

PROMOTING THE PLANETARY HEALTH DIET IN GROCERY RETAIL - COMPARISON OF RETAIL CHAINS IN FINLAND

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Master's Thesis

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ABSTRACT

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<p>Food production affects the environment greatly and changes in diets are needed to make the food system more sustainable. The planetary health diet proposes a solution for making the changes. As meeting points between suppliers and consumers, grocery retailers have great possibilities to influence food consumption and guide consumers into more sustainable and healthy food choices.</p> <p>This Master's Thesis aims to investigate what actions grocery retailers are taking to promote the planetary health diet to Finnish consumers and how the actions between the retailers compare. The thesis has a qualitative approach, and the data consists of S Group, K Group and Lidl Finland's sustainability reports of 2022. The theoretical background is formed based on previous research on sustainable food, the planetary health diet, consumer behavior and grocery retailers promoting sustainable food.</p> <p>The findings indicate that the most similar actions for promoting sustainable food shared by all three retailers were providing a good selection of plant-based foods and preventing food waste. In addition, for K Group and S Group the focus was also on informing and educating consumers about sustainable eating via online contents and in-store materials, for instance. Yet while pricing might be the single most effective way of boosting the sales of sustainable food, only S Group reported lowering the price of certain sustainable items while other more advanced pricing methods were not utilized at all by any retailer. Overall, both S Group and K Group reported promoting sustainable eating more than Lidl did, but similar actions were shared by all three retailers too.</p> <p>The results suggest that all three retailers are acting towards promoting the planetary health diet, but the means do not include anything too progressed. The theory section presents many possibilities for influencing food choices which were not present in the retailers' reports. When relating the results to previous theory, it is clear that the retailers could utilize plenty more methods for promoting sustainable eating.</p>	
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TIIVISTELMÄ

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<p>Nykyisen ruokajärjestelmän ympäristövaikutukset ovat suuret ja, jotta järjestelmästä saataisiin kestävä, on ruokatuotantoon tehtävä muutoksia. Planetaarinen ruokavalio tarjoaa mallin kyseisten muutosten tekemiseksi. Asema tuottajien ja kuluttajien välissä mahdollistaa päivittäistavarakaupoille ruoankulutukseen vaikuttamisen sekä kuluttajien ohjaamisen kohti vastuullisia ja terveellisiä ruokavalintoja.</p> <p>Tämä pro gradu tutkii kuinka päivittäistavaraketjut edistävät planetaarisen ruokavalion mukaista syömistä Suomessa ja kuinka ketjujen toimet vertautuvat keskenään. Tutkielman luonne on laadullinen ja tutkimusdata koostuu S-ryhmän, K-ryhmän ja Lidl Suomen vuoden 2022 vastuullisuusraporteista. Tutkielman teoreettinen viitekehys koostuu aiemmasta tutkimuksesta vastuullisesta ruoasta, planetaarisesta ruokavaliosta, kulutuskäyttäytymisestä sekä keinoista, joilla päivittäistavarakauppa voi edistää vastuullisen ruoan kulutusta.</p> <p>Tulosten perusteella päivittäistavaraketjut edistivät vastuullista ruokaa pääasiassa kasvipohjaisten tuotteiden valikoiman ja ruokahävikin ehkäisyn avulla. Lisäksi S ryhmä ja K ryhmä tarjosivat tietoa ja opastusta vastuullisesta ruoasta esimerkiksi nettisivuilla ja myymälämateriaaleilla. Vaikka hinnoittelu saattaa olla vaikuttavin keino vastuullisen ruoan edistämiseksi, vain S ryhmä raportoi alentavansa tiettyjen vastuullisten tuotteiden hintoja. Sekä S ryhmä että K ryhmä raportoivat enemmän toimia vastuullisen ruoan puolesta kuin Lidl, mutta kaikki kolme ketjua raportoivat myös keskenään samankaltaisia toimia.</p> <p>Tulokset viittaavat, että päivittäistavaraketjut toimivat planetaarisen ruokavalion edistämiseksi, mutta keinot eivät ole erityisen edistyksellisiä. Tutkimuksen teoriaosuudessa esitellyistä päivittäistavarakaupan vaikutuskeinoista ruokavalintoihin vain murto-osa mainittiin ketjujen vastuullisuusraporteissa. Kun tuloksia vertaamalla aiempaan tutkimukseen, on selvää, että päivittäistavaraketjut voisivat hyödyntää useita uusia keinoja vastuullisen ruoan kulutuksen lisäämiseksi.</p>	
Asiasanat kestävä ruoka, ruokavalintoihin vaikuttaminen, sisällönanalyysi	
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CONTENTS

ABSTRACT

TIIVISTELMÄ (ABSTRACT IN FINNISH)

1	INTRODUCTION	7
1.1	Background.....	7
1.2	Aims and research questions	8
1.3	Structure of the thesis.....	9
2	SUSTAINABLE FOOD CONSUMPTION	10
2.1	Sustainable food.....	10
2.1.1	Defining sustainable food.....	10
2.1.2	The planetary health diet.....	12
2.2	Consumer behavior on sustainable food.....	14
3	GROCERY RETAILERS PROMOTING SUSTAINABLE FOOD.....	18
3.1	Literature review of retailers influencing food purchases.....	18
3.2	Grocery retailers' role in changing food consumption	23
3.3	Nudging techniques	26
3.3.1	Nudging.....	26
3.3.2	Information and education.....	28
3.3.3	Labeling	31
3.3.4	Placement and visibility	34
3.3.5	Campaigns and advertising.....	36
3.3.6	Social norm setting and personalization	37
3.4	Discounts and selection	39
3.5	Theoretical framework summary	41
4	DATA AND METHODOLOGY	43
4.1	Research context.....	43
4.2	Qualitative research.....	44
4.3	Content analysis.....	45
4.4	Research data.....	46
4.5	Applied research method	46
5	RESULTS	48
5.1	Actions presented in the sustainability reports.....	48
5.2	Retailers' sustainability aims.....	51
5.3	Similarities and differences between the retailers' actions.....	52

6	DISCUSSION AND CONCLUSIONS.....	54
6.1	Discussing the key findings	54
6.2	Practical contributions	61
6.3	Limitations of the study	62
6.4	Suggestions for future research	63
6.5	Conclusions.....	63
	REFERENCES.....	65

1 INTRODUCTION

This Master's Thesis investigates how grocery retailers are promoting sustainable food and eating to Finnish consumers, and how the actions between the retailers compare. The thesis utilizes the concept of the planetary health diet in defining sustainable food. The thesis begins from the assumption that the current unsustainable food system requires a sustainability transition and due to grocery retailers' position between suppliers and consumers, the retailers possess great possibilities in improving the sustainability of food purchased and consumed. After that, the research aims and questions are explained, and the structure of the thesis presented.

1.1 Background

The food system causes some of the greatest sustainability issues we are facing (Ahmed et al., 2019) and often problems are linked to animal-derived food. Food presents one of the biggest sustainability and health challenges of the 21st century (Willett et al., 2019). The current system is linked to issues such as climate change, both water and air pollution as well as biodiversity loss (Ahmed et al., 2019). Out of all human activities agriculture uses the most freshwater and almost a third of the water is used for livestock. Meat production affects the environment greatly and livestock production is a major source of greenhouse gasses (GHGs). (Godfray et al., 2018) Yet meat and dairy are a major part of the Finnish diet as they account on average for almost 32% of the food purchases per household (Huan-Niemi et al., 2020). The food systems affect what we eat via access and availability, and what we eat affects our health and environment. The food systems alter around the globe and all regions face their own environmental, socio-cultural, and political, economic and health challenges. (Hendrie et al., 2022)

In Finland the food system has many strengths, such as high food safety and traceability, but still the system is unsustainable from many aspects. As the food system is based on animal-derived food and production, it creates many environmental and water impacts and causes changes in land use. The weak profitability of primary production causes social and economic unsustainability and the dietary habits cause many health-related challenges. Also, people with lower income tend to eat less healthily. Thus, the food system requires a sustainability transition. (Silvasti et al., 2019; Kaljonen et al., 2022)

One solution for the sustainability transition is the planetary health diet presented by the EAT-Lancet Commission. The planetary health diet is a universal reference diet that provides a suggestion for a global food system that could feed around 10 billion people by 2050 within planetary boundaries. (Willett et al., 2019) Pushing the planetary health diet could be necessary for the transition

and as grocery chains and stores have a vast effect on what Finnish households consume, their role in the transition and promoting more sustainable food is key.

Sustainable diets are characterized by the consumption of healthy foods sourced from sustainable food systems, aiming to both improve human well-being as well as conserve ecological resources in a manner consistent with societal values (Ahmed et al., 2019). The most effective way of reducing food's environmental impact and aiming for a sustainable diet is to reduce the consumption of meat and dairy, favor fruits and vegetables and avoid products transported by air, both on individual and institutional levels (Reisch et al., 2013). Transitioning to healthy diets from sustainable food systems is a must to achieve the United Nations' Sustainable Development Goals and the Paris Agreement (Willett et al., 2019).

The aims and motivations of transforming diets into more healthy and environmentally sustainable are increasing (Hendrie et al., 2022) and sustainability of food has been a rising theme in the past years. Many people have started to eat according to diets, often plant-based, that aim to lessen the environmental impacts of food consumption. Schools have vegetarian days and the discussion on, for instance, serving meat in kindergarten is active. Already the City of Helsinki has stopped serving meat in its city events. The act aims to better consideration of environmental issues. (Helsinki, 2021) The examples show that sustainability is pushed from both individual and governmental levels. Overall, businesses in the food industry possess plenty of power and ability to change the food production and consumption towards sustainability.

Actors in the food industry need to be prepared to alter their ways regarding their strategies and resources as the industry changes quickly, and new customer demands rise up (Beske et al., 2014). Already actors in the food industry are expected to take responsibility for their products' impacts on health both on individuals and on society as a whole (Mikkelsen & Trolle, 2004) and the expectations on sustainability are rising too (Beske et al., 2014). As meeting points between the consumer and food producers, grocery stores possess many possibilities regarding sustainability.

Consumers state being ready to make more sustainable food choices but encouragement and enabling are needed from grocery retailers. As in Finland the grocery chains are big and powerful actors in the food industry, they have the possibility of promoting new practices that enable consumers to purchase more sustainable foods (Miller et al., 2021). More and more consumers state that they are willing to act and improve the sustainability of their grocery choices, however the actual actions are still lacking (Corrin & Papadopoulos, 2017). Which is why actions and enabling sustainable food purchases are needed.

