention more specific meanings such as the absence of chemical fertilizers.

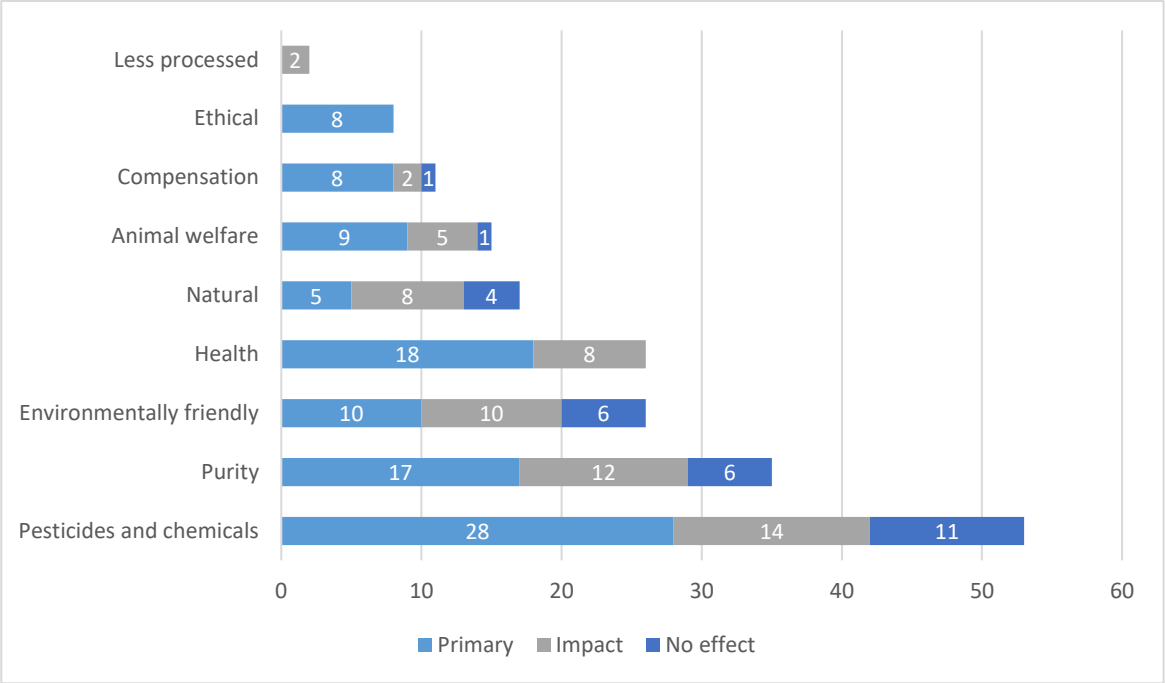

Figure 24 Concepts and meanings associated with eco-labels

Out of all the 193 votes on the different meanings, the group that chose the products primarily based on the eco-label mentioned 103 (53 % of all votes) meanings altogether, while 'impactful' group mentioned 61 (31 % of all votes), and the 'no effect' group 29 (15% of all votes). 52 % of the consideration of chemicals came from the 'primary reason' group, which also considered health much more frequently than the other groups.

Figure 25 presents the share of different levels of trust in eco-labels depending on the role of eco-label in buying decision. When the eco-label had no effect, medium trust (41 %) was the dominant trust level, followed by low trust (29%) and high trust (24 %) surprisingly at almost similar ratios. When the eco-label was one of the factors but not primary, 57 % of the trust was high, 18 % medium and 25 % low level. When the eco-label was the primary factor, high (45 %) and medium (53 %) trust were almost level, while the share of low trust fell to 2 %. The trend of low trust seems to be falling when moving from 'no effect' (25 %), through 'impactful factor' (14 %) to 'primary factor' (2 %). The share of high trust grows from 'no effect' to 'impactful', and then drops. The major difference occurs between no effect and 'impactful' groups. According to chi square test, between the trust levels, the impact of the label differs by: df=4, X^2=11.91, p=0.018.

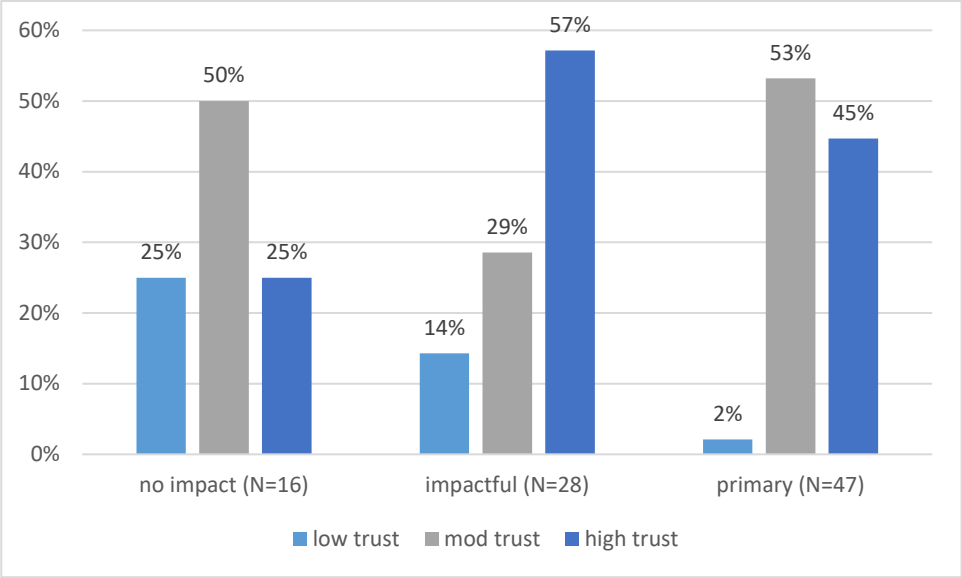

Figure 25 Level of trust in eco-labels as per importance of eco-label in buying decision

Figure 26 shows the ratio of each level of PCE for each group of eco-label's impact on decision. The ratio of high PCE grows toward the 'primary factor' group by 15 %, and low PCE decreases by 21 % altogether. The medium PCE grows slightly, by 4 %. It seems that the level of PCE and the importance of eco-label are correlated. The higher the PCE, the more important the role of eco-label. However, according to chi square test, between the PCE levels, the impact of the label differs by: df=4, X^2=3.18, p=0.528, so the differences may be caused by the sampling and not be credible indications.

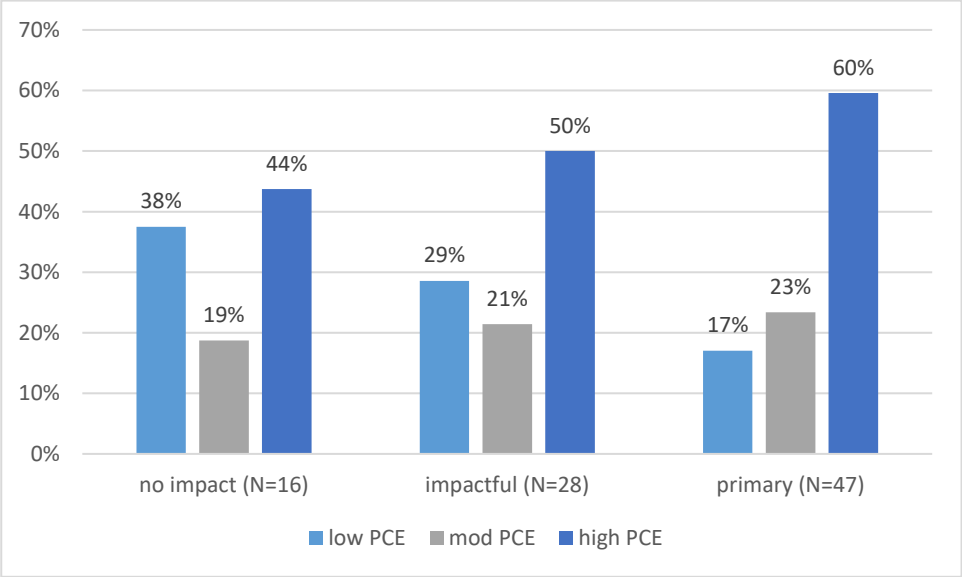

Figure 26 Shares of PCE degrees as per the effect of an eco-label in a buying decision

5.5 Truth table analyses

Truth tables show what kind of combinations of variables lead to a specific outcome. Each row in the table represents one combination and the frequency tells how many times this combination resulted in the selected outcome. Variables for the truth table analyses were selected based on the results of the previous analyses, attempting to find the variables that are connected to the significance of the eco-label in buying decision. As I am interested in the frequency of incidents, these truth tables include the or cases that occurred at least three times – the no. column refers to number of incidents. According to the first truth table, Table 7, there were thirteen cases where there was moderate trust, high PCE, high product category involvement, and high ethical involvement. Out of these cases 69 % utilized the label as the primary factor in buying decision, 23 % as one of the factors, and 8 % did not consider the label at all. There were eleven cases where the trust, PCE, food category involvement and ethical involvement were all at high degree. Out of these, 63 % were included in the 'primary factor' group, 36 % in the 'impactful factor' group, and none in the 'no impact' group. All the variables remain at high or moderate degree in all cases except the one on the last row, where PCE is at low degree. With a few exceptions, as the degree of any of the variables (trust, PCE, product category involvement, ethical involvement) decreases, the share of cases belonging to the primary factor group decreases as well.

Table 7 Truth table: trust, PCE, and involvement as determinants of eco-label impact

					Primary		**Impact**		**No impact**	
Trust in eco-labels	**PCE**	**Food inv.**	**Ethical inv.**	**No.**	**%**	**F**	**%**	**F**	**%**	**F**
moderate	high	high	high	13	69 %	9	23 %	3	8 %	1
high	high	high	high	11	63 %	7	36 %	4	0 %	0
high	high	high	moderate	5	40 %	2	40 %	2	20 %	1
high	moderate	high	moderate	4	50 %	2	50 %	2	0 %	0
moderate	high	high	moderate	4	50 %	2	25 %	1	25 %	1
high	moderate	moderate	moderate	3	67 %	2	33 %	1	0 %	0
high	high	moderate	moderate	3	67 %	2	33 %	1	0 %	0
high	low	high	moderate	3	33 %	1	67 %	2	0 %	0

The second truth table, Table 8, tests the variables trust in eco-labels, eco-label awareness, PCE, and ethical involvement. The number of eco-labels varies from 1-2 to 5-6, but the degree of other variables

is always high or moderate, and again, with most of the cases, majority of these cases come from 'primary factor' group, and the rest from 'impactful factor' group, except for three cases where 20-33 % of the incidents come from 'no impact' group.

Table 8 Truth table: trust, awareness, PCE, and ethical involvement as determinants of eco-label impact

					Primary		Impact		No impact	
Trust in eco-labels	**Eco-label awareness**	**PCE**	**Ethical inv.**	**No.**	**%**	**F**	**%**	**F**	**%**	**F**
high	1-2	high	high	6	67 %	4	33 %	2	0 %	0
moderate	1-2	high	high	5	60 %	3	40 %	2	0 %	0
moderate	3-4	high	high	5	100 %	5	0 %	0	0 %	0
moderate	5-6	high	high	5	60 %	3	20 %	1	20 %	1
high	1-2	moderate	moderate	4	50 %	2	50 %	2	0 %	0
high	1-2	high	moderate	4	50 %	2	25 %	1	25 %	1
high	3-4	high	moderate	4	75 %	3	25 %	1	0 %	0
high	5-6	high	high	4	50 %	2	50 %	2	0 %	0
high	3-4	moderate	moderate	3	67 %	2	33 %	1	0 %	0
moderate	5-6	high	moderate	3	33 %	1	67 %	2	0 %	0
moderate	1-2	moderate	high	3	67 %	2	0 %	0	33 %	1
high	3-4	high	high	3	67 %	2	33 %	1	0 %	0

Table 9 tests which combinations of age, sex, and education are most common, how well these combinations determine the importance of the eco-label in a buying decision. There is a lot of variation, as the highest number of any combination is five. In these combinations, the age varies between 25-34, 55-64 and over 65, sex is dominated by females, and education by basic, vocational and bachelor level education. Twelve of these combinations resulted in eco-label being the primary reason, thirteen cases resulted in impactful eco-label, and five cases in no impact on the eco-label's part. For instance, where were five women of over 65 with basic education, and 40 % of them used eco-label as the primary reason for selecting a product, 40 % of them as one of the reasons, and for 20 % it has no impact on the buying decision.

Table 9 Truth table: age, sex and education as determinants of eco-label impact

				Primary		Impact		No impact	
Age	**Sex**	**Education**	**Total no.**	**F**	**%**	**F**	**%**	**F**	**%**
over 65	F	Basic	5	2	40 %	2	40 %	1	20 %
55-64	F	Vocational	5	1	20 %	2	40 %	2	40 %
over 65	F	Vocational	5	4	80 %	1	20 %	0	0 %
25-34	M	Vocational	5	1	20 %	4	80 %	0	0 %
25-34	F	Bachelor	5	1	20 %	3	60 %	1	20 %
over 65	F	Bachelor	5	3	60 %	1	20 %	1	20 %
25-34	F	Master	4	3	75 %	1	25 %	0	0 %
55-64	M	Master	4	1	25 %	1	25 %	2	50 %
55-64	M	Vocational	3	2	67 %	1	33 %	0	0 %
over 65	M	Vocational	3	2	67 %	0	0 %	1	33 %
35-44	F	Bachelor	3	2	67 %	1	33 %	0	0 %
45-54	F	Bachelor	3	2	67 %	0	0 %	1	33 %
55-64	F	Bachelor	3	3	100 %	0	0 %	0	0 %
35-44	M	Bachelor	3	2	67 %	1	33 %	0	0 %
45-54	M	Bachelor	3	3	100 %	0	0 %	0	0 %
over 65	M	Bachelor	3	2	67 %	1	33 %	0	0 %

Referring to the model of eco-label use in Chapter 3, according to the results of the analyses, socio-demographic qualities are not a strong determinant of ethical involvement. Higher education is a determinant of high or at least moderate level of involvement, but sex and income are not discriminating, and the implications of the impact of age were unclear. Involvement and trust in eco-labels are correlated, but awareness of eco-labels is not related to involvement. Trust and PCE are related: the higher the trust, the more the PCE grows. The higher the trust, the more likely the consumer is to pay attention to the label. The more involved the consumer is, the more significant the eco-label is in their product choice. PCE also seems to be a determinant of significance of the eco-label, but this cannot be confirmed as according to the chi square test, this result can be caused by sampling. Some of the connections of the model were verified to work, but the model needs to be developed further, and the significance of the socio-demographics should be questioned.

6 DISCUSSION

Product category involvement, referring to the perceived importance associated with selecting the product in question – in this case, bananas, eggs, or wine – was surprisingly high. Eggs exhibited high involvement by 80 % and bananas by 71 %. Perhaps surprisingly, wine exhibited comparatively low 50 % rate of high involvement. These results suggest that everyday food products may also be high involvement goods, in line with Saba and Messina (2003), according to whom those who were most likely to purchase organic produce were more involved with them, than those less likely to buy organic food, as mentioned in chapter 2.3.2.

Of the whole sample, 46 % reported high ethical involvement levels, meaning that they always tried to buy the ethical option, even if this meant paying a higher price. This correlates with LOHAS heavy segment. Moderate level of ethical involvement was associated with the 41 % of the sample who aspired to choose the ethical option, but were more sensitive to price, availability and convenience. This finding supports with Verain et al.'s (2012, 129) profile of the potential green segment who consider price, health and naturalness in addition to environmental aspects, as mentioned in chapter 2.3.2. Moderate level of ethical involvement can be associated with potential green segment, but also with LOHAS medium. This is also in line with perceived time barriers and increased inconveniences as hindrances to pro-environmental (or ethical) consumption, as suggested by Grankvist & Biel (2001, 409-410) in chapter 2.3.2. Low involvement was represented by the 13 % who reportedly did not try to select ethical food products.

The two most frequently mentioned ethical buying behaviours that the respondents could think of were favouring local food products, mentioned by 76 % of the respondents, and favouring organic food products, mentioned by 65 %. Other practices, such as favouring eco-labelled, fair-trade or plant-base products, or controlling for production transparency, were each mentioned by less than 25 % of the sample. The sustainable food consumption behaviours that were presented in chapter 2.1.3, included following a plant-based diet, favouring organic, fairly traded and local products (or avoiding long-transport goods), favouring fresh or frozen foods, and avoiding meat, processed foods. The sample succeeded in mentioning local and organic foods, but for instance fair trade, plant-based products were associated with ethical buying behaviour only by a few. Instead, many mentioned organic meat as an ethical act. Overall, the consumers were ready to tell about responsible buying behaviour regarding cosmetics or clothes but were struggling to come up with similar behaviour

related to grocery shopping. This suggests that the general knowledge concerning the ethical buying behaviour in relation to food specifically is quite narrow.

Both sexes exhibit large shares of medium and high ethical involvement. When testing for connections between sex and the degree of involvement, it was found that men, with 18.4 %, seem to exhibit higher share of low involvement than women, with 9.4 %, and vice versa women exhibit higher share of in moderate degree of involvement than men. However, the shares of high involvement between the two sexes are almost on the same level, with women (47.2 %) slightly in the lead to men (44.7 %). The question measuring ethical involvement can be considered a measure of responsible buying behaviour; this means our results are in line with the indications in literature suggesting that responsible buying behaviour is not influenced by gender (De Pelsmacker 2005b, 378; Gilg et al. 2005, 501-502; Pedrini & Ferri 2014, 134). If we associate environmentalism and ethical involvement, the higher share of low involvement among men may be connected to Gilg et al.'s (2005) findings that non-environmentalists are most likely male (Gilg et al. 2005, 493), as mentioned in chapter 2.3.2.

The share of high involvement seems to grow as age gets higher. Among the two oldest age brackets of 55-64 and over 65, the shares of high involvement were 52 per cent and 58 per cent respectively. The share of moderate involvement (distinguished by the aim to make the ethical choice, but also sensitivity to other attributes such as price) is high among 25-34- and 35-44-year-olds. These results correspond with Panzone et al.'s (2016) findings (see chapter 2.3.3), according to which older consumers are more frequently taking part in responsible consumer behaviour (high involvement), while younger consumers express more environmental concern while not necessarily taking the appropriate action. Similar to the results of Pedrini & Ferri (2014, 134), high tendency toward responsible consumerism was more present with those older than 35 years. Older age groups exhibited high degree of involvement, unlike Morrison & Beer's (2017, 97) conclusion that environmental awareness deteriorated with the oldest age group – however, the last age bracket in this study includes all ages higher than 65, so the data may or may not include people from similar age group as that of 'the oldest age group' of Morrison & Beer (2017). It is possible that understanding and awareness concerning ethical issues grows with age, leading to higher involvement.

The analyses for the connection between ethical involvement and education level do not reveal a strong connection, as the basic education group stands out with its high share of high involvement. The share of low involvement is decreasing as the level of education grows, however the effect of

education on high degree of involvement is more complex. Basic education exhibits a strikingly high share of high involvement, however this basic education group consisted of those over 55 years old; possibly the effect of age on involvement is stronger than that of education. If we put basic education aside, vocational school and bachelor's level had the highest share of high involvement; with master's degree the share of high involvement takes a significant drop. So, only considering education levels from high school to bachelor level education, the share of high involvement is growing, and low involvement decreasing. Vocational school education is in lowest level tertiary education category, so it is included as high education. This means that these results are in line with de Pelsmacker et al. (2005b) according to whom the major distinction lies between consumers who have finished upper secondary school (or high school) and consumers with higher education. The considerable difference between vocational and upper secondary school, however, is surprising.

Income did not seem to have a clear effect on the degree of ethical involvement. This correlates with Dickson's (2001) findings according to which income was not a discriminating factor. Many other studies have discovered a relationship between the variables, but often a weak one (Maignan & Ferrell 2001, 473; Hines et al. 1987, 5; Pedrini & Ferri 2014, 134), as explained in chapter 2.3.3.