1.2 Aims and research questions

This thesis aims to find out what actions grocery chains, S Group, K Group and Lidl, are taking in Finland to promote the planetary health diet to consumers. The

focus is on the reported actions that are visible to consumers in the grocery stores, in marketing activities and on the retailers' own channels. The thesis tries to present the current state of promoting the planetary health diet and compare what the different retailers are doing. The thesis brings out the similarities and differences between the retailers' actions.

Sustainable food consumption is a widely researched area, yet some topics are still less covered. For instance, Reisch (2010) and Tuomisto (2019) have tried to define sustainable food, and Testa et al. (2020) studied the characteristics of consumers that consume sustainable food. Also, Tong et al. (2023) researched what factors impact buying sustainable food and Sigurdsson et al. (2020) investigated how to assist sustainable food consumption. But what measures are currently taken in order to promote sustainable food consumption to consumers is not that well searched. In addition, grocery stores are very present in our daily lives but how they actually affect our consumption is less thought of. This thesis wishes to find out how the different retailers are trying to push consumers towards sustainable food choices and provide clarity into the current situation.

The research questions aim to provide answers on what actions grocery retailers in Finland are taking in order to promote the planetary health diet and how these actions compare between the different retailers. The research questions include:

- *How grocery retailers, S Group, K Group and Lidl, are promoting the planetary health diet to consumers in Finland?*
- *What are the similarities and differences of the means between the retailers?*

1.3 Structure of the thesis

The thesis begins with the introduction. The introduction includes general background information on sustainable food. In the section, the aims of the study and research questions as well as the structure of the thesis are presented. Following is the theoretical framework which consists of two subsections. First sustainable food consumption, the planetary health diet and consumer behavior are explored. In the following theory section, grocery retailers promoting sustainable food purchases is considered. The section also includes a literature review on the topic. In the section nudging and the means for enabling sustainable food consumption are reviewed. The section ends with a summary of the theory. Next, in the data and methods section, the research context and approach as well as data collection are talked about. Following is the results section in which the results are gone through. The final section discusses the results and presents key findings and conclusions. The section also mentions the study's practical contributions as well as limitations and suggests possible future research topics.

2 SUSTAINABLE FOOD CONSUMPTION

The theoretical framework for the thesis consists of two parts. The first section is about sustainable food consumption and the planetary health diet. In the section, also consumer behavior on sustainable food is considered.

2.1 Sustainable food

The following two sections describe the characteristics of sustainable food and eating. First, sustainable food is defined, and its dimensions explained. Then, the idea of sustainable food is brought into practice by explaining the concept of planetary health diet.

2.1.1 Defining sustainable food

The current definition of sustainable food is common even though some uncertainties still exist. The global fully agreed definition of sustainable food has been lacking and there is still uncertainty about the definition and parameters (Reisch et al., 2013; Piracci et al., 2023; Miller et al., 2021). Yet, as many scholars and organizations have defined sustainable food, is the current definition shared by many. Reisch (2010) defines sustainable food with the help of sustainable development. Sustainable food is healthy and safe, its production minimizes waste and pollution, and it does not risk others' ability to meet their needs. The three aspects of sustainability are added into the definition as sustainable food needs to note economic, social, and environmental aspects. (Reisch, 2010; Beske et al., 2014) In addition, sustainable food is also culturally appropriate, and fits into everyday life by being available, affordable, and accessible (Reisch et al., 2013). Thus, sustainable food and diets have four key dimensions including ecological, economic, human health, and socio-cultural and political (Ahmed et al., 2019).

According to the Food and Agriculture Organization of the United Nations (FAO) sustainable diets have minimized environmental impacts and promote food and nutrition safety as well as well-being to present and future generations. Sustainable food protects biodiversity and ecosystems, is culturally appropriate, easily accessible, affordable, nutritionally sufficient, safe and health-promoting while making the best use of natural and human resources. (FAO, 2010) The concept of sustainable food also links to human rights as the right to adequate food is a core element (United Nations, nd.).

The dimensions of sustainable food form a large concept. The ecological dimension of sustainable diets aims to lower the negative impacts of agriculture whilst advancing biodiversity and ecosystem services (Ahmed et al., 2019; Nelson et al., 2009). The economic dimension connects to the actors and activities in the value chains of food. The human health dimension includes health,

nutrition, and food environments, and it aims to make sure that the diets are holistic and diverse as well as accessible. The socio-cultural and political dimension notes food culture, equity, knowledge and value, and bigger food system issues such as labor rights and animal welfare. (Ahmed et al., 2019)

The broadness of sustainable food can lead to some dimensions being overlooked. For instance, socio-cultural sustainability in the food industry includes local market presence, product safety, nutrition, occupational welfare, and animal welfare (Heikkurinen & Forsman-Hugg, 2011). Thus, sustainable food is not purely about the environment, but it notes themes on a larger scale. However, as the concept notes so many themes besides environmental sustainability, can the environmental impacts be sometimes overlooked or undermined.

EAT-Lancet Commission on Food, Planet and Health defines a sustainable diet to have less livestock products and more plant-based foods than are consumed at the moment (Tuomisto, 2019). Sustainable food creates less greenhouse gasses, affects biodiversity less in a negative manner and acquires less land and water usage. The EAT-Lancet Commission's sustainable diet consists of a diverse diet of fruits, vegetables, whole grains, and nuts, and it is based on nutrition and health as well as environmental impacts. (Miller et al., 2021)

Sustainable diets favor plant-based foods over animal-based but also focus on the nutritional content. A diet rich in (red) meat and dairy products usually causes the highest GHG emissions. Currently, meat and meat products cause 9 to 14% of total GHG emissions in the EU. The second most emissions from food come from different dairy products such as milk and cheese. Generally, grains, vegetables and fruits cause low levels of GHG emissions. (Reisch et al., 2013) Thus, a sustainable diet limits the intake of meat and dairy and opts for plant-based foods. Yet, it is important to note nutritional aspects of food as well as, as truly sustainable diets focus on nutrient-dense foods with sustainably sourced ingredients rather than only favoring foods with the lowest carbon footprints (Miller et al., 2021). To conclude, sustainable diets are healthy diets from sustainable food systems that improve human health and preserve ecological resources in socially accepted ways (Ahmed et al., 2019).

In Finland the national dietary guidelines are based on the New Nordic Nutrition Recommendations (NNR) which consider the health and sustainability aspects of food. The NNR, given in 2023, provides a basis for nutrient recommendations and national dietary guidelines in the Nordic and Baltic countries, and recommends, for the first time, a diet which is both healthy and ecological. The new recommendations utilize the same idea of sustainable diet, as the recommendations suggest a more plant-based diet with more fish and less red meat. The diet includes plenty of vegetables, fruits, berries, legumes, potatoes, and wholegrains as well as fish and nuts. The diet suggests a limited usage of low-fat dairy products, limits the usage of red meat and poultry, and recommends avoiding processed foods with excess fats, salt, and sugar. The recommendations highlight that healthy food is often sustainable as well.

(Blomhoff et al., 2023; University of Eastern Finland, 2023) However, the planetary health diet, introduced in the following section, is stricter than the NNR. As for instance, in the NNR the limit for meat consumption in a week is a maximum of 350 grams while in the planetary health diet the limit is 100 grams per week. (Blomhoff et al., 2023; Kaltiala, 2020) Yet, in the new NNR the recommendation for meat consumption is lower than before as previously it was 500 g per week (Kaltiala, 2020).

It is crucial to note that sustainable food and diets have their inefficiencies as well. Multiple dimensions of sustainable food can be hard to manage as the dimension can cause trade-offs (Tuomisto, 2019). For instance, the global supply of fruits and vegetables is not able to provide enough to meet the nutritional guidelines. Also, the encouragement to consume more fish, present in some dietary guidelines, would lead to extra pressure to already fragile fish stocks. (Ahmed et al., 2019) Often the environmental and economic dimensions have their trade-offs as well. For example, meat production causes plenty of GHGs and meat is not a part of sustainable diets, at least in large amounts, yet at the same time the production creates employment and is a vital part of many countries' economies (Godfray et al., 2018). In addition, considering the regional differences affecting sustainability can propose challenges. (Ahmed et al., 2019) As for instance, for the dietary recommendations to be fully sustainable in the Nordics, they should have different recommendations for seasons based on the availability of fruits and vegetables (Tuomisto, 2019).

Even though sustainable food has a definition, it is still a very vast concept and as it includes many aspects, it can be hard to comprehend. While consumers are highly interested in sustainable food and food consumption, they have difficulties in defining sustainable food (Piracci et al., 2023; Mastroberardino et al., 2020; van Bussel et al., 2022). Often consumers can link the concept of sustainable food with, for instance, health, nutrition, nourishment or organic (Barone et al., 2020; Miller et al., 2021). While these linkages are a definite part of sustainable food, they still ignore the aspect of environmental sustainability. Thus, understanding the whole broad definition is vital for efficiently utilizing the concept. To simplify and bring the idea of sustainable food into practice, this thesis utilizes the concept of planetary health diet, further explained in the next section.

2.1.2 The planetary health diet

Dietary recommendations can be utilized on multiple levels to better the well-being of humans and the environment. With dietary guidelines and recommendations, the sustainability challenges of the food system can be addressed. Dietary guidelines can both inform and affect consumers' dietary choices and function as bases for nutrition policies and programs. (Ahmed et al., 2019)

The planetary health diet, by the EAT-Lancet Commission, is a universal reference diet that notes the health and environmental impacts of food. It is a science-based suggestion for a global food system which could provide nutrition

to about 10 billion people by 2050 within planetary boundaries. (Willett et al., 2019) The planetary health diet is based on the idea that a diet rich in plant-based food with fewer animal sourced food is beneficial to both human health and environment (EAT-Lancet Commission, 2019).

The diet is universally applicable but local adaptation and interpretation are needed as the diet should reflect the culture, geography and demography of the population and individuals (EAT-Lancet Commission, 2019). Often local dietary recommendations and guidelines work better than global ones, as the local dietary recommendations are considered as more achievable and feasible (Hendrie et al., 2022). Thus, it would be important to modify the planetary health diet and incorporate it into regional guidelines.

True sustainability of the planetary health diet requires local adaptation. If the planetary health diet is not adapted to local and personal needs, food choices within the diet might lead to, for example, bigger water footprints than the previous diet that did not aim for reduced environmental impacts. (Tucci et al., 2022) With the interpretation, the planetary health diet notes the regional differences and likely works more efficiently. The reasons for altering the diet might result from, for example, water usage as in some areas growing more vegetables would require more fresh water causing more water scarcity (Kaltiala, 2020). Also, in the Nordics the weather seasons affect the sustainability of some foods, for instance (Tuomisto, 2019). In addition, in Finland the intake for fish could be higher, than suggested in the diet, as the carbon footprint of wild fish is smaller and fishing wild fish can reduce eutrophication. Thus, a larger number of wild fish could be included in the Finnish version of the planetary health diet. (Ruokavirasto, 2019)

The planetary health diet is currently utilized in recommendations in many countries around the globe. The EAT-Lancet's planetary health diet is incorporated in most dietary recommendations around the globe, including Canada, Denmark, Germany, Spain, the UK, and Sweden, for example (Miller et al., 2021). But in Finland, the dietary recommendations are based on Finnish nutrition recommendations and the NNR.