The low trust and high trust groups had, perhaps surprisingly, quite similar involvement profiles, with dominating moderate involvement, followed by high involvement, and low ethical involvement having clearly the smallest share. Moderate trust group instead exhibited the highest share of high ethical involvement, but also a slightly higher share of low involvement than the other two trust groups. These results suggest no causal relation between involvement and trust. The moderate trust group was distinguished from high trust group by its slight distrust or conditional trust in eco-labels. Interestingly, without separately asking, 15 % of the sample (all from the moderate trust group) specifically mentioned that they had a solid trust in eco-labelled products in Finland. This may suggest that consumers are aware of the strict package labelling policy, overseen by Evira, but no certain conclusions can be drawn, as this was not asked separately.

Major share of the sample, 47 % were aware of 1-2 eco-labels out of the six presented to them. The share of familiar labels dropped evenly from there, first to 33 % with 3-4 familiar labels, and to 18% with 5-6 familiar labels. Almost the whole sample recognised the Finnish eco-label, 63 % the fair trade label, and 47 % the organic label of EU. It is surprising that there is such a difference in the degree of awareness between Finnish and EU eco-labels. This may be connected to higher trust in Finnish eco-labels and Finnish eco-labelled products, but also indicates that the EU organic label,

which is a picture with no text, does not communicate its meaning very well, while the Finnish organic label, which has the Finnish word for 'organic', does. Rainforest alliance, MCS and UTZ labels were each recognised by less than 23 % of the sample. Awareness of eco-labels and ethical involvement seem to be correlated: the proportion of those with high awareness of labels grows as the level of involvement grows; and correspondingly, the proportion of those with low awareness concerning eco-labels decreases at the involvement grows.

There was found no relationship between PCE and awareness of eco-labels. The general degree of PCE was quite high, as 54 per cent of the sample exhibit high, 22 % moderate and 24 % low degree of PCE. Most frequently the consumers believed their buying behaviour to have an effect on the selection (47/91 pcs), the environment (46/91 pcs), and the producers (38/91 pcs). The higher the PCE, the more they could name the objects of buying behaviour's impact, suggesting that higher understanding causes higher PCE.

The group with low trust in eco-labels exhibits a dramatically high share of low PCE, and marginal shares of moderate and high degrees of PCE, while the moderate and high trust groups exhibited dominating shares of high degree PCE. The trend for high and moderate PCE was growing, but decreasing for low PCE. The results indicate that level of trust in eco-labels has a causal relation to PCE level.

The rate of attention to eco-label was very high, as 92.3 % noticed the label while the remainder 7.6 % said they did not. According to Thøgersen (2000, 305-306; 2002, 93) consumers need to first trust the labels before they will pay attention and utilize the labels in their purchase decisions, as explained in chapter 3. As there are only seven people among those who did not pay attention to the label, it is hard to draw conclusions; however, six out of these seven people exhibited moderate (3 pcs) or low (3 pcs) level of trust in eco-labels.

Looking at the eco-label's significance in the buying decision, roughly 52 % of the sample selected the product primarily based on the eco-label, some 31 % stated that the eco-label had an impact in selecting the product (but no dominating effect), and 17 % said the label had no impact on the product choice. For the organic banana buyers, the eco-label was a significant factor in the buying decision: it was the primary factor for 84 % of the sample. The buyers of exhibited almost equal shares of primary factor, affecting factor and no impact. Among those who bought organic eggs, the eco-label was most commonly one of the impacting factors (36.6%), followed by primary impact (33.3%), and

no impact. In addition to being organic, the eggs were a local product, and this was an important factor to many: to 6 of those 14 who found the label impactful, and to five of those 11 who found it the primary factor, and to three of those five to whom the label was no significant factor in the buying decision. As Gilg et al. (2008, 502) stated, purchase priorities are likely to be important, concerning trade-offs associated with price, health, safety, buying locally and environmental friendliness, as previously mentioned in 2.3.3.

The results suggested a causal connection between involvement and the importance of the eco-label. The degree of high involvement is growing, from 31% in 'no effect' to 39% in the 'impactful', and finally to 55% in the 'primary impact' groups. The share of low ethical involvement is at strikingly high 38 % among the 'no effect' group and then takes a dramatic drop in the 'impactful' (4 %) and 'primary factor' (11 %) groups. This supports Grunert et al.'s (2014, 188) statement that when eco-labels are available, consumers will utilize them in decision-making provided that they are involved.

Other product attributes besides the eco-label affected the product choice as well. Taste was perceived significant by a third of whole sample (all eco-label impact groups) and by half of the cases where the label had no effect ('no effect' group). The habit of buying the said product was a factor in a quarter of all the cases, while in the 'no effect' group this was a factor in 21 % of the cases. Factors such as willingness to try out a product new to them and suitable price of the product were mentioned by less than 10% of the whole sample, and in the 'no effect' group by 13 and 12 % respectively. This implies that those who did not utilize eco-label in their buying decision were mostly concerned with taste and often bought the product based on habit, instead of attempting to make a responsible buying decision. Unfortunately, the study did not record which attribute was the primary factor in the buying decision when the eco-label had no effect. Some banana-buying interviewees reported that they suffered from an illness (e.g. asthma, intestinal disease, or just wounds inside the mouth) and found the conventional bananas to worsen their condition, causing the symptoms to occur, while this did not happen when eating organic bananas, and some of these people had noticed a similar pattern between other conventional and organic fruits. An upset stomach as a symptom from consuming conventionally farmed bananas or apples was mentioned several times.

Most often the eco-label (organic label) was associated with the absence or lesser amount of chemical fertilizers or pesticides used during the production stage. Connections to vague concepts such as purity, mentioned by 35/91 of the sample (38.4 %), and natural, mentioned by 17/91 people (18.6 %), would suggest that these people are relying on impressions instead of more specific knowledge,

however, in most of the cases people mentioned both chemical fertilizers and purity and/or naturalness. Besides the use of chemicals, people did not have a very high understanding on what the organic label means in practice. Some also said that it is ‘something good’ or ‘something positive’ but those responses were not recorded here. Only eight out of 31 people buying the organic fair trade bananas mentioned fair compensation, however this may be due to the fact that the consumers only paid attention to one of the available eco-labels. A third of egg-buyers mentioned the improved living conditions of production animals. 53 % of the total of mentioned eco-label meanings came from the group which eco-label was the primary factor, 31 % came from the group to which eco-label was impactful but not primary, and the remaining 15 % from those to whom the eco-label had no effect. This implies that the higher the priority of the eco-label, the more the people have knowledge, or at least impressions, on the topic.

The share of low trust as per the significance of the eco-label seems to decrease as the eco-label’s significance grows. The share of high trust is highest when the eco-label is among the significant factors, but falls when it is the primary factor. These results imply than moderate trust is sufficient for considering the label in making the buying decision or making label the primary attribute. This supports the findings of Thøgersen (2000, 305; 2002, 93), according to whom consumers only utilize the labels if they trust them, as discussed in chapter 3.

The results show that the degree of PCE grows the significance of the eco-label, supporting the findings of studies that indicate that consumers are more likely to buy in a more sustainable manner when they feel that their buying choices will have an impact on the environment and affect future policy (Kinnear et al. 1974, 22; Tucker 1980, 335-336; Roberts 1996a, 226; Gilg et al. 2005, 494-495).

Based on the truth tables, when occurring together, 24 (24/91) consumers displayed moderate or high trust in eco-labels, high perceived consumer effectiveness, high product category involvement, and high ethical involvement. Out of these people, 16 (66%) used the label as the primary factor in buying decision, seven (29 %) as an impactful factor, and the rest did not consider the label at all. Also in the other most frequent coincidences of the aforementioned variables, all the variables remain at high or moderate degree. In general, as the degree of any of the variables decreases, the share of cases belonging to the primary factor group decreases as well. It seems that number of familiar eco-labels, or awareness of eco-labels, is not related to the significance of the eco-labels.

7 CONCLUSION

The purpose of the study was to find what is the eco-labels' role in green consumer behaviour. This was scrutinized through building an understanding of how involved consumers are in food buying decisions, both in respect to food category and the ethical implications of buying the product. Then, we look at consumers' relationship with eco-labels by examining paying attention to the labels, awareness of the labels, the impact of eco-labels on buying decision, and lastly the factors that affect the significance of the label. The following section will summarise the findings to provide an answer to the research questions. The second section will suggest the theoretical contribution of the findings, and the third and last section will lay down the limitations of the study and propose implications for further studies.

7.1 Summary of the findings

RQ1. 'What is consumers' relationship to ethical buying behaviour regarding food products?'

In this study it was found that everyday food products can be high involvement goods, and therefore consumers can be expected to deliberate when making buying decision, but also to follow or be affected by the established pattern of product selection after the initial product choice. The general degree of ethical involvement regarding food products is also high, as only 13 per cent at large were not inclined to make the ethical choice. High degree of involvement is not affected by gender, but low involvement is higher among men. Ages from 25 to 44 are likely to consider the ethical aspects but are also sensitive to price and convenience. Ethical involvement grows with age, possibly due to increased understanding and awareness on ethical issues. Ethical involvement is higher among higher education. Income has no effect on ethical involvement.

The more consumers knew about the impacts of their food buying behaviour, the higher was their perceived consumer effectiveness. In general, consumers have a narrow knowledge concerning ethical buying behaviour when it comes to grocery shopping. Most frequently, consumers associated ethical food buying behaviour with favouring local food products and organic products, while other practices were mentioned by less than a quarter of the population.

RQ1. ‘What is consumers’ relationship with eco-labels?’

Finnish consumers are very familiar with Finnish organic label, over 60 % know the fair trade label and less than 50 % the organic label of EU. Other eco-labels such as UTZ, MCS and Rainforest Alliance are less familiar to consumers. It seems that inclusion of text makes eco-labels more self-explanatory. The higher the involvement, the more the consumer is aware of labels. Perceived consumer effectiveness has no effect on awareness. Almost the whole population, 92 % pay attention to the presence of an eco-label in the product selecting situation. Out of the buyers of eco-labelled food products, roughly half buy the product based on the presence of the eco-label, for about 30 % the eco-label has an impact on the product choice, and the rest buy it for other reasons, most frequently due to taste and habit.