The planetary health diet is similar to the NNR as it includes plenty of plant-based food, small amounts of animal sourced food, contains rather unsaturated than saturated fats, and limits the number of refined grains, highly processed foods and added sugars (EAT-Lancet Commission, 2019). But the exact suggested amounts are a bit different in the diet compared to the NNR. As stated before, the planetary health diet is stricter on meat consumption, but the NNR might suggest eating more fruits and vegetables in total. Yet it is important to note that the planetary health diet has possible ranges for different food groups, and, for instance, the intake of vegetables can be a lot higher too. (EAT-Lancet Commission, 2019; Blomhoff et al., 2023)

The planetary health diet does not describe an exact diet but rather outlines food groups and suggests ranges of food intake (EAT-Lancet Commission, 2019). The foods and amounts included in the basic example of the planetary health diet are described in Table 1.

TABLE 1. Daily intake of different food groups in the planetary health diet, in grams (EAT-Lancet Commission, 2019)

Daily intake of food groups in the planetary health diet	
Vegetables	300 g
Dairy products	250 g
Whole grains	232 g
Fruits	200 g
Legumes	75 g
Tubers or starchy grains	50 g
Nuts	50 g
Poultry	29 g
Fish	28 g
Eggs	14 g
Meat	14 g
Added Fats	51.8 g
Added sugars	31 g

The current eating habits of Finns differ from the planetary health diet quite drastically. In Finland adults aged 15-75 consume plenty more red meat, dairy products, and added sugar than the planetary health diet suggests. In addition, the consumption of vegetables, legumes and nuts is much below the suggested ranges. (Bäck et al., 2022)

2.2 Consumer behavior on sustainable food

Consumers' demands on sustainable food are growing (Validi et al., 2014; Beske et al., 2014). Consumers expect food safety and are increasing their awareness on food and its production (Beske et al., 2014). In addition, well-being and healthy lifestyles have become megatrends of the 21st century. Nowadays food is also a status symbol and socially meaningful. Food's social aspects are emphasized, it is used to build an image and, purely as enjoyment and to deliver a message. (Reisch et al., 2013) Thus today food is not purely nutrition but instead it delivers solutions to health concerns, for instance (Reisch et al., 2013).

The food industry is dependent on the consumer. Food is transforming as in the food industry, customer perceptions and expectations regarding sustainability can change quickly (Beske et al., 2014). The food industry is dependent on, and responsive to, consumer demands. Having insight into consumer thresholds will predict the direction and nature of the industry's evolution. In addition, the food industry needs to actively pursue sustainable options that are cost neutral for the typical consumer. (Miller et al., 2021)

Often consumers do not fully understand the concept of sustainable diet (Rejman et al., 2019) and information is needed. What consumers regard as a "sustainable product" might not be sustainable at all (Piracci et al., 2023). For instance, sustainable foods are often perceived as expensive which might result

from linking the concept of sustainable diet with, for instance, organic foods. While organic foods tend to be on the more costly side, it is possible to eat a sustainable diet without any organic products. (Miller et al., 2021) Hence, consumers need to be informed and educated on sustainable food and eating. But as the definition of sustainable food is still somewhat unclear, education might be challenging. Clear boundaries on what is sustainable food are required to make informed choices. (Piracci et al., 2023)

Environmental concerns are quite common, but the intention-behavior gap is often present (Hornibrook et al., 2015; Vermeir & Verbeke, 2008; Sharma, 2023). Consumers might declare to buy something, for instance organic, while in reality they do not, or at least as much as they say. The discrepancy is referred to as the intention-behavior gap. (Testa et al., 2019) Emotional engagement and knowledge in sustainability issues will likely increase engagement in sustainable consumption (Pilgrimienė et al., 2020; Testa et al., 2019). Environmental attitudes and purchasing frequency have a strong link as more environmentally conscious and involved individuals are more likely to buy organic or sustainable foods (Vermeir & Verbeke, 2008).

Food choices in grocery stores often reflect routines although many factors affect the choices. Consumers are often highly routinised in choosing foods and what we eat is often a result of habit (Clark et al., 2020). Purchasing decisions in supermarkets are typically very fast and products are chosen routine-like based on only a few factors, trading-off between health and price (Kalnikaitė et al., 2013). But purchases are still impacted by multiple factors. Food habits and preferences are affected by norms, cultural practices, trends, physiological needs and personal food experience and consumption context, meaning food availability and accessibility. Such preferences and taste alongside finances, time, and other limitations, affect food consumption. Often price influences a lot but household characteristics such as age, income, education, and family type play a role too. (Reisch et al., 2013)

Multiple aspects prevent consumers from buying sustainable food. Plenty of consumers do not purchase sustainable products due to perceived barriers such as lack of availability, inconvenience, price, habit, quality perceptions, lack of trust in labels and insufficient marketing despite their interest in sustainable products being quite high. (Vermeir & Verbeke, 2008; Sharma et al., 2023; Testa et al., 2019). Also, already believing one's diet is good and healthy, lack of knowledge on how to change diet into more sustainable, and satisfaction with current food purchases can be barriers too (Rejman et al., 2019; Testa et al., 2019). The same reasons affect the attitude-behavior gap as well (Sharma et al., 2023). Yet often the key barrier is high price (Rejman et al., 2019). Also, provided information can confuse consumers as if information on the sustainability of food is complex or contradictory, the less confident consumers are to purchase or choose what to buy (Vermeir & Verbeke, 2008). In addition, consumers' self-efficacy beliefs, meaning the degree to which individuals think they can add to sustainable development, might be low. Consumers might not think that their individual actions matter to sustainable development and consumption. As

many need to participate for sustainable consumption to be effective, individuals might feel that their actions do not matter which might result in them restraining themselves from sustainable consumption. (Hanss & Böhm, 2013)

On the contrary, the same aspects that prevent sustainable food purchases can also motivate towards sustainable purchases. The most important reason for buying a certain food is often taste. The second reason is cost, then health and convenience. Often the last reason is environmental and social sustainability even though many consumers highlight sustainability and their interest in it. (Miller et al., 2021; Hartikainen et al., 2014; Rejman et al., 2019; Vermeir & Verbeke, 2008) Yet for some consumers ethical and environmental well-being criteria, such as locality, organic, food authenticity and fair trade, are as important. In addition, in Finland domestic production and quality are often important factors too. (Hartikainen et al., 2014)

Motivation to buy sustainable food can predict how sustainable ones' food purchases are. High level of believing that personal efforts contribute to solutions is needed to motivate consumers to express their positive attitude towards sustainable purchasing (Vermeir & Verbeke, 2008). Consumers' motivation, including feelings, attitudes, and aspirations, has a significant role in sustainable purchasing. Once consumers are motivated to buy sustainable products, have knowledge on sustainability, and ability to buy green, they are more likely to purchase sustainable products (Yener et al., 2023). When multiple consumers take part in sustainable consumption and notice that others are doing so, they might be encouraged to continue or start sustainable purchases (Hanss & Böhm, 2013).

While some consumers are resistant to altering their eating habits, others feel certain factors would lead to changes. Some Finnish consumers might think that nothing would make them change their eating habits towards plant based. Yet others feel cheaper prices of vegetarian options would cause alterations to diet and perhaps increased price of meat would too. (Matschoss, 2022) Generally, most consumers are willing to try new products if the price, convenience, accessibility, and perceived quality are right (Vermeir & Verbeke, 2008).

Understanding consumers' perceptions of sustainable food and recognizing the underlying values that influence their purchasing decisions is essential for promoting sustainable consumption habits. Often consumers are better aware of and appreciate the healthy properties of sustainable food more than the sustainable properties, and hence focusing communication and education on the healthiness could boost sustainable consumption patterns better (Piracci et al., 2023). As health consciousness is a key driver of sustainable food purchases, emphasizing the correlation between sustainable and healthy food can be effective (Testa et al., 2019). Marketing practitioners can provide consumers motivation to consume sustainably by, for instance, emphasizing the symbolic and back-to-nature values as well as health and nutrition benefits (Tong et al., 2023).

Different consumption interventions are often effective even though some consumers oppose them. Plenty of guidance and regulations affect food choices

while some Finns think that government or institutions should not guide their food choices (Matschoss, 2022). Yet in contrast, some consumers might think that ensuring sustainable foods are supplied and on sale, is the manufacturer and government's responsibility (Stubbs et al., 2018). Often different consumption interventions can have positive results. When efficient opportunities for sustainable consumption are offered, consumers perceive the barriers low and their willingness to participate in sustainable consumption rises, and as a result action towards sustainable consumption behavior is likely. (Tong et al., 2023)

3 GROCERY RETAILERS PROMOTING SUSTAINABLE FOOD

This section continues the theoretical framework by introducing how grocery retailers can promote sustainable food and eating. The section begins with a literature review of previous research on the means grocery stores can utilize in influencing food choices. The following sections introduce nudging and other means of advancing the planetary health diet. Lastly, the theory sections are drawn together to form a complete picture of the theory utilized in the data analysis of the thesis.

3.1 Literature review of retailers influencing food purchases

The following literature review revises literature on how grocery retailers can influence food purchases, nudging and the gap between intention to purchase and actually purchasing. The reviewed literature was searched mostly via two ways. First, relevant literature was searched from several databases with search words such as “grocery retail*” and “sustainable food”. Second, the found articles were revised and their reference lists were utilized to find more suitable articles to review. Also, examining previous literature reviews helped to form a more comprehensive picture of the field and its trends.