RQ3. ‘Which factors contribute to the use of eco-labels in buying decision?’

To utilize the label, the consumer needs to pay attention to the label first. The more people have knowledge or positive impressions on the eco-label, the more concerned they are with making a responsible buying decision (ethical involvement), and the higher the priority of the eco-label in buying decision. The level of PCE seems to correlate with the importance of the eco-label. Already moderate level of trust in eco-labels increases the priority of the presence of the eco-label in a buying decision.

7.2 Theoretical contribution

Considering that 65 % of the interviewees claimed that they aspired to buy organic food products but only 43 % of the sample recognised the organic label or EU, while as many as 98 % recognised the Finnish organic label, it seems that the EU organic label does not perform very well in Finland. This is probably due to the fact that the label is not self-explanatory, compared to the Finnish label which seems to be well known. In general, the awareness of other labels than the Finnish organic label and fair trade label is weak.

If the certifying organisations want their labels to be more known and perform better, consumer education and informing on the matters of sustainability. Eco-label has a strong significance in buying decision when the consumer wants to act responsibly, believes that their choices count and contribute

to making a difference, and when the consumer understands and believes in the eco-label's message. Through developing these dimensions associated with the label, eco-labels can perform better.

7.3 Limitations and future studies

The selected products do not represent the optimal "green choices" when considering the criteria of what makes a product a sustainable option. For instance, bananas, despite being plant products, organic and fairly traded, are still imported from Peru, giving them a significant carbon footprint. Therefore, the consumers buying these may not fall into the green segment. A local or domestic grown organic apple would have a considerably lower environmental effect. Eggs, not being plant-based products are not bought by consumers avoiding all animal products. However, the wellbeing of the animals is significantly better with organically farmed chicken, and the price premium of organic chicken eggs is considerable in comparison to the conventional produce.

When examining the consumers trust toward eco-labels and eco-labelled products, many interviewees spontaneously announced that they trusted the label if it was Finnish, or that they trust the eco-labels in Finland, depending on the interviewee. The topic of trust toward Finnish eco-labels, Finnish officials or certifying organisations controlling for the compliance of the set standards could be investigated further in future studies.

The discussion section found a possible connection with PCE and higher understanding, but as the interview questions were not designed to provide data to provide the answer, this connection is only speculation and could be investigated further. An interesting finding was also the perceived health impacts of organic products, as many consumers with an illness (or some even without a reported illness) stated that they could feel a clear difference in their condition if they consumed organic or conventional fruit. There is a lot of controversy about the claimed health effects of organic products. It could be appropriate to look into the potential negative or potential health effects of the nutrients in organic and conventional products, but also the effects of chemicals used in the farming of these products.

Overall, this study could be taken to a broader view, to find how much eco-labels contribute to enhanced responsible consumer behaviour when it comes to food products, as opposed to how much they contribute to perceived healthy food consumption. There is certainly debate on the economic and environmental sustainability of organic farming.

REFERENCES

Alasuutari, P. 2011. Laadullinen tutkimus 2.0. Tampere: Vastapaino.

Atkinson, L. & Rosenthal, S. 2014. Signaling the Green Sell: The Influence of Eco-Label Source, Argument Specificity, and Product Involvement on Consumer Trust. *Journal of Advertising,* vol. 43, iss. 1, pp. 33-45.

Auger, P. & Devinney, T. 2007. Do What Consumers Say Matter? The Misalignment of Preferences with Unconstrained Ethical Intentions. *Journal of Business Ethics*, vol. 76, iss. 4, pp. 361–383.

Balderjahn, I., Peyer, M., & Paulssen, M. 2013. Consciousness for fair consumption: conceptualization, scale development and empirical validation. *International Journal of Consumer Studies,* vol. 37, iss. 5, pp. 546–555.

Bansal, P. 2002. The corporate challenges of sustainable development. *Academy of Management Executive*, vol. 16, iss. 2, pp. 122–131.

Baroni, L., Cenci, L., Tettamanti, M. & Berati, M. 2007. Evaluating the environmental impact of various dietary patterns combined with different food production systems. *European journal of clinical nutrition*, vol. 61, iss. 2, pp. 279–806.

Beardsworth, A. & Keil, T. 1991. Health-related beliefs and dietary practices among vegetarians and vegans: A qualitative study. *Health Education Journal*, vol. 50, iss. 1, pp. 38–42.

Beattie, G. & Sale, L. 2011. Shopping to save the planet? Implicit rather than explicit attitudes predict low carbon footprint consumer choice. *The International Journal of Environmental, Cultural, Economic and Social Sustainability*, vol. 7, iss. 4, pp. 211–232.

Beharrel, B. & Denisson, T.J. 1995. Involvement in a Routine Food Shopping Context. *British Food Journal,* vol.107, iss. 7, pp. 24–29.

Bird, K. & Hughes, D.R. 1997. Ethical Consumerism: The Case of ‘‘Fairly-Traded’’ Coffee. *Business Ethics*: *A European Review*, vol. 6, iss. 3, pp. 159–167.

Bray, J., Johns, N. & Kilburn, D. 2011. An exploratory study into the factors impeding ethical consumption. *Journal of Business Ethics*, vol. 98, pp. 597–618.

Brécard, D. 2014. Consumer confusion over the profusion of eco-labels: Lessons from a double differentiation model. *Resource and Energy Economics*, vol. 37, pp. 64-84.

Brunsø, K. & Grunert, K.G. 1995. Development and testing of a crossculturally valid instrument: food-related lifestyle. *Advances in Consumer Research*, vol. 22, pp. 475–480.

Buerke, A., Straatmann, T., Lin-hi, N. & Müller, K. 2016. Consumer awareness and sustainability-focused value orientation as motivating factors of responsible consumer behaviour. *Review of Managerial Science*, vol. 9, iss. 13, pp. 1–33.

Burlingame, B. & Dernini, S. (eds). 2012. Sustainable Diets and Biodiversity - Directions and Solutions for Policy, Research and Action. Rome, Italy: Food and Agriculture Organization.

Carlsson-Kanyama, A. 1998. Climate change and dietary choices—how can emissions of greenhouse gases from food consumption be reduced? *Food Policy*, vol. 23, iss. 3/4, pp. 277–293.

Chambers, S., Lobb, A., Butler, L., Harvey, K., & Traill, W.B. 2007. Local, national and imported foods: A qualitative study. *Appetite*, vol. 49, iss. 1, pp. 208–213.

Chatzidakis, A., Hibbert, S. & Smith, A. 2007. Why people don't take their concerns about fair trade to the supermarket: the role of neutralisation. *Journal of Business Ethics*, vol. 74, pp. 89–100.

Chekima, B., Wafa, S.A.W.S., Igau, O.A., Chekima, S. & Sondoh, S.L. Jr. 2016. Examining green consumerism motivational drivers: does premium price and demographics matter to green purchasing? *Journal of Cleaner Production*, vol. 112, pp. 3436-3450.

Chryssohoidis, G.M. & Krystallis, A. 2005. Organic consumers' personal values research: testing and validating the list of values (LOV) scale and implementing a value-based segmentation task. *Food Quality and Preference*, vol. 16, pp. 585–599.

Cobb-Walgren, C.J., Ruble, C.A. & Donthu, N. 1995. Brand Equity, Brand Preference, and Purchase Intent. *Journal of Advertising*, vol. 24, pp. 25–41.

Commission Regulation (EU) No 271/2010 of 24 March 2010 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007, as regards the organic production logo of the European Union.

Crane, A. 2001. Unpacking the Ethical Product, *Journal of Business Ethics*, vol. 30, iss. 4, pp. 361–373.

Dagevos, H. 2005. Consumers as four-faced creatures. Looking at food consumption from the perspective of contemporary consumers. *Appetite*, vol. 45, iss. 1. pp. 32–39.

de Boer, I.J.M. 2003. Review: Environmental impact assessment of conventional and organic milk production. *Livestock Production Science*, vol. 80, pp. 69–77.

de Boer, J., Boersema, J.J. & Aiking, H. 2009. Consumers' motivational associations favoring free-range meat or less meat. *Ecological Economics*, vol. 68, pp. 850–860.

De Pelsmacker, P., Janssens, W., Sterckx, E. & Mielants, C. 2005a. Consumer preferences for the marketing of ethically labelled coffee. *International Marketing Review*, vol. 22, iss. 5, pp. 512–530.

De Pelsmacker, P., Driesen, L. & Rayp, G. 2005b. Do consumers care about ethics? Willingness to pay for fair-trade coffee. *Journal of Consumer Affairs*, vol. 39, iss. 2, pp. 363–385.

Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R. & Bohlen, G.M. 2003. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business Research*, vol. 56, pp. 465–480.

Dickson, M.A. 2001. Utility of No Sweat Labels for Apparel Consumers: Profiling Label Users and Predicting Their Purchases. *Journal of Consumer Affairs*, vol. 35, iss. 1, pp. 96–119.

Doane, D. 2001. Taking Flight: The Rapid Growth of Ethical Consumerism: The Ethical Purchasing Index. London: New Economics Foundation.

D'Souza, C., Taghian, M. & Lamb, P. 2006. An empirical study on the influence of environmental labels on consumers. *Corporate Communications: An International Journal*, vol. 11, iss. 2, 162-173.

Dunlap, R. & Van Liere, K. 1978. The New Environmental Paradigm. *The Journal of Environmental Education*, vol.9, iss. 4, pp. 10–19.

Dunlap, R.E., Van Liere, K.D., Mertig, A.G., Jones, R.E. 2000. New Trends in Measuring Environmental Attitudes: Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of Social Issues*, vol. 56, iss. 3, pp. 425–442.

Dutra de Barcellos, M., Krystallis, A., de Melo Saab, S.M., Kügler, J.O. & Grunert, K.G. 2011. Investigating the gap between citizens' sustainability attitudes and food purchasing behaviour: empirical evidence from Brazilian pork consumers. *International Journal of Consumer Studies*, vol. 35, iss. 4, pp. 391–402.

Ecolabel Index. 2018a. Rainforest Alliance Certified [online document]. [Accessed 11 Sep 2017]. Available at http://www.ecolabelindex.com/ecolabel/rainforest-alliance-certified

Ecolabel Index. 2018b. UTZ Certified [online document]. [Accessed 11 Sep 2017]. Available at http://www.ecolabelindex.com/ecolabel/utz-certified

Engels, S. V., Hansmann, R. & Scholz, R. 2010. W. Toward a Sustainability Label for Food Products: An Analysis of Experts' and Consumers' Acceptance. *Ecology of Food and Nutrition*, iss. 49, pp. 30–60.

Eriksson, P. & Kovalainen, A. 2011. Grounded Theory Research. In: Qualitative Methods in Business Research [online document]. [Accessed 10 Dec 2017]. Available at http://dx.doi.org/10.4135/9780857028044

Fazio, R.H., Powell, M.C. & Williams, C.J. 1989. The Role of Attitude Accessibility in the Attitude-to-Behavior Process. *Journal of Consumer Research*, vol. 16, iss. 3, pp. 280-288.

Ferrell, O.C. & Gresham, L.G. 1985. A Contingency Framework for Understanding Ethical Decision Making in Marketing. *Journal of Marketing*, vol. 49, pp. 87–96.

Foley, J.A., Defries, R., Asner, G.P., Barford, C., Bonan, G., Carpenter, S.R., Chapin, F.S., Coe, M. T., Daily, G.C., Gibbs, H.K., Helkowski, J.H., Holloway, T., Howard, E.A. Kucharik, C.J., Monfreda, C. Patz, J.A., Prentice, I.C., Ramankutty, N. & Snyder, P.K. 2005. Global consequences of land use. *Science*, vol. 309, iss. 5734, pp. 570-574.

Foley. J.A., Ramankutty, N., Brauman, K.A., Cassidy, E.S., Gerber, J.S., Johnston, M., Mueller, N.D., O'Connell, C., Ray, D.K., West, P.C. Balzer, C., Bennett, E.M., Carpenter, S.R., Hill, J. Monfreda, C., Polasky, S., Rockström, J., Sheehan, J., Siebert, S., Tilman, D. & Zaks D.P.M. 2011. Solutions for a Cultivated Planet. *Nature*, vol. 478, pp. 337–342.

Furlow, N. & Knott, C. 2009. Who's Reading the Label? Millennials' Use of Environmental Product Labels. *The Journal of Applied Business and Economics*, vol.10, iss.3, pp.1-12.

Gallastegui, I.G. 2002. The use of ecolabels: a review of the literature. *European Environment*, vol. 12, pp. 316–331.

Gil, J.M., Gracia, A. & Sánchez, M. 2000. Market segmentation and willingness to pay for organic products in Spain. *International Food and Agribusiness Management Review*, vol. 3, pp. 207–226.

Gilg, A., Barr, S. & Ford, N. 2005. Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, vol. 37, pp. 481–504.

Godfray, H.C.J., Beddington, J.R., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Pretty, J. Robinson, S., Thomas, S.M. & Toulmin, C. 2010. Food Security: The Challenge of Feeding 9 Billion People. *Science*, vol. 327, iss. 5967, pp. 812–818.

Golden, J. S. (ed.) 2010. An Overview of Ecolabels and Sustainability Certifications in the Global Marketplace. Durham: Corporate Sustainability Initiative. Nicholas Institute for Environmental Policy Solutions. Duke University.

Gomiero, T., Pimentel, D. & Paoletti, M.G. 2011. Environmental Impact of Different Agricultural Management Practices: Conventional vs. Organic Agriculture. *Critical Reviews in Plant Sciences*, vol. 30, pp. 95–124.

Grankvist, G. & Biel, A. 2001. The Importance of Beliefs and Purchase Criteria in The Choice of Eco-Labeled Food Products. *Journal of Environmental Psychology*, vol. 21, iss. 4, pp. 405–410.

Grankvist, G. & Biel, A. 2007. Predictors of purchase of eco-labelled food products. *Food Quality and Preference*, vol. 18, pp. 701-708.

Grunert, K.G., Hieke, S. & Wills, J. 2014. Sustainability labels on food products: Consumer motivation, understanding and use. *Food Policy*, vol. 44, pp. 177–189.

Grunert, S.C. & Juhl, H.J. 1995. Values, environmental attitudes, and buying of organic foods. *Journal of Economic Psychology*, vol.16, iss. 1, pp. 39–62.

Guinée, J.B., Gorrée, M., Heijungs, R., Huppes, G., Kleijn, R., de Koning, A., van Oers, L., Wegener Sleeswijk, A., Suh, S., Udo de Haes, H.A., de Bruijn, H., van Duin, R., Huijbregts, M.A.J., Lindeijer, E., Roorda, A.A.H., van der Ven, B.L., Weidema, B.P. (Eds.), 2002. Handbook on Life Cycle Assessment; Operational Guide to the ISO Standards. Institute for Environmental Sciences, Leiden, The Netherlands.

Hallström, E, Carlsson-Kanyama, A. & Börjesson, P. 2015. Environmental impact of dietary change: a systematic review. *Journal of Cleaner Production*, vol. 91, pp. 1-11.

Hansen, B., Alrøe, H.F., Kristensen, E.S. 2001. Approaches to assess the environmental impact of organic farming with particular regard to Denmark. *Agriculture, Ecosystems and Environment*, vol. 83, pp. 11–26.

Hines, J., Hungerford, H. & Tomera, A. 1987. Analysis and synthesis of research on responsible environmental behavior: a meta analysis. *Journal of Environmental Education*, vol. 18, pp. 1–8.

Horne, R.E. 2009. Limits to labels: The role of eco-labels in the assessment of product sustainability and routes to sustainable consumption. *International Journal of Consumer Studies*, vol. 33, pp. 175–182.

Hoyer, W. D. (1984). An examination of consumer decision making for a common repeat purchase product. *Journal of Consumer Research*, vol. 11, pp. 822–829.

Jabs, J., Devine, C.M. & Sobal, J. 1998. Model of the process of adopting vegetarian diets: Health vegetarians and ethical vegetarians. *Journal of Nutrition Education*, vol. 30, iss. 4, pp. 196–202.

Jager, W., Janssen, M.A., De Vries, H.J.M., De Greef, J. & Vlek, C.A.J. 2000. Behaviour in commons dilemmas: Homo economicus and Homo psychologicus in an ecological-economic model. *Ecological Economic,* vol. 35, iss. 3, pp. 357-379.

Jahn, G., Schramm, M. & Spiller, A. 2005. The reliability of certification: Quality labels as a consumer policy tool. *Journal of Consumer Policy,* vol. 28, iss. 1, pp. 53–73.

Janssen, M. & Hamm, U. 2012. Product labelling in the market for organic food: Consumer preferences and willingness-to-pay for different organic certification logos. *Food Quality and Preference*, vol. 25, pp. 9–22.

Janssen, M., Heid, A. & Hamm, U. 2009. Is there a promising market in between organic and conventional food? Analysis of consumer preferences. *Renewable Agriculture and Food Systems,* vol. 24, pp. 205–213.

Jones, A. 2002. An environmental assessment of food supply chains: A case study on dessert apples. *Environmental Management*, vol. 30, iss.4, pp. 560–576.

Jungbluth, N., Tietje, O. & Scholz, R.W. 2000. Food Purchases: Impacts from the Consumers' Point of View Investigated with a Modular LCA. *International Journal of Life Cycle Assessment*, 5, pp. 134 142.

Kihlberg, I. & Risvik, E. 2007. Consumers of organic foods – value segments and liking of bread. *Food Quality and Preference*, vol. 18, pp. 471–481.

Kinnear, T.C., James, T. & Ahmed, S.A. 1974. Ecologically Concerned Consumers - Who Are They. *Journal of Marketing,* vol. 38, iss. 2, pp. 20.

Kirchmann, H. & Thorvaldsson, G. 2000. Challenging targets for future agriculture. *European Journal of Agronomy*, vol. 12, pp. 145–161.

Koivula, H. interviewed by Iiris Ikonen 12.4.2017. University of Helsinki, Helsinki.

Korhonen, V., Jokinen, S. & Joutsela, M. 2014. Is Your Package Pro-LOHAS? Findings of the Finnish LOHASPACK Study 2011–2014 [online document]. [Accessed 10 Jan 2018]. Available at https://ptr.fi/Raportit/lohaspack_project_report_2014.pdf

Krier, J-M. 2001. Fair Trade in Europe 2001: Facts and Figures on the Fair Trade Sector in 18 European Countries. Maastricht: EFTA Research Report.

Kuudes Helsinki. 2016. The Informed Consumer: The Finnish Study [online document]. [Accessed 11 Sep 2017]. Available at http://theinformedconsumer.fi/wp-content/uploads/2016/09/kuudes_kerros_the_informed_consumer_presentation.pdf

Lea, E. 2005. Food, health, the environment and consumers' dietary choices. *Nutrition and Dietetics*, vol. 62, pp. 21–25.

Lee, J.A. & Holden, S.J.S. 1999. Understanding the determinants of environmentally conscious behaviour. *Psychology & Marketing*, vol. 16, iss. 5, pp. 373-392.

Loureiro, M.L., McCluskey, J.J. & Mittelhammer, R.C. 2002. Will consumers pay a premium for eco-labeled apples? *Journal of Consumer Affairs*, vol. 36, iss. 2, pp. 203-219.

Loureiro, M.L. & Lotade, J. 2005. Do fair trade and eco-labels in coffee wake up the consumer conscience? *Ecological Economics*, vol. 53, iss. 1, pp. 129-138.