Jones et al. (2011) examined how sustainable consumption agendas are communicated to customers within grocery stores. Functioning as the intermediaries between producers and manufacturers on the other side and consumers on the other side retailers have a key role in promoting sustainable consumption. The study reveals that retailers communicate sustainable consumption with different types of posters and signs which tell about the retailers’ climate action and goals, locally produced products and certificates specific products have, for instance. Yet most information provided about sustainable consumption in the stores is on the product packages. The main communication of the retailers aims to encourage consumption via communicating about promotions. The results indicate that even though many retailers are committed to sustainability and have agendas on it, sustainable development and consumption are not very present in the stores. Consumers are asking for information and to answer consumer needs, retailers should increase the number of messages. (Jones et al., 2011)

Dawson’s (2013) study explores the means retailers have to influence food choices. Consumers make their own choices from what is offered to them but often retailers encourage choosing of certain products via marketing and merchandising activities. Influencing consumer choice is a part of retailers’ competitive strategies. As the food retail is concentrated, the big retailers possess more power over both suppliers and consumers. In addition, as retailers are

present in the stores, online and in mobile, their influence over consumer choices is increasing even more. Also, with retailers' own brand products their ability to influence the products offered is much greater. Dawson (2013) concludes the means for retailers to affect consumer choice to include product development, range development, packaging, positioning, category development, product traceability, pricing and promotions, and store design in form of visuals and auditory. (Dawson, 2013)

Expanding upon the aforementioned research findings, Vandenbroele et al. (2020) continued studying influencing consumer choices by reviewing how sustainable food choices can be promoted to consumers by nudging. Nudging aims to alter consumers' behavior in a predictable manner without restrictions or changing economic incentives by, for instance, altering choice architecture to make sustainable foods more visible. Nudging affects how foods are presented to consumers, but the choice and selection is left for the consumers to make. The review found nudging to be a promising technique to promote environmentally friendly purchases. Nudging with labels, visibility enhancements, social influence cues and adjustments in convenience and product size were found to have positive effects. The placement of foods in the store, such as placing of meat alternatives next to the "mimicked" products, affects the intentions and purchases plenty, and increasing visibility with labels indicated promising results. Placing items next to the cash register tends to boost the sales of those items and thus nudging by placing sustainable and healthy options on those shelves could increase the sales. Nudging consumers with music in the stores also indicated interesting results as slow music could ease consumers and boost sales. In addition, food sampling was found to be an effective nudge to familiarize different products to consumers. (Vandenbroele et al., 2020)

Abrahamse (2020) revised literature on nudging food choices as well. The findings of the review are similar to Vandenbroele et al. (2020) as they indicated that nudges can be effectively applied to boost ecologically sustainable food choices even though altering people's food choices is difficult. Labeling foods encourages food choices on their own and as a part of information campaigns. Positive ecolabels were found effective but on the contrary negative labels indicating high climate impacts did not have an effect on purchasing decisions. Nudging was found more effective when it was executed as altering the choice architecture by, for instance, modifying the placement of sustainable foods. In addition, visual prompts as nudges were most effective when people were already motivated to change their consumption. The review revealed that the long-term effects of nudging are quite unknown. (Abrahamse, 2020)

Also, Hanss and Böhm (2013) examined nudging as they studied the effects of information intervention on purchasing sustainable groceries. They aimed to test if information intervention results in purchase intentions and behavior as well as self-efficacy beliefs meaning the degree to which individuals think they can add to sustainable development. The results indicate that certain types of information interventions lead to long-term sustainable purchase intentions and behavior but do not affect self-efficacy. Providing consumers information on how

they can lower their environmental and social impacts via purchasing decisions and how joining in sustainable purchases can encourage others to consume sustainably, were concluded to promote sustainable consumption. The study concluded that sustainable consumption is not boosted by increasing consumers' beliefs of the importance of individual actions but rather by informing consumers on how different products are linked to environmental problems. In the study self-efficacy did not affect the buying behavior, perhaps, as the participants likely thought sustainability to be institutions and other powerful actors' responsibility. According to the study, consumers can be encouraged to buy sustainable groceries by informing how the trade, production and consumption of groceries are linked to social and environmental problems. (Hanss & Böhm, 2013)

Information nudges were investigated by Carlsson et al.'s (2023) study on health, climate impact, antibiotics usage, and animal welfare labels' effect on consumers' purchases on meat and meat-substitutes. Information provision in the form of sustainability labels can modify consumers' attitudes and therefore affect purchase decisions. For labels to function, it is essential that consumers trust the labels and institutions behind them. The findings indicate that labels on climate impact and health increase the purchases of meat-substitutes. Thus, differentiating meat-substitutes from meat based on environment and health aspects can affect consumer behavior. Also, labels on meat can increase the consumption of it, as labels that indicate animal welfare and non-use of antibiotics result in consumers likely choosing the meat option over meat-substitutes. Carlsson et al.'s (2023) result is similar to Abrahamse (2020) as the study also found correlation between positive labels and increased purchases. In addition, the study investigated what other factors could result in consumers choosing the meat alternative. Many consumers found the labels the most effective, yet other factors included taste, lower price, and visibility of meat alternatives. The results revealed that consumers are against higher taxes on meat and favor simply reducing the prices of meat-substitutes. The study concluded that consumers would like more information via labels which is similar to Jones et al.'s (2011) results on consumers asking for information. (Carlsson et al., 2023)

Also, Hornibrook et al. (2015) studied labels as they considered how carbon labeling of grocery items affects buying decisions. Previous research has debated about the effectiveness and often a gap in intention and behavior is found. The study utilized actual purchasing data and focus groups to delve deeper into the impact of carbon labeling. The study found that the environment is less thought of at the supermarket than at home, and when the environment is thought of at the store, the focus is on, for instance packaging, instead of the types of products available. The results indicated that carbon labels were not very familiar and did not have an effect on buying decisions. The possible reasons for the lack of effectiveness were the lack of understanding and awareness of the labels, social influence such as buying food for children's liking, and diverse nature of consumers. The study revealed that some consumer segments thought retailers could simply limit the selection to have only the more sustainable alternatives available and not leave the decision to choose sustainably to the consumers. The

study also concluded that marketing carbon labels more as a “stamp of approval” than for comparison purposes could lead to improved effectiveness of the labels. (Hornibrook et al., 2015)

Corrin and Papadopoulos (2017) contributed to the discussion by reviewing literature to explore attitudes and barriers towards vegetarian diets and discuss how the information on the attitudes can be utilized to create health promotion initiatives. The vegetarian diet raised both positive and negative connotations, yet the majority of perceived benefits included health and well-being. Barriers to starting a vegetarian diet included the pleasure of eating meat, unwillingness to change habits, fear of nutrient deficiencies as well as information barriers. The review concluded that initiatives should focus on informing people on different vegetarian dishes, how to prepare them and reducing meat consumption instead of fully stopping it. According to Corrin and Papadopoulos (2017) the focus should be on decreasing the perceived barriers and not on emphasizing the benefits. The finding of information provisions’ positive effect is similar to Hanss and Böhm’s (2013) results and close to Carlsson et al.’s (2023) conclusion on consumers wishing for more information on the sustainability of products. (Corrin & Papadopoulos, 2017)

Vermeir and Verbeke (2006) researched the supposed gap between favorable attitude towards sustainable products and the actual intention to purchase them. The study utilized a concept similar to self-efficacy: perceived consumer efficiency, meaning the extent to which an individual believes their actions contribute to the solutions. Their results indicated that consumers who think that their individual actions contribute view sustainable products more positively and are more likely to purchase them. However, similar to Hanss and Böhm (2013), Vermeir and Verbeke’s (2006) results indicate that self-efficacy is hard to manipulate and change. Their results also revealed that most consumers think sustainable products are difficult to access and believing otherwise will result in a more positive attitude towards purchasing sustainable products. Perceiving the availability low results in not buying sustainable products even though the attitude towards them would be positive. The results tell that consumers’ thoughts on availability are rather simple to change. The findings also indicate that purchasing sustainable products can be promoted, for example, by increasing consumer engagement, self-efficacy, certainty, and perceived availability. (Vermeir & Verbeke, 2006)

In addition, Pilgrimienè et al. (2020) studied features that promote consumer engagement in sustainable consumption. The study found out that internal factors had a slightly bigger impact on sustainable consumer engagement than external factors. Their results are similar to Vermeir and Verbeke (2006) and differ from Hanss and Böhm (2013) as Pilgrimienè et al. (2020) concluded that consumers who recognize their own responsibility and believe that their actions matter, are more likely to take part in sustainable consumption. Based on the study retailers should improve green products accessibility regarding price and convenience and utilize campaigns to inform about individuals’ responsibility and ability in sustainable consumption. According to

the study, engaging communication is proven most successful and to utilize engagement, retailers could provide, for example, apps for tracing the sustainability of one's purchases and rewards on sustainable purchases. The study also found that consumers who are emotionally engaged in sustainability are likely to consume more sustainably. (Pilgrimienè et al., 2020)

Also, Felgate et al. (2012) studied the differences between consumer segments by studying the impact of promotions in food retailing with loyalty card data. Promotions aim to influence purchasing decisions and achieve some objectives of retailers or manufacturers. Consumers can respond differently to promotions based on income, age, education level, employment status and family size. The study reveals that different types of promotions, such as multi-buys and medium price cuts, affect purchases differently in different product categories. Consumers were likely to opt for organic when it was on sale and switch from standard to premium when premium was promoted. Also, on the contrary, the sales of organic can be negatively affected when the conventional option is on sale. Multi-buy offers can also result in some consumers choosing other normal price options if they do not wish to purchase a larger number. The results indicate that different promotion strategies are needed to address the needs of different consumer segments. (Felgate et al., 2012)

In conclusion, the literature review highlights the grocery retailers' role in changing food consumption habits. Despite many retailers having committed to sustainability, the practices are often lacking, as noted by Jones et al. (2011). Furthermore Dawson's (2013) study emphasizes how the big, concentrated retailers have plenty of power which could be utilized for promoting sustainability aims, for instance. The studies suggest that retailers have work to do in promoting sustainable food as many still perceive it hard to access. In the view of that, both Vermeir and Verbeke (2006) and Pilgrimienè et al. (2020) found that perceiving the availability of sustainable food products low, will likely result in not purchasing them. However, the perceived availability could be improved via different campaigns (Pilgrimienè et al., 2020) as well as various promotion methods (Felgate et al., 2012), for instance.

Many of the articles studied nudging as a means for retailers to influence food consumption and purchasing. Vanderbroele et al. (2020) and Abrahamse (2020) both concluded nudging to show promising results but the long-term effects of the actions were unsure. Hanss and Böhm (2013), Carlsson et al. (2023) and Hornibrook et al. (2015) all studied nudging via information provision by labels. Hornibrook et al. (2015) concluded that carbon labels are not efficient perhaps due to not being understood. In addition, similarly Carlsson et al.'s (2023) study revealed that consumers need to understand and trust the labels and institutions behind them. Yet, the study concluded labels informing about positive impacts and matters to be efficient (Carlsson et al. 2023). Additionally, Hanss and Böhm (2013) found information labels on how to lower environmental impacts via food purchasing to be efficient. In addition, for people to adopt more sustainable food habits, the barriers could be lowered by simply informing about

vegetarian dishes and how to prepare them, as concluded by Corrin and Papadopoulos (2017).