Luomu.fi (N/A) Luomun tunnistaa merkistä [online document]. [Accessed 29 Oct 2017]. Available at http://luomu.fi/ruoka/luomumerkit/

Magnusson, M.K., Arvola, A., Hursti, U.-K.K., Åberg, L. & Sjödén, P.-O. 2003. Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour. *Appetite*, vol. 40, iss. 2, pp.109-117.

Maignan, I. & Ferrell, O.C. 2001. Corporate Citizenship as a Marketing Instrument—Concepts, Evidence and Research Directions. *European Journal of Marketing*, vol. 35, iss. ¾, pp. 457–484.

Masset, G., Soler, L-G., Vieux, F. & Darmon, N. 2014. Identifying Sustainable Foods: The Relationship between Environmental Impact, Nutritional Quality, and Prices of Foods Representative of the French Diet. Journal of The Academy of Nutrition and Dietetics, vol. 114, pp. 862–869.

Mittal, B. 1995.A comparative analysis of four scales of consumer involvement. *Psychology and Marketing,* vol.12, iss. 7, pp.663-682.

Mondelaers, K., Aertsens, J. & Van Huylenbroeck, G. 2009. A meta-analysis of the differences in environmental impacts between organic and conventional farming. *British Food Journal*, vol. 111, pp. 1098–1119.

Moore, G. 2004. The Fair Trade Movement: Parameters, Issues and Future Research. *Journal of Business Ethics*, vol. 53, pp. 73–86.

Morrison, P.S. & Beer, B. 2017. Consumption and Environmental Awareness: Demographics of the European Experience. In: Shibusawa, H. et al. (eds.), Socioeconomic Environmental Policies and Evaluations in Regional Science. *New Frontiers in Regional Science: Asian Perspectives,* vol. 24, pp. 81-102.

Mostafa, M.M. 2009. Shades of green: a psychographic segmentation of the green consumer in Kuwait using self-organizing maps. *Expert Systems with Applications,* vol. 36, pp.11030–11038.

Official Statistics of Finland (OSF). 2017b. Population structure. Population according to age (5-year) and sex in 1865 to 2016 [online document]. [Accessed 31 Oct 2017]. Available at http://www.stat.fi/til/vaerak/tau_en.html

Official Statistics of Finland (OSF). 2017a. Income distribution statistics. Appendix table 3. Household income: structure by brackets ordered according to households' gross income 2010 [online document]. [Accessed 1 Nov 2017]. Available at http://www.stat.fi/til/tjt/tau_en.html

Official Statistics of Finland (OSF). 2017c. Educational structure of population Appendix table 1. Population with educational qualification by level of education, field of education and gender 2016 [online document]. [Accessed 24 Jan 2018]. Available at http://www.stat.fi/til/vkour/2016/vkour_2016_2017-11-02_tau_001_en.html

Official Statistics of Finland (OSF) 2014. Households' consumption. 2012, Households and consumption expenditure by type of household 2006–2012 [online document]. [Accessed 31 Nov 2017]. Available at http://www.stat.fi/til/ktutk/2012/ktutk_2012_2013-12-30_kat_001_en.html

Olli, E., Grendstad, D. & Wollebark, D. 2001. Correlates of environmental behaviors: bringing back social context. *Environment and Behavior*, vol. 33, pp. 181–208.

Panzone, L., Hilton, D., Sale, L. & Cohen, D. 2016. Socio-demographics, implicit attitudes, explicit attitudes, and sustainable consumption in supermarket shopping. *Journal of Economic Psychology*, vol. 55, pp. 77–95.

Pattie, K. 2001. Golden goose or wild goose? The hunt for the green consumer. *Business Strategy and the Environment*, iss.10, pp. 187–199.

Pedrini, M. & Ferri, L.M. 2014. Socio-demographical antecedents of responsible consumerism propensity. *International Journal of Consumer Studies*, vol. 38, pp. 127–138.

Pimentel, D., Houser, J., Preiss, E., White, O., Fang, H., Mesnick, L., Barsky, T., Tariche, S., Schreck, J. & Alpert, S. 1997. Water resources: Agriculture, the environment, and society. *BioScience*, vol. 47, iss. 2, pp. 97–106.

Pimentel D. & Pimentel M. 2003. Sustainability of meat-based and plant-based diets and the environment. *American Journal of Clinical Nutrition*, vol. 78, iss. 3, pp. 660-663.

Roberts, J.A. 1996a. Green consumers in the 1990s: Profile and implications for advertising. *Journal of Business Research*, vol. 36, iss. 3, pp. 217–231.

Roberts, J.A. 1996b. Will the Real Socially Responsible Consumer Please Step Forward? *Business Horizons*, vol. 39, iss. 1, pp. 79–83.

Roy, P., Nei, D., Orikasa, T., Xu, Q., Okadome, H., Nakamura, N. & Shiina T. 2009. A review of life cycle assessment (LCA) on some food products. *Journal of Food Engineering*, vol. 90, iss. 1, pp. 1-10.

Saba, A. & Messina, F. 2003. Attitudes towards organic foods and risk/benefit perception associated with pesticides. *Food Quality and Preference*, vol.14, iss. 8, pp. 637-645.

Salonen, A. 2010. Kestävä kehitys globaalin ajan hyvinvointiyhteiskunnan haasteena. Väitöstutkimus. Tutkimuksia 318. Helsinki: Yliopistopaino.

Salonen, A. 2013. Responsible Consumption. In: Idowu, S., Capaldi, N., Zu, L. & Das Gupta, A. (eds.) Encyclopedia of Corporate Social Responsibility. Berlin: Springer. pp. 2048–2055.

Salonen, A. O., Fredriksson, L., Järvinen, S., Korteniemi, P. & Danielsson, J. 2014. Sustainable Consumption in Finland—The Phenomenon, Consumer Profiles, and Future Scenarios. *International Journal of Marketing Studies*, vol. 6, iss. 4, pp. 59-82.

Saunders, M., Lewis, P. & Thornhill, A. 2009. Research Methods for Business Students. Fifth edition. Harlow: Pearson Education Limited.

Scheibehenne, B., Miesler, L., & Todd, P. M. 2007. Fast and frugal food choices: Uncovering individual decision heuristics. *Appetite*, vol. 49, iss. 3, pp. 578–589.

Schuhwerk, M. & Lefkoff-Hagius, R. 1995. Green or Non-Green? Does Type of Appeal Matter When Advertising a Green Product? *Journal of Advertising*, vol. 24, iss. 2, pp. 45-54.

Schumacher, I. 2010. Ecolabeling, consumers' preferences and taxation. *Ecological Economics*, vol. 69, pp. 2202–2212.

Schwartz, S. 1992. Universals in The Content and Structure of Values - Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*, vol. 25, pp. 1 – 65.

Schwepker, C.H. & Cornwell, T.B. 1991. An Examination of Ecologically Concerned Consumers and Their Intention to Purchase Ecologically Packaged Products. *Journal of Public Policy & Marketing*, vol. 10, iss. 2, pp.77–101.

Shaw, D. & Clarke, I. 1999, Belief Formation in Ethical Consumer Groups: An Exploratory Study. *Marketing Intelligence & Planning*, vol. 17, iss. 2, pp. 109–119.

Shaw, D., Grehan, E., Shiu, E., Hassan, L. & Thomson, J. 2005, An Exploration of Values in Ethical Consumer Decision Making. *Journal of Consumer Behaviour*, vol. 4, iss- 3, pp. 185–200.

Shaw, D. & Newholm, T. 2002. Voluntary Simplicity and the Ethics of Consumption. *Psychology and Marketing*, vol. 17, iss. 2, 167–185.

Shaw, D. & Shiu, E. 2002. The Role of Ethical Obligation and Self-Identity in Ethical Consumer Choice, *International Journal of Consumer Studies,* vol. 26, iss. 2, pp 109–116.

Sheth, J.N., Sethia, N.K., Srinivas, S. 2011. Mindful consumption: a customer-centric approach to sustainability. Journal of the Academy of Marketing Science, vol. 39, iss. 1, pp. 21–39.

Shrum, L.J., Mccarty, J. & Lowrey, T. 1995. Buyer Characteristics of the Green Consumer and Their Implications for Advertising Strategy. *Journal of Advertising*, vol. 24, iss. 2, pp. 71-82.

Sirieix, L., Delanchy, M., Remaud, H., Zepeda, L. & Gurviez P. 2013. Consumers' perceptions of individual and combined sustainable food labels: a UK pilot investigation. International Journal of Consumer Studies, 37. pp. 143–151.

Steel, B.S. 1996. Thinking Globally and Acting Locally?: Environmental Attitudes, Behaviour and Activism. *Journal of Environmental Management*, vol. 47, iss. 1, pp. 27–36.

Steptoe, A., Pollard, T. M., & Wardle, J. 1995. Development of a measure of the motives underlying the selection of food: The Food Choice Questionnaire. Appetite, vol. 25, iss. 3, pp. 267–284.

Stern, P.C., Dietz, T. & Guagnano, G.A. 1995. The New Ecological Paradigm in Social-Psychological Context. *Environment and Behavior*, vol. 27, iss. 6, pp.723–743.

Tait, P., Miller, S., Abell, W., Kaye-Blake, W., Guenther, M. & Saunders, C. 2011. Consumer Attitudes towards Sustainability Attributes on Food Labels. 55th Annual AARES National Conference, Melbourne, Victoria, February 2011.

Tanner, C. & Kast, S.W. 2003. Promoting Sustainable Consumption: Determinants of Green Purchases by Swiss Consumers. *Psychology & Marketing*, vol. 20, iss. 10, pp. 883-902.

Tarkiainen, A. & Sundqvist, S. 2009. Product involvement in organic food consumption: Does ideology meet practice? *Psychology & Marketing,* vol.26, iss. 9, pp. 844-863.

Teisl, M.F. 2003. What we may have is a failure to communicate: Labeling environmentally certified forest products. *Forest Science,* vol. 49, iss. 5 pp. 668–680.

Teisl, M.F., Rubin, J. & Noblet, C.L. 2008. Non-dirty dancing? Interactions between eco-labels and consumers. *Journal of Economic Psychology*, vol. 29 iss. 2, pp. 140-159.

Thøgersen, J. 2000. Psychological Determinants of Paying Attention to Eco-Labels in Purchase Decisions: Model Development and Multinational Validation. *Journal of Consumer Policy*, vol. 23, pp. 285–313.

Thøgersen, J. 2002. Promoting green consumer behaviour with eco-labels. In: Thomas, D. & Paul, S. (eds.) New tools for Environmental Protection: Education, Information, and Voluntary Measures. National Academic Press, Washington DC. pp. 83-104.

Thøgersen, J. 2014. Unsustainable consumption: Basic causes and implications for policy. *European Psychologist*, vol. 19, iss. 2, pp. 84–95.

Thøgersen, J., Haugaard, P. & Olesen, A. 2010. Consumer responses to ecolabels. *European Journal of Marketing*, vol. 44, iss. 11/12, pp.1787–1810.

Thøgersen, J., Jørgensen, A-K. & Sandager, S. 2012. Consumer Decision Making Regarding a "Green" Everyday Product. *Psychology and Marketing,* vol. 29, iss. 4, pp. 187-197.

Tilman, D., Cassman, K. G., Matson, P. A., Naylor R. & Polasky, S. 2002. Agricultural sustainability and intensive production practices. Review. *Nature,* vol. 418, pp. 671-677.

Tobler, C., Visschers, V.H.M. & Siegrist. M. 2011. Eating green. Consumers' willingness to adopt ecological food consumption behaviors. Research report. *Appetite,* vol. 57, pp 674–682.

Tucker, L.R. 1980. Identifying the Environmentally Responsible Consumer: The Role of Internal-External Control of Reinforcements. *Journal of Consumer Affairs*, vol. 14, iss. 2, pp. 326–340.

Tukker, A. & Jansen. B. 2006. Environmental Impacts of Products: A Detailed Review of Studies. *Journal of Industrial Ecology*, vol. 10, iss. 3, pp. 159-182.

Tuomisto, H.L., Hodge, I.D., Riordan, P. & Macdonald, D.W. 2012. Does organic farming reduce environmental impacts? – A meta-analysis of European research. Journal of Environmental Management, vol. 112, pp. 309–320.

United Nations Environment Programme (UNEP). 2005. The Trade and Environmental Effects of Ecolabels: Assessment and Response

UNEP & IISD. 2005. Environment and Trade: A Handbook. Second Edition. International Institute for Sustainable Development (IISD).

van Amstel, M., Driessen, P. & Glasbergen, P. 2008. Eco-labeling and information asymmetry: a comparison of five eco-labels in the Netherlands. *Journal of Cleaner Production*, vol. 16, pp. 263-276.

Verain, M.C.D., Bartels, J., Dagevos, H., Sijtsema, S.J., Onwezen, M.C. & Antonides, G. 2012. Segments of sustainable food consumers: A literature review. *International Journal of Consumer Studies*, vol. 36, iss. 2, pp. 123-132

Vermeir, I. & Verbeke, W. 2006. Sustainable Food Consumption: Exploring The Consumer "Attitude – Behavioral Intention" Gap. *Journal of Agricultural and Environmental Ethics*, vol. 19, iss. 2, pp. 169–194.

Vitell, S.J., Singhapakdi, A. & Thomas, J. 2001. Consumer Ethics: An Application and Empirical Testing of the Hunt-Vitell Theory of Ethics. *Journal of Consumer Marketing*, vol. 18, iss. 2, pp. 153–178.

de Vries, M. & de Boer, I.J.M. 2010. Comparing environmental impacts for livestock products: A review of life cycle assessments. *Livestock Science*, vol. 128, iss. 1-3, pp. 1-11.

Vringer, K. & Blok, K. 1995. The direct and indirect energy requirements of households in the Netherlands. *Energy Policy*, vol. 23, pp. 893–910.

Wackernagel, M. & Rees, W. 1996. Our Ecological Footprint. Reducing Human Impacts on the Earth. Gabriola Island: New Society Publishers.

Wheale, P. & Hinton, D. 2007. Ethical consumers in search of markets. Business Strategy and the Environment, vol. 16, pp. 302–315.

APPENDICES

Appendix 1 Pilot questionnaire in English

Function of answer	Observations	Answer
Product type	1. Product in question (observation)	Banana
		Eggs
		Coffee
		Wine
Valid eco-labels	2. Which eco-labels are present? (observation)	Reilu kauppa
		Luomu
		UTZ
		Joutsenmerkki
		Rain forest alliance
Quantity	3. Quantity of the product bought (observation)	(open)
Time used / involvement	4. Did the consumer use considerable amount of tim?? (observation)	Yes
		No
Function of answer	**Interview question**	**Answer**
Product selection	5. Miten päädyit tähän tuotteeseen? / Miksi ostit? (avoin)	Ecolabel
		Taste
		Brand
		Local produce
		Nutrition (healthiness)
		etc.
Buying habit	6. Have you bought this product before?	Yes, I buy it often
		Yes, I sometimes buy this
		No, this is the first time
Eco-label noticing and recognition	7a. Did you notice the eco-label?	Yes
		No
	7b. Do you recognise the label?	Yes
		No
Eco-label usage	8. Did the eco-label have an impact on the buying decision?	Yes
		No
Specific eco-label knowledge	9. Which environmental issues do you associate with this label?	(open)
Attitude to specific eco-label	10. What do you think about the impact of this label?	Trusting / optimistic
		Sceptic
		I often buy eco-labelled products

Eco-labelled product buying habit	11. How often do you buy eco-labelled products?	I sometimes / rarely buy eco-labelled products
		I never buy eco-labelled products
Attitude to eco-labelled products	12. What do you think about eco-labelled products in general?	I am interested in them
		I am not interested in them
		I believe in them
		I do not believe in them
Attitude towards the ethical issue	13. What do you think about environmental problems in general?	I am concerned and / or interested
		I believe in the impact of ethical buying behaviour

Appendix 2 Questionnaire in English

1. How did you end up choosing this product (banana / eggs / wine)
2. Did you notice the eco-label?
3. In your understanding, what does this label mean or stand for?
4. Do you believe that the claims of this label are reliable?
5. How many of these labels do you recognise? (See Attachment 5)
6. Do you believe that your buying choices have an impact? On what? (store selection, community, producers, environment etc.)
7. How important decision is buying good wine / fruit / eggs to you?
8. In general, do you aspire to buy ethical or environmentally friendly (food) products? By what means?
9. How old are you?
    a. 15-24
    b. 25-34
    c. 35-44
    d. 45-54
    e. 55-64
    f. over 64
10. Are you…
    a. Female
    b. Male
11. What is the higher level of education you have finished?
    a. Basic education
    b. Upper secondary school
    c. Vocational school
    d. Bachelor's degree / undergraduate degree
    e. Master's degree / graduate degree
12. What is the size of your household?
    a. One person
    b. Two persons
    c. Three persons
    d. Four persons
    e. five persons or more

13. On average, how much money does your household spend on groceries weekly?
    a. 49 € or less
    b. 50-69 €
    c. 70-99
    d. 100-119 €
    e. 120 € or more
14. What is the income of your household? (€ / month)
    a. 0-1599 €
    b. 1600-2499 €
    c. 2500-3499 €
    d. 3500-4499 €
    e. yli 4500 €
    f. (I don’t want to answer)

Appendix 3 Questionnaire in Finnish

1. Miten päädyit tähän tuotteeseen (banaani / munat / viini)
2. Huomasitko ympäristömerkkiä / kiinnititkö huomiota?
3. Mitä tämä merkki sinusta merkitsee? Mitä tiedät tästä merkistä?
4. Uskotko, että tämän merkin väittämät ovat luotettavia?
5. Kuinka monta näistä merkeistä tunnistat / onko tuttuja?
6. Uskotko, että ostopäätökselläsi vaikutat? Mihin? (kaupan valikoimaan, yhteisöön, tuottajiin, ympäristöön)
7. Kuinka tärkeä päätös hyvän viinin / hedelmän / munien valitseminen on sinulle?
8. Pyritkö yleisesti ottaen ostamaan eettisiä tai ympäristöystävällisiä tuotteita? Millä keinoin? (kausiruoka, lähiruoka, reilu kauppa, luomu, pakkauksen määrä, pakkauskoko…
9. Minkä ikäinen olet?
    1) 15-24
    2) 25-34
    3) 35-44
    4) 45-54
    5) 55-64
    6) yli 64
10. Oletko…
    1) nainen
    2) mies
    3) (muu)
11. Mikä on korkein suorittamasi tutkinto?
    1) peruskoulu
    2) lukio
    3) ammattikoulu
    4) alempi korkeakoulututkinto
    5) ylempi korkeakoulututkinto
12. Mikä on kotitaloutenne koko?
    1) yksi henki
    2) 2 henkeä
    3) 3 henkeä
    4) 4 henkeä

5) 5 tai enemmän

13. Kuinka paljon kotitaloutenne käyttää rahaa ruokakaupassa per vko?

1) alle 49e
2) 50-69e
3) 70-99e
4) 100-119e
5) yli 120e

14. Talouden tuloluokka nettona (e/kk):

1) 0-1599
2) 1600-2499
3) 2500-3499
4) 3500-4499
5) yli 4500
6) (en halua vastata)

Appendix 4 Picture for testing the familiarity with eco-labels in question 5

Appendix 5 Introductions of Fair trade and organic eco-labels

Fair-trade label

Goods imported from developing countries and produced in accordance with specific social and environmental agreements can be can be granted a fair-trade label (European Commission 1997). Most of the products in question are food products (De Pelsmacker et al. 2005b, 367). Basically, there are two visions in fair trade. The first one is to deliver a system of international trade that positively affects both producers and consumers involved in it. (Moore 2004, 73-74) Fair trade is about helping producers in an excluded and/or disadvantaged position to get fair trading partnerships and develop sustainably (De Pelsmacker et al. 2005b, 367). The means to pursue these objectives are providing improved trading conditions, raising awareness and campaigning (Krier 2001, 7). The most comprehensive version of the concept integrates both environmental and social issues (De Pelsmacker et al. 2005b, 367). The more drastic second vision of fair trade is to confront orthodoxy in business practice and carry this out by being an instrument for modifying the prevailing economic model (Moore 2004, 73-74).