Together, the reviewed articles underline the complexity of sustainable consumption and request for a comprehensive approach. Whereas retailers have a central role in affecting consumer behavior, a combination of nudging techniques and tailored promotions, for example, are needed. Addressing barriers, increasing awareness, and providing information are central actions. Whilst the field evolves, continued research is needed to better understand the consumers' needs and for shaping new effective strategies and approaches.

3.2 Grocery retailers' role in changing food consumption

To transfer into sustainable food systems and diets, multiple levels of policies and actors are needed. A single actor will likely not catalyze the whole shift. (Willett et al., 2019) Yet single actors in the industry possess plenty of power and ability. As the grocery chains work as supply chain bottlenecks or as gatekeepers of the food system, they have vast market power over the agricultural producers and also consumers (Reisch et al., 2013; Jones et al., 2011). In addition, retailers are in a position to influence the whole food system. The largest actors in the food industry can positively support new principles and practices that deliver sustainable foods to consumers (Miller et al., 2021). But of course, retailers are also affected and regulated by, for instance, government policies (Jones et al., 2011). Still, retailers have the ability to transform the food system (Reisch, 2021) and take a part in the transition.

Retailers have a large role in making food choices more sustainable but creating the change can be hard. Overall, large retailers have significant impacts on the environment, economy, and society (Jones et al., 2011) and they are in a unique position to manage the connection between supply and demand, and push the demand towards sustainability (Bauer et al., 2022). Also, it is vital to increase knowledge on the fact that retailers functioning as the intermediaries between producers and manufacturers on the other side and consumers on the other side, results in retailers having responsibility and a central role in advancing sustainable consumption (Jones et al., 2011). Escaron et al. (2013) state that supermarkets are an ideal setting for interventions that aim to better food purchase decisions. Yet it is important to note that even though retailers have potential to promote sustainable consumption, changing people's purchasing behavior and food choices is difficult (Abrahamse, 2020; Bauer et al., 2022) and it mostly likely takes time and multiple efforts. In addition, although creating and maintaining behavioral changes are largely researched topics in multiple disciplines, there are still not certain answers on how to succeed in it (Reisch, 2021).

Food choices have many environmental impacts and retailers have a responsibility to lessen these impacts. As private households' consumption contributes largely to environmental issues, such as climate change and

acidification of soil and water, transition towards sustainability requires individuals to alter their consumption. A way for individuals to contribute to sustainable consumption is purchasing sustainable food. (Hanss & Böhm, 2013) Thus, encouraging consumers towards environmentally sustainable diets is a vital step for decreasing greenhouse gas emissions and taking part in the sustainability transition of food (Abrahamse, 2020). Retailers have a huge responsibility in affecting food choices as they decide what is available to consumers (Vandenbroele et al., 2020). In addition, concentrated retailers have increased contact with a large number of diverse customers (Jones et al., 2011) and can therefore affect plenty of consumers. As retailers can greatly influence changes in production processes and consumption habits and have an effect on consumers decision-making (Jones et al., 2011; Steils, 2021), it is important to investigate if their actions and practices enable sustainable consumption.

Retailers have power to promote sustainable consumption via three ways: through their own actions, through collaboration with suppliers meaning influencing the supply chains, and through interaction with consumers by altering consumer behavior. Simply, retailers can promote sustainable consumption by the alternatives and choices they provide and by influence within stores (Jones et al., 2011). The means retailers possess to influence food choices include product development, range development, packaging, positioning, category development and product traceability, pricing, promotions, store design, visual and auditory means, for instance (Dawson, 2013).

Noting that different customer segments request different means for promoting sustainability is vital. Some consumer segments, such as young families, can be in favor of “choice editing” where retailers edit out unsustainable products on the behalf of consumers (Hornibrook et al., 2015). An approach for retailers to execute this choice editing is limiting the number of unsustainable products and developing labeling policies (Jones et al., 2011).

To achieve sustainability strategies, retailers should reconsider their marketing and pricing policies. Retailers’ stated strategies often include increasing sustainability and sustainable consumption, but the strategies are seldom very present in the stores. Only some posters in the supermarket aisles might mention sustainability targets or aims briefly. (Jones et al., 2011) Therefore, retailers need to be aware of their responsibility on affecting food choices (Bucher et al., 2016) and note that store elements affect consumers’ purchases greatly (Steils, 2021). Also, with marketing consumers can be assisted to find, choose, and use sustainable products by offering information, guaranteeing availability and affordability of sustainable alternatives (Jones et al., 2011). Policies aimed at promoting sustainable food consumption should focus on making sustainable food affordable as price is a key attribute into consumption (Piracci et al., 2023). Thus, grocery stores could modify their pricing policies and provide discounts on foods that align with the planetary health diet.

Promoting sustainable diets requires effective and engaging communication. According to Rejman et al. (2019) the key drivers for sustainable diets are the need to improve health, lower prices, knowledge on how to alter

diet towards plant-based and gaining information on food produced sustainably. Hence, consumers are asking for information which retailers can provide. But simply communicating to consumers about the issues of unsustainable consumption is not as effective as engaging communication. By engaging consumers with, for example, apps for tracing sustainability of purchases; creation of online and offline communities focused on sustainability; gamification; and rewards on sustainable purchases and consumption behavior could truly help the consumers and increase the sustainability of food purchases and diets. (Pilgrimienè et al., 2020)

Retailers possess plenty of possible means to alter food purchases towards sustainable. To promote sustainable diets retailers can set sales targets for sustainable and plant-based products; collaborate with non-governmental organizations and government to drive sustainable food consumption; shift consumer choice by enhancing display, affordability and availability; disguise change by nudging; inform about sustainability issues; make sustainable food socially desirable by, for instance utilizing campaigns with influencers or celebrities; and boosting memorability by considering product placement to promote plant-based alternatives (Clark et al., 2020). To increase sustainability retailers could reduce unsustainable offers (Jones et al., 2011). In addition, retailers should improve sustainable products' accessibility regarding price and convenience; and utilize ads and campaigns to inform about individuals' responsibility and ability in sustainable consumption as often external factors can boost sustainable consumption instead of individuals own beliefs and motivations (Pilgrimienè et al., 2020).

Likewise, Silvasti et al. (2019) have suggested multiple means for Finnish grocery chains to promote the planetary health diet. The means include not giving promotions on meat and meat products, except if the expiration date is due; setting sales goals of plant-based proteins and action plans on achieving those; clearly stating the origin of products; excluding meat products produced outside of the EU from the assortment; removing candies from the checkout registers; and setting strict environment and sustainability requirements to stores' own brand products. (Silvasti et al., 2019)

Recently retailers' means for influencing food purchases have been increased. Often policy makers that try to improve the sustainability of the food system have had three key instruments to utilize: information-based, market-based, and regulatory. In recent years, the instruments have been accompanied with "nudging" instruments such as altering the choice architecture. (Reisch et al., 2013) With different consumption interventions, such as providing information on how to lessen social and environmental problems via purchasing decisions, retailers can increase consumers' intention to buy sustainable products (Hanss & Böhm, 2013). The following sections present the different means grocery retailers possess to promote sustainable food purchasing.

3.3 Nudging techniques

The following sections describe different nudging techniques. First the concept of nudging is defined and explained, and then the different nudging means grocery retailers possess are considered in detail.

3.3.1 Nudging

Nudging was introduced by Thaler and Sunstein in 2008 based on previous behavioral research as a means to alter elements of the choice architecture to change peoples' behavior in an expectable manner without prohibiting any alternatives or remarkably changing economic incentives. In the context of nudging, choice architecture refers to the context in which people make choices, also known as the decision environment or more precisely, in this study, the food environment. (Thaler & Sunstein, 2008)

Nudging can be executed with the optimization of choice architecture as by changing the food environment, sustainable and healthy options and foods can be made visible easily. The food environment consists of multiple elements such as product positioning, visibility, and packaging. (Vandenbroele et al., 2020) Retailers could promote healthy and sustainable food environments (Thorndike, 2020) as often consumers think nudging interventions could help them to regulate consumption decisions (Vandenbroele et al., 2020). Choice architecture is important in influencing food choices, and with nudging retailers can have an impact on choices (Bucher et al., 2016) and promote the planetary health diet, for instance.

Nudging aims to move behavior to a desired direction without restrictions or altering economic incentives, drastically at least. Nudging does not make any alternatives much cheaper nor forbids any products as nudging embraces the freedom of choice. (Vandenbroele et al., 2020) With nudges consumers' choices are gently pushed towards more sustainable products (Bauer et al., 2022).

As nudging relies on quick mode decision making, it can be effective in routine-like purchases such as food purchases. Usually nudging does not require much cognitive effort from consumers as its execution might even go unnoticed by consumers (Vandenbroele et al., 2020). Nudging steers people towards wanted behavior by changing choice architecture, food environment, and activating quick mode decision making. Thus, nudging could be effective in altering behavior relying on automatic processes such as food choices. (Abrahamse, 2020)

Yet not all forms of nudges work. Often consumers make rapid food decisions and choose products already familiar to them and changing these decisions can be difficult (Kalnikaitė et al., 2013). Continuous nudging is needed to create slow changes as discontinuing a nudge might end the effects of it (Bollinger et al., 2022). The form of the nudge also influences, as for instance, information nudges need to provide just enough information in a rather simple form to have the best effects (Kalnikaitė et al., 2013).

In studies the effectiveness of nudges has shown varying results but the perception of it is often positive. Often studies find nudging to have moderate or limited impacts (Trafford & de la Hunty, 2021; Katare et al., 2023). For instance, Bauer et al. (2022) found nudging to have effective results but on the contrary, for example, Weingarten et al. (2022) did not. The fact that peoples' behavior is difficult to change might be a reason for the limited effects of nudging as nudging relies on influencing behavior change and keeping up the changed behavior (Trafford & de la Hunty, 2021). Yet nudging might be a useful and harmful means for retailers to utilize as it does not limit consumers' choices (Katare et al., 2023) and often consumers perceive nudging in a positive light (Vandenbroele et al., 2020).

Yet, in the food sector, simple nudges aimed at shifting consumers towards more sustainable and healthy options can function quite well too. For example, placing vegetables and fruits nicely on display or at the beginning of a lunch buffet line will likely promote the selection of these products. (Reisch et al., 2013) Often in Finnish supermarkets the fruits and vegetables section is the first when entering the store and therefore most customers at least see the section.

Sometimes the carefully decided product placement seems to be utilized as a nudge towards unsustainable choices. For example, often candy bars and other products that are less beneficial to health are placed at the checkout for consumers to make last minute choices (Huitink et al., 2020). The placement of candy bars seems to be an opposite version of sustainability nudging. But the product placement is carefully decided and often based on certain goals. Most retailers seek to increase and encourage consumption and the easy-to-sell products on display aim for achieving sales targets (Jones et al., 2011).