In a narrow view, the term refers to purchasing products from farmers in developing countries on conditions that are comparatively better than commercial terms, and 'marketing them in developed countries at an "ethical premium"' (Bird & Hughes 1997, 161). The price premium that the consumer pays is guaranteed by the higher price that farmers get for their products and by the system of fair-trade regulating within the trade network. Typically, the companies implementing fair trade conducts communicate these practices to consumers by marketing fair-trade bands or by collaborating with fair-trade organisations that accredit their fair-trade products and permit them to use a fair-trade label for marketing these products. (De Pelsmacker et al. 2005b, 367) The standards between certifying organisations vary, however the label highlights the signals of environmental protection, social justice and quality standards of the product (Loureiro & Lotade 2005, 130). The ethical consumer behaviour related to buying fair-trade products is about buying products for their favourable quality of helping farmers in distant developing countries (De Pelsmacker et al. 2005b, 363-364).

Organic labels

Products produced according to organic principles are referred to as organic products. Thereby, the term ‘organic’ refers mainly to the production method, instead of the end-product itself. (Jahn et al. 2005, 55) In the European Union, the products that are marketed and sold as organic must meet the requirements of organic production, certification and labelling of Regulation (EC) No. 834/2007. The EU logo has been mandatory for all organic products sold within the EU, since 2010. (Regulation (EC) No. 834/2007). In many European countries, other voluntary organic labelling schemes exist on the side of the EU logo. These are presented and offered by various certifying organisations, both governmental and private. (Janssen & Hamm 2012, 9) Aside from the EU logo, the official organic certification logos present at the Finnish food market are the ladybug logo by the organic sector alliance, Luomuliitto, and the governmental sun logo (Luomu.fi)

Appendix 6 Interview questions and answer coding 1/3

Q function	Question	Answer	Answer code
Product in question	(Product group in question)	Banana	PROD_BANANA
		Wine	PROD_WINE
		Egg	PROD_EGG
Reason for buying	1. How did you end up choosing this product (banana / eggs / wine)	Primarily based on eco-label	EL_PRIMARY
		Partly based on eco-label	EL_IMPACT
		Eco-label was not significant in product choice	EL_NOEFF
		Based on taste	EL_TASTE
		Based on health benefits	EL_HEALTH
		Based on habit	EL_HABIT
		Based on ripeness	EL_RIPE
		Based on price	EL_PRICE
		Based on familiar brand	EL_BRAND
		Trying out a new product	EL_NEWP
		Eco-label is a positive addition	EL_PLUS
		Based on the locality of the product	EL_LOCAL
Attention to label	2. Did you notice the eco-label?	Yes, I did	ATTN_Y
		No, I did not	ATTN_N
Understanding the eco-label	3. In your understanding, what does this label mean or stand for?	Purity / more pure	UND_PURITY
		It is healthies	UND_HEALTH
		No or very little chemical fertilizers and pesticides have been used	UND_PESTICHEM
		The farmers get a fair compensation	UND_COMP
		It is more ethical	UND_ETH
		Environmentally friently	UND_ENV
		Better animal welfare	UND_ANI
		More natural	UND_NATURAL
		Less processed	UND_LESSPROC
Trust in eco-labels	4. Do you believe that the claims of this label are reliable?	I trust the eco-label (high trust)	TRUST_YES
		I do not necessarily trust in the eco-label (moderate trust)	TRUST_NOTNEC
		I doubt the eco-label	TRUST_DOUBT
		I hope the eco-labels do what they claim to	TRUST_HOPE
		I trust the eco-labels in Finland / I trust the eco-label if it is Finnish	TRUST_FIN

Appendix 7 Interview questions and answer coding 2/3

Q function	Question	Answer	Answer code
Awareness of eco-labels: which ones are familiar	5. How many of these labels do you recognise? Which ones? (See Attachment 5)	Finnish organic label	AWARE_FIN_ORG
		EU organic label	AWARE_EU_ORG
		Fair trade label	AWARE_FT
		Rainforest Alliance label	AWARE_RF
		MCS label	AWARE_MCS
		UTZ label	AWARE_UTZ
Awareness of eco-labels: how many are familiar		None are familiar	AWARE_NONE
		1-2 are familiar	AWARE-1-2
		3-4 are familiar	AWARE3-4
		5-6 are familiar	AWARE5-6
PCE	6a. Do you believe that your buying choices have an impact?	Not really / I believe they may have a very small impact	PCE_LOW
		I believe they have some impact, but not a large one	PCE_MED
		Of course my choices have an impact	PCE_HIGH
	6b. Impact on what?	Impact on my own wellbeing	PCE_SELF
		Impact on the selection at the store	PCE_SELECTION
		Impact on the price	PCE_PRICE
		Impact on production methods	PCE_PRODUCTION
		Impact on producers	PCE_PRODUCERS
		Impact on the environment	PCE_ENV
		My decisions do not have a notable impact, but if many people would buy, there would be	PCE_ALLBUY
Product category involvement	7. How important decision is buying good wine / fruit / eggs to you?	It's does not really matter / It's not really important	INV_FOOD_LOW
		It's somewhat important	INV_FOOD_MED
		It's a very important decision	INV_FOOD_HIGH
Ethical involvement	8a. In general, do you aspire to buy ethical or environmentally friendly (food) products?	Not really / Very rarely	INV_ETH_LOW
		As long as it is convenient / well-available / the price is not too high	INV_ETH_MED
		Yes, (almost) always. The price does not matter	INV_ETH_HIGH
	8b. By what means?	By looking for the presence of eco-labels	INV_ETH_LABELS
		By favouring organic products	INV_ETH_ORGANIC

		By favouring fair trade products	INV_ETH_FT
		By favouring local products	INV_ETH_LOCAL
		By favouring seasonal foods	INV_ETH_SEASONAL
		By favouring plant foods	INV_ETH_PLANT
		By checking the traceability of production	INV_ETH_TRACE
		By buying fresh products	INV_ETH_FRESH
		By checking the contents	INV_ETH_INCI

Appendix 8 Interview questions and answer coding 3/3

Question function	Question	Answer	Answer code
Demographics: age	9. How old are you?	15-24	AGE_24
		25-34	AGE_34
		35-44	AGE_44
		45-54	AGE_54
		55-64	AGE_64
		65 or older	AGE_OVER65
Demographics: sex	10. Are you a…	Female	SEX_W
		Male	SEX_M
Demographics: education	11. What is the higher level of education you have finished?	Basic education	EDU_BAS
		High school education	EDU_HS
		Vocational education	EDU_VOC
		Bachelor level education	EDU_BACH
		Master level education or higher	EDU_MAS
Demographics: household size	12. What is the size of your household?	1 person	HOUSEH_1
		2 persons	HOUSEH_2
		3 persons	HOUSEH_3
		4 persons	HOUSEH_4
		5 persons or more	HOUSEH_5
Grocery consumption expenditure	13. On average, how much money does your household spend on groceries weekly?	49e or less	FOODEXP_49
		50-69e	FOODEXP_69
		70-99e	FOODEXP_99
		100-119e	FOODEXP_119
		120e or more	FOODEXP_OVER120
Household's income	14. What is the income of your household? (€ / month)	1600e or less	INCOME_1600
		1601-2500e	INCOME_2500
		2501-3500e	INCOME_3500
		3501-4500e	INCOME_4500
		over 4500e	INCOME_OVER4500
		I don't want to say	INCOME_BLANK

Appendix 9 Tables of research and Finnish population

Households by number of members: sample and the Finnish population in 2012 (based on Official Statistics of Finland 2017b)

	Research population		Finnish population	
Size of household	**No. of households**	**Share of total (%)**	**No. of households**	**Share of total (%)**
1 person	17	18.7	1 044 957	40.3
2 persons	49	53.8	909 139	35
3 persons	6	6.6	271 416	10.5
4 persons	12	13.2	244 778	9.4
5 persons or more	7	7.7	124 691	4.8
Total	91	100	2 594 999	100

Distribution of grocery expenditure by household size

	Household size				
Weekly grocery expenses	**1 person**	**2 persons**	**3 persons**	**4 persons**	**5 persons or more**
< 49€	41.2	0	0	0	0
50-69 €	29.4	18.4	16.7	0	0
70-99 €	17.6	34.7	33.3	16.7	0
100-119 €	5.9	28.6	33.3	25	14.3
>120 €	5.9	18.4	16.7	58.3	85.7
Total	100	100	100	100	100
Average consumption	50-69 €	100-119 €	70-99 € / 100-119 €	100-119 €	>120 €

Weekly food and non-alcoholic drink consumption expenditure by type of household in Finland in 2012 (based on Official Statistics of Finland 2014)

Type of household	Average annual exp. (€)	Calculated average weekly exp. (€)
One-person, aged under 65	2 480	52
Elderly household	3 493	73
Single-parent family with children	4 709	98
Couple without children, aged under 65	4 979	104
Two-parent family with children	7 478	156
Other households	6 131	128

Weekly food consumption expenditure as a share of income bracket

	Income bracket (e / month)				
Weekly grocery expenses	**Under 1599**	**1600 – 2499**	**2500 – 3499**	**3500 – 4499**	**4500 or over**
< 49 €	44.4	11.8	0	4.3	0
50-69 €	33.3	29.4	16.7	8.7	8.7
70-90 €	22.2	29.4	27.8	34.8	17.4
100-119 €	0	17.6	33.3	30.4	21.7
> 120 €	0	11.8	22.2	21.7	52.2
Total	99.9	100	100	99.9	100
Largest share	< 49 €	70-90 €	100-119€	70-90€	< 120 €

Household consumption expenditure by income bracket in Finland in 2012 (at 2012 prices) (Based on Official Statistics of Finland 2014)

Income bracket	1. income bracket	2. income bracket	3. income bracket	4. income bracket	5. income bracket
Annual exp. (€)	2 726	3 978	4 710	5 148	6 144
Calculated weekly exp. (€)	57	83	98	107	128