In the food environment nudges can either push consumers towards favorable options or away from least favorable options (Trafford & de la Hunty, 2021). Well-designed choice architecture and well-chosen nudges guide peoples' behavior and propose an effective, low-cost behavior-change tool which indicates promising effects (Reisch, 2021). Overall, nudges are low-cost and easy to apply methods. Furthermore, if one type of nudge does not provide effective results, another type might (Trafford & de la Hunty, 2021).

Nudges can increase consumers' awareness on sustainability issues and lead to more sustainable food choices. Hanss and Böhm (2013) studied information interventions. Their results revealed that nudging by providing consumers information about environmental problems and their linkage to human activities led to stronger intention to buy sustainable products which also led to change in behavior and increased sustainable purchases (Hanss & Böhm, 2013). Similarly, Wongprawmas et al.'s (2023) results indicate that nudges could result in consumers becoming more aware of the impacts of their purchases. Furthermore, nudging could be used to effectively increase the sales of sustainable and healthy foods (Wongprawmas et al., 2023).

To further boost the effectiveness of nudges other instruments, and actors, might be needed. Trafford and de la Hunty (2021) suggest that nudges could be an effective means for encouraging consumers to alter their behavior. But their

study proposes that combining nudging with other means, such as new product development, could provide the greatest results (Trafford & de la Hunty, 2021). Likewise, Bauer et al. (2022) add that nudging may be efficient, but consumers' attitudes and motivation affect the effectiveness greatly. Thus, combining nudging with other policy instruments, such as taxes and laws, might be more promising (Bauer et al., 2022, 3; Reisch, 2021). Also, Katare et al. (2023) state that an intervention that combines a nudge and fiscal policy, for instance, could best promote sustainable consumption behavior. Combining other instruments obviously requires other actors besides retailers and thus the responsibility of increasing the sustainability of food purchases is shared by many. However, the grocery retail sector can take part in the sustainability transition with several different nudges (Trafford & de la Hunty, 2021) presented in following sections.

3.3.2 Information and education

Offering consumers information about the environmental impacts of food provides the retailers a great chance to promote sustainable food. Consumers might be nudged towards sustainable food choices with information provision and education. Information can encourage consumers towards sustainable and healthier choices and information provided specifically in the stores can modify impulsive decisions. (Steils, 2021; Yener et al., 2023) Knowledge of sustainable food is essential to purchase decisions and retailers are in a position to educate customers about sustainable purchasing (Tong et al., 2023). Retailers can support consumers with information campaigns or with food labels to boost knowledge and help at the point of purchase (Edenbrandt & Lagerkvist, 2022). Also, educating and informing consumers on environmental issues and providing possible solutions contributes positively to sustainable consumption behavior (Saari et al., 2021). In addition, with information provision the perceived availability of sustainable food can be easily modified. (Vermeir & Verbeke, 2006)

Providing environmental knowledge can lead to sustainable food purchasing. Environmental knowledge, meaning the relevant information individuals have on environmental concepts and issues among the ecological impacts of consumption and production, does not directly influence behavior but can modify attitudes and opinions (Dimitrova et al., 2022; Saari et al., 2021). Environmental knowledge can boost behavioral intention (Dimitrova et al., 2022) and consequently result in more sustainable food purchases. Consumers whose attitude towards purchasing sustainable food is positive and behavioral intentions high, tend to have the highest level of involvement in sustainable purchasing (Vermeir & Verbeke, 2006).

Consumers' awareness of climate impacts affects the sustainability of food purchases. Awareness of one's environmental impact can modify buying behavior into more cautious (Yener et al., 2023). Consumers with higher awareness on the climate impacts of food tend to buy more sustainable-labeled products and their impulsive food decisions lean towards healthy choices (Edenbrandt & Lagerkvist, 2022; Steils, 2021). Furthermore, on the contrary, consumers with low awareness and knowledge on the climate impacts of food

tend to purchase most meat products and less health-labeled products (Edenbrandt & Lagerkvist, 2022; Steils, 2021). Thus, consumers who have the least knowledge on environmental effects of food might have the highest potential to decrease carbon emissions (Edenbrandt & Lagerkvist, 2022).

Informing consumers about the concept and benefits of sustainable food is often lacking by the retailers. The advantages of sustainable products are seldom well communicated to consumers (Vermeir & Verbeke, 2006) and most information about sustainable consumption is on the product packages rather than displayed by the retailers (Jones et al., 2011). Additionally, consumers rarely have a high understanding of the real sustainable features of food and products (Vermeir & Verbeke, 2006) and thus there is a need for information.

Lack of information and attitudes are barriers to eating a vegetarian diet, for instance. Consumers might lack info on what to eat, how to prepare vegetarian dishes, and what are the nutritional aspects. (Corrin & Papadopoulos, 2017) For instance, many consumers think meat is hard to replace due to the nutrients it provides (Edenbrandt & Lagerkvist, 2022). In addition, plenty of consumers are unfamiliar with meat-substitutes and do not consider them as proper alternatives to meat (Bianchi et al., 2022). Attitude towards meat eating can predict the level of meat consumption and thus nudging by providing information about the negative effects can result in a more negative attitude and therefore reduced consumption (Weingarten et al., 2022). As messages about the negative impacts of excess meat-eating can cause intention to change behavior. Yet if a consumer is a really profound meat eater no messages are likely to have an impact (Vainio et al., 2018).

Providing sustainability information can lead to more sustainable food purchases. Information nudges can result in behavioral changes (Katare et al., 2023) as clear and reliable information is a key factor in purchasing decisions (Vermeir & Verbeke, 2006). In addition, active avoiding of information is a barrier for changing consumption habits (Carlsson et al., 2023). Intervention studies of how consumers can be assisted to buy sustainable food have been somewhat limited, yet some studies have shown positive correlation between sustainability information and sustainable food purchasing (Hanss & Böhm, 2013). Even though information provision might not lead directly to change on consumption, it raises awareness which might result in behavior change and improved acceptance of other policy interventions at least (Temme et al., 2020).

Yet on the contrary, many studies on nudging with information provision often indicate mixed results. Weingarten et al.'s (2022) results indicate that nudging with information provision about negative environmental effects leads to very limited changes in attitudes. Yet for the consumers who had more limited knowledge on the topic of negative effects of meat consumption, the information impacted the attitudes more (Weingarten et al., 2022). As beliefs and attitudes affect how information provision works (Vainio et al., 2018). Bianchi et al. (2022) also state that information on health and environmental benefits often changes attitudes but does not lead to change of habits, meaning changes in purchases. But Yener et al. (2023) conclude that consumers' buying decisions towards green

products are slightly affected by environmental knowledge. Also, alone one information nudge does not have great impacts but when information is repeated consumers intentions might change (Katare et al., 2023). In addition, it is important to note that the form of the information can impact the effectiveness as well.

Often information nudges serve the best when accompanied with other means. Information nudges function well in offering flexible choices and communicating the effects of different consumption choices (Katare et al., 2023). Combining multiple communication-based tools, such as information and education campaigns, on sustainable and healthy eating can improve the effectiveness of those means (Piracci et al., 2023). As food choices are mostly influenced by price, convenience, and taste; utilizing only information-based interventions is likely to cause small and slow impacts. Yet information-based interventions can be a part of a bigger strategy in promoting sustainable eating. (Bollinger et al., 2022)

To ensure effective results, nudging with information needs to be considerate and subtle. Trying to convince people about the advantages of sustainable lifestyles might result in people opposing sustainability even more. As if someone is now trying to eat according to recommendations, even more recommendations and goals can seem too unreasonable. (Matschoss, 2022)

The most effective information is provided in a rather simple form. Communication nudges on the sustainability of food must be appropriate, accurate and relevant and it must not cause misperceptions (Miller et al., 2021). When making new food choices consumers require only key information as that supports fast decision making. Often simple displays can be understood fast. (Kalnikaitė et al., 2013) With information simplification consumers are provided information about new products in a simple form. For instance, simple information displays around the store can encourage consumers to choose vegan options. (Trafford & de la Hunty, 2021) Both complex information and lack of information cause consumers to be unsure of what to buy (Vermeir & Verbeke, 2006). In addition, consumers who think climate information is difficult to utilize are less keen on utilizing the information when purchasing (Edenbrandt & Lagerkvist, 2022).

Retailers can utilize multiple different education and information provision nudges. For instance, fact sheets, in-store screens and displays can contribute to creating food knowledge on sustainable eating. Also, recipe videos and brochures with recipes and inspirational information can display how to prepare and consume different vegetables or plant proteins, for example. (Steils, 2021) The recipes can encourage consumers towards sustainable food purchases (Vandenbroele et al., 2020). Nudging by presenting recipe ideas on how to use specific vegetables, for instance, helps consumers to choose some vegetable as they get an idea on how to prepare it. This sort of nudge simplifies the choosing process (Bauer et al., 2022). In addition, retailers can nudge towards sustainable food with posters about their climate actions and goals, different climate related campaigns, fairtrade and local products, and specific products such as fish and

its certificates (Jones et al., 2011). Providing clear information on, for example, how everyday consumption affects ecological footprints can be an effective way of providing information as it includes a feedback component (Hanss & Böhm, 2013). Perhaps the most convenient way of providing this sort of information would be through different calculators for carbon footprint and domestic consumption in the retailers' apps.

Nudging with education provides great chances, also for the retailers to update their own actions. Consumers' attitudes can be nudged positively towards improving sustainability with education. Educating consumers on organic farming practices can raise consumers' awareness of the reasons behind the higher costs and might help them to understand and accept the cost, and thus eventually purchase and consume organic food despite the higher price. (Testa et al., 2019) Also, educating consumers about accepting "ugly" fruits and vegetables to make people accept the differences in appearance and purchase all fruits available. Obviously, retailers also need to give up or largen their own aesthetic standards to prevent food waste and provide the nonstandard fruits and vegetables to be purchased. (Boca, 2021)

3.3.3 Labeling

Food choices can be nudged with various types of labels. Nudging with food labels as an information provision mean guides choices in the food environment (Abrahamse, 2020). Different eco- and sustainability labels are used to provide information on the externalities of global food production with the intention that consumers who are aware of products' environmental impacts choose the products with less impacts (Hornibrook et al., 2015). In addition to sustainability labels, also quality signals can be utilized as nudges. Different quality signals include attitude-based, such as product ratings; consumer behavior-based, such as top seller labels; and authority-based, such as store's choice labels. (Sigurdsson et al., 2020)

Accompanied with trust, labels can influence purchasing decisions. When consumers trust and understand the labels and institutions behind them, they are more likely to observe the sustainability claims (Vandenbroele et al., 2020) and alter their purchases (Carlsson et al., 2023; Sigurdsson et al., 2020). Labels cause emotional and behavioral responses. Products with sustainability labels are viewed to contribute to environmental protection and consumers buying them experience emotional gratification. Also, feeling guilt can make consumers feel more responsible for environmental harm and increase the purchasing of sustainable products. (Vandenbroele et al., 2020) Generally, people are unaware of how much their food choices impact the environment and environmental labels can provide insides on the issue (Abrahamse, 2020).

Consumers want more information about the impacts of their purchases but are often confused with different environmental labels (Kalnikaitė et al., 2013). In Finland consumers are increasingly interested in choosing environmentally sustainable products but major misunderstandings about fundamental environmental concepts, such as carbon footprint, are present (Muller et al., 2019;

Hartikainen, 2014). Many Nordic shoppers might be familiar with ecolabels but the real meaning of them is unclear (Vanclay et al., 2011). For example, for carbon footprints to have an impact on food purchasing consumers have to comprehend the concept of carbon footprint and be able to compare whether the footprint is high or low. Overall, Finnish consumers think that carbon footprints, for example, would affect their purchasing decisions but only if other criteria such as price and taste are satisfied (Hartikainen et al., 2014)

The effectiveness of environmental labels as a means to promote sustainable purchasing is often debated as some studies find it effective and some not (Muller et al., 2019; Hornibrook et al., 2015). Hornibrook et al. (2015) state that ecolabels can confuse consumers and go unnoticed. Also, Abrahamse (2020) concludes that ecolabels often have limited impact on purchasing decisions of food. Positive labels can increase sales, but “bad labels” do not have an effect on buying products with high climate impact. (Abrahamse, 2020) However, often ecolabels are found effective when other products attributes, such as price, convenience, taste, are strong meaning the eco-labeled products are likely to be purchased when they do not require paying more, sacrificing quality, or making an extra effort (Hornibrook et al., 2015). In addition, when an eco-labeled product is also the cheapest, the sales can increase significantly (Vanclay et al., 2011). Also, Neumayr and Moosauer (2021) state that even though consumers might think that eco-labels do not influence their food choices, in reality the labels have a positive effect. They also found that simple sustainability labels utilizing traffic light like colors were most efficient. (Neumayr & Moosauer, 2021) Carlsson et al. (2023) conclude that different labels can change consumer attitudes and intentions which can lead to change in behavior and consumption (Carlsson et al., 2023). Besides, it is important to note that labels are not effective if consumers do not fully understand the labels (Hartikainen et al., 2014). Thus, the effectiveness of labels depends on multiple aspects and some labels likely have greater impacts than others.

Yet despite the inefficacies, different types of sustainability labels can have great impacts too. Sari et al. (2021) state that sustainability labels can influence purchasing intentions greatly. A combination of verbal and visual cues has been found to boost the efficiency of product labels the most (Vanclay et al., 2011). For example, a carbon footprint that combines the emissions as a text with a foot logo would be efficient. Often simple cues, such as logos signaling overall environmental impacts, in colors are more effective than complex logos that signal multiple environmental impacts such as water, soil, and pesticides as they do not really have an impact on consumers. Yet a bit more complex logos can function too but depends on the consumer. (Muller et al., 2019) As for instance, environmentally oriented consumers could view carbon footprint as a too narrow indicator of sustainability when used as the only indicator of sustainability (Hartikainen et al., 2014).

However, noting that nudging with labels might result in only temporary effects is important. Bollinger et al. (2022) studied information intervention nudges with nutrition on-shelf labeling and found a small increase in the sales of

foods labeled as the most nutritious. However, most of the increased sales returned to previous levels when the intervention stopped, and on-shelf labels were removed. The intervention was supported with posters that provided information about the labels. (Bollinger et al., 2022) Hence, nudging needs to be consistent and long-lasting to achieve permanent changes in consumption habits.

Different consumers respond differently to sustainability labels. Sustainability labels function as eye-catchers and help consumers figure out which products are sustainable. Labels can, for instance, provide information on the seasonality of products and certifications. Often sustainability labels have positive perceptions and are linked to great taste and perhaps willingness to pay. In addition, products labeled as local are becoming more popular due to taste and quality associations. However, consumers who care less about the environment are likely to think that organic labeled products are less tasty (Vandenbroele et al., 2020). Thus, different labels can also have negative effects and some labels might discourage some consumers. For instance, often vegan products are not labeled as vegan, at least very visibly, in order to not push away meat eaters.

Labeling products with different colors proposes interesting effects with some disadvantages too. Products can be labeled with different colors mimicking traffic lights: green for sustainable and red for unsustainable. A black label for high CO₂ emissions can lead to decreased sales and green labels can increase the sales. The colored labels also have their weaknesses as red labels might be more associated with unhealthy and thus might not work for marking unsustainable products. Also, some consumers could compensate their one sustainable-labeled item with unsustainable items and end up with a more unsustainable shopping cart than they would have without the labels interfering. (Vandenbroele et al., 2020) In addition, utilizing green labels for animal welfare and antibiotic-free can increase the consumption and choosing meat over meat-substitutes (Carlsson et al., 2023). Thus, carefulness in what is labeled as green is needed as mixing animal welfare labels with environmental labels can result in consumers thinking meat is a green or sustainable option too.

Labeling products provides the retailers great possibilities to influence food purchasing. Grocery stores might not be able to affect the packaging labels, yet they could utilize different sorts of price tags for sustainable products or information signs to educate their consumers and at least improve the visibility of sustainable products. Retailers could place, for example, carbon footprints next to product ranges. The labels could mimic traffic lights or utilize green for better than average, yellow for close to average and black for above average emissions. (Vanclay et al., 2011) As often consumers make purchasing decisions within product categories, and not between product categories, providing labels that indicate which is the most sustainable product within category would enable consumers to compare products inside food categories and alter their purchasing behavior (Hartikainen et al., 2014).

In addition, retailers could utilize labels to create expectations and values. For example, region-of-origin labels tend to have a positive association. Products

from certain areas are expected to give a greater taste experience. (Vandenbroele et al., 2020) Retailers could choose to mark only sustainable products as local and thus boost the products' appeal. When consumers expect the local products to be great, they tend to think more positively about the products and perhaps choose to buy it (Just & Gabrielyan, 2016). Also, retailers could label products and make claims such as "this is for green consumers" to improve the sales of sustainable products as consumers are looking for products that fit their consumer identity (Piracci et al., 2023). With labels, different products can be made socially acceptable and desirable. Labeling products as "top seller" or "store's choice" tells consumers what others have bought or what is valued. (Sigurdsson et al., 2020) By marking sustainable products as top sellers and store's choice, retailers could promote the planetary health diet.

3.3.4 Placement and visibility

Nudging with placement and visibility offers great possibilities for grocery retailers. With placement, the cues in the food environment are altered (Abrahamse, 2020). Food retailers can influence consumption by organizing and displaying food items in different ways (Bucher et al., 2016). When products are placed in a prime location that aims to improve the salience the products are in a so-called quality location. Also, bonus display areas can improve the saliency of products. (Payne & Niculescu, 2018) Often what people see first gains the most attention and thus placement matters plenty in the perceived convenience of products (Wongprawmas et al., 2023). Nudging with product placement in the grocery stores can lead to healthier purchases (Temme et al., 2020) as prime locations, such as near cashiers, in multiple locations or at eye level, can be utilized for favorable products (Trafford & de la Hunty, 2021). But combining product placement with other interventions, such as price and labels, could be even more effective (Thorndike, 2020).

Already studies on nudging with food placement have shown promising results. The effects of nudging with food placement have been studied quite a lot in restaurants with canteen or buffet line settings and the results indicate that placing, for instance, salads and vegetarian options first on the service line increases the consumption of those (Wongprawmas et al., 2023). Similar effects could be acquired in retail settings too (Abrahamse, 2020). Nudging with this sort of placement aims to increase the perceived convenience.

Increasing the visibility of certain foods can increase the consumption of those. For instance, foods placed on the eye level might be chosen more often and easily. When a product is hard to find, the perceived convenience and accessibility might reduce and as even a slight inconvenience can reduce the consumption of something, placement and convenience have a great effect on what and how much is consumed. (Just & Gabrielyan, 2016) Overall, the convenience of buying green products has a huge effect on the actual purchases of them (Yener et al., 2023).

Visual attention is important for product selection (Vandenbroele et al., 2020) and different promotional displays and signage impact consumers'

purchasing behavior (Thorndike, 2020). For example, products placed on the eye level draw more attention and are more easily considered to be purchased. Also, another quality location or a hot spot is the shelf next to the cash register as most customers go past that area and there might be plenty of time to look at the products when queuing (Vandenbroele et al., 2020).

The placement can also cause difficulties or mixed results, regarding, for example, meat alternatives. Placing meat substitutes in a specified shelf can cause non-vegetarians to skip that shelf and therefore placing the plant-based options next to the “mimicked” meat could cause non-users to also consider the products (Bauer et al., 2022; Vandenbroele et al., 2020). In this type of choice architecture, the products could appear more familiar and novel when their similarity to already familiar products is easily observed. Yet some vegans or vegetarians would perhaps not appreciate having to shop at the meat section, and also for them finding the products could be hard. The appeal of sustainable food can decrease if the products are touching some moderately disgusting products, such as trash bags for instance. (Vandenbroele et al., 2020) The effect of plant proteins touching meats could result in similar effects for vegans, perhaps. In addition, placing organic products next to the conventional can cause comparative comparison (Vandenbroele et al., 2020) even though for some consumers finding the organic products next to their usual purchases could increase the visibility of those.

Increasing product visibility with signs and placement can lead to more sustainable purchases. Placing arrows or signs pointing towards sustainable or healthier options in grocery stores might increase the consumers’ interest and consumption of those products (Just & Gabrielyan, 2016). Also, improving saliency and perceived conveniency and accessibility can increase the purchasing of different sustainable products such as fruits and vegetables (Payne & Niculescu, 2018). In addition, nudging with positioning on the shelves could affect the sales. Consumers might perceive the middle product in between two products of the same category to be the most popular simply due to its middle position. Therefore, the shelf positioning of sustainable products could be utilized as a positive cue that leads to higher purchases. (Vandenbroele et al., 2020) Bauer et al. (2022) found that nudging by increasing the display area of poultry compared to pork and beef reduced the carbon footprint of meat purchases as poultry tends to be less carbon intensive. Therefore, largening the displays for products that align with the planetary health diet could result in improved purchases.

Placing products next to the cash register provides possibilities for promoting the planetary health diet too. Placement next to cashiers is seen by most shoppers and thus the salience in there is great. Any product placed there is likely to gain plenty of attention. (Payne & Niculescu, 2018) The location next to the check-out counters can be utilized in multiple ways. Payne and Niculescu (2018) tested how a nudge of cashiers providing a suggestion to purchase low-cost fruits and vegetables located near the checkouts would affect the purchases of these. The results revealed that placing fruits and vegetables near cashiers and

encouraging consumers to buy those led to increased purchases. (Payne & Niculescu, 2018) Yet Huitink et al. (2020, 4) found that placing packed fruits and vegetables and bottled water near the check-out counters and removing the candy bars can lead to overall decrease on purchasing checkout snacks but without removing the candies the consumption does not reduce. Therefore, to decrease the sales of less healthy snacks, is totally substituting them with healthier, sustainable options the most effective. (Huitink et al., 2020) Nudging by placing sustainable snacks near the check-out registers and removing the current unsustainable snacks, retailers could improve the sales of sustainable alternatives and promote consumption according to the planetary health diet.

3.3.5 Campaigns and advertising

Campaigns can be used to draw attention and therefore affect purchasing decisions. Advertising and campaigns have a great impact on consumer decisions as increasing the visibility of certain foods can increase the consumption of those (Just & Gabrielyan, 2016). Also, habits or lack of promotions can result in consumers purchasing less sustainable foods (Vermeir & Verbeke, 2006) and hence different campaigns and advertisements can be used to withdraw people from their usual purchases into trying something new. Furthermore, when consumers have high trust in the safety of local food production and food authorities, promoting purchasing of local products as a part of a sustainable diet can be quite easy and effective (Hanss & Böhm, 2013).

Retailers could focus their marketing and commercials on more sustainable products to increase the sales of those (Reisch, 2021). Retailers' strategies and store elements can be utilized to increase the healthiness of grocery choices via promotional materials and educational events, for example (Steils, 2021). In addition, for instance, flyers and signage contribute to consumers' purchasing behavior (Thorndike, 2020) and are easy for the retailers to utilize.

Campaigns that highlight how individual actions matter in sustainable development might have great impacts. Different consumers, obviously, view campaigns differently as, for instance, consumers who think that their actions contribute to sustainable development are more motivated and likely to purchase green products (Hanss et al., 2016; Vermeir & Verbeke, 2008). As sustainable development requires collective actions, consumers might believe that their individual actions do not matter. If consumers doubt the effect of their actions, they might restrain from sustainable grocery purchases, especially if the sustainable products cost more. (Hanss et al., 2016) Thus, campaigns and advertisements that highlight individuals' actions' role in sustainable development could be effective in increasing sustainable purchases (Hanss et al., 2016). Campaigns that inform how individuals can encourage others to take part in sustainable development can increase buying of sustainable products (Hanss et al., 2016; Hanss & Böhm, 2013).

Now, most marketing material is focused on other aspects than advancing sustainability, but new types of campaigns propose a solution. Consumers choose from what is offered to them yet often retailers encourage consumers to

choose certain products via marketing and merchandising activities (Dawson, 2013). Currently, most communication in grocery stores is aimed at increasing and encouraging consumption (Jones et al., 2011), and consequently promoting sustainable food and diets is lacking. To change the situation retailers should focus their campaigns and endorsements on more sustainable products (Reisch, 2021) and utilize, for instance, campaigns with influencers or celebrities to increase the visibility and attractiveness of sustainable eating and create excitement about the topic (Clark et al., 2020).

Nudging with campaigns can be executed in many ways. In stores, different visual prompts such as stickers, posters, signs, and flyers could be used as nudges (Abrahamse, 2020). Also, food sampling can be utilized as an effective nudge in grocery stores. Vandenbroele et al. (2020) found food sampling to have positive effects on perceptions of food, consumer trial and food sales. In addition, tasting is especially useful when sampling rather unfamiliar products, such as tofu, for instance (Vandenbroele et al., 2020). Also, Bianchi et al. (2022) studied the effects of nudging by providing consumers meat substitutes and found that the nudge was effective in reducing meat consumption. Hence, providing food samples could be really effective in boosting the sales of sustainable food as often different plant-based proteins are more unfamiliar to consumers and thus the barriers for purchasing those need to be lowered. Additionally, besides food sampling, the perceived barriers can be reduced through health promotion campaigns that inform what can be consumed instead of meat and how to prepare vegetarian dishes (Corrin & Papadopoulos, 2017).

3.3.6 Social norm setting and personalization

Social norm creation can be used to draw attention to sustainable food purchases. Consumers are influenced by social norms and what others consume. Seeing what others have bought can lead to consumers imitating each other's consumption habits. (Testa et al., 2019) Policymakers, retailers and marketers can direct consumers' attention towards sustainability challenges and increase consumers' perceived obligation to consume sustainable food by creating social pressure (Tong et al., 2023).

Nudging with social norm creation proposes plenty of possibilities in advancing sustainability. Retailers could utilize nudging by creating social pressure or social norms by, for instance, providing messages like "x number of customers prefer this product" next to products (Trafford & de la Hunty, 2021). Utilizing these sorts of messages on sustainable foods could increase the desirability and therefore consumption as experiencing high social pressure to buy sustainable foods can lead to higher intention to purchase sustainable products (Vermeir & Verbeke, 2008). In addition, retailers can widen social norms and reduce food waste by helping consumers to accept less-than-perfect fruit and vegetable appearance (Reisch, 2021) by fruit and vegetable boxes. This way consumers can both save money and improve sustainability by preventing food waste. Also, people successfully engaging in behavior can alter other people's

behavior too. Thus, utilizing different success stories regarding sustainable food choices online, for instance, could boost the desired sales. (Bianchi et al., 2022)

Social norms can be created with different nudges such as social-norm messages and quality signals. Utilizing social-norm messaging to convince consumers that something is the social norm or socially appropriate by messaging, for instance, “x% of Finns have made an effort to reduce their meat consumption” could result in reduced meat consumption. Likewise creating social norms by telling consumers about the retailers’ sustainability measures or stating to be proud of most customers choosing fruits and vegetables, could support the idea of sustainable and healthy food being common, favored, and desirable. (Bauer et al., 2022) Consumers are interested in what others purchase and how their shopping compares (Kalnikaitė et al., 2013). Quality signals from other customers, such as product ratings online and suggesting products based on what others have bought, create social information. If a product is perceived to be popular, consumers can be encouraged to try what others have tried and liked. The popularity signals can make consumers more likely to purchase and even pay more. (Sigurdsson et al., 2020; Kalnikaitė et al., 2013)

Retailers’ apps provide a great platform for different types of social norm nudges. Popularity signals are already present in some retailers’ apps but mostly not to indicate sustainable products. However, the product suggestions could promote the planetary health diet if sustainable foods were signaled popular. But obviously suggesting only sustainable foods as popular would require manipulation of the information of what others consumed as the suggestions would not be based on actual purchases, perhaps. Yet consumers’ trust in retailers results in consumers choosing “store’s choice” products too. (Sigurdsson et al., 2020; Kalnikaitė et al., 2013) As authority-based messages can be effective too, utilizing them on the retailers’ apps could have impacts as well. With “store’s choice” products being sustainable there would be no need to manipulate suggestions. Also, informing consumers that as they bought product “x” they might want to buy product “y” as well could be utilized to promote sustainable products in a less questionable way. Then again, other consumers’ statements usually have greater impacts. (Sigurdsson et al., 2020)

Besides social norm creation, the apps provide even more possibilities for promoting sustainable food. Retailers’ app features can be utilized to nudge consumers towards sustainable food purchases. Sales of fruits and vegetables can be increased with app-based personalized incentives such as offering loyalty card points and gamification elements. Giving consumers purchase targets of certain product groups and rewarding them when targets are met with credits, for instance, can increase the wanted sales of fruits and vegetables, for example. (Stewart et al., 2022) The apps can also be utilized for pre-commitment as reward programs that reward for buying certain products (Trafford & de la Hunty, 2021) such as products that align with the planetary health diet. The personalized rewards and discount coupons in the apps could easily promote sustainable food alternatives. Nudging by providing benefits from purchasing sustainably could help consumers to choose sustainable foods. In addition, gamification elements

in exchange for credit points can increase the consumption of certain items. Gamification provides multiple opportunities but not for all customer segments. (Stewart et al., 2022). Gamification elements could be utilized for promoting the planetary health diet too.

3.4 Discounts and selection

The price of food has great impacts on food purchases and prices received too high will likely prevent buying. Affecting the price of sustainable food might be the most effective way of promoting sustainable food purchases to the consumers. As if a sustainable food product has a higher price, perceived or real, the consumers are less likely to purchase that food. In addition, if the food would be acceptable for taste, the high cost is the central barrier for not buying it. (Miller et al., 2021) For instance, a tax raise on meat could reduce the consumption of it and thus a higher price on unsustainable products could result in reduced consumption (Temme et al., 2020).

Sustainable diets need to be affordable and pricing policies can provide benefits to retailers too. According to the FAO sustainable diets are accessible and affordable to all consumers (Miller et al., 2021) thus it would be vital to make the groceries that support the planetary health diet reasonably priced in order to promote the diet. Pricing policies are a very cost-effective intervention method (Temme et al., 2020) and retailers are able to impact the prices of sustainable products (Jones et al., 2011). In addition, when promotions and discounts attract new customers and drive category sales, they benefit the retailers also (Felgate et al., 2012).

Traditionally pricing policies have been utilized to achieve retailers' objectives, but they can promote sustainable food effectively too. Utilizing promotions in retailing has increased and usually promotions and discounts aim to influence purchasing actions and achieve retailers and manufacturers' objectives, such as improving competitive position, brand extension, category expansion or increased profitability. (Felgate et al., 2012) But discounts and pricing policies could be utilized to promote sustainable food purchases too as generally, promotions and discounts have more effect than nudging with product placement, for instance. Price incentives contribute to consumers' purchasing behavior (Thorndike, 2020) and discounts can effectively improve the sales of healthy items (Huitink et al., 2020).

Different discount strategies answer to different needs but cause disadvantages as well. Various promotion strategies are needed to address the needs of different consumer segments as the segments have diverse needs. For instance, families can favor multi-buy offers while pensioners might not. (Felgate et al., 2012) Also, it is important to note the possible downside effects of different discount offers. For example, "multiple purchases at reduced price" offers could promote excess consumption and lead to increased food waste in the worst scenario. (Jones et al., 2011)

Retailers possess multiple means for promoting sustainable food with pricing. In Europe some retailers are limiting the price difference between organic or fair-trade products and the conventional equivalents by, for instance, setting their limit margins lower or maintaining permanent price reductions. Some grocery chains also provide discount campaigns of sustainable products regularly. Also, some have “organic weeks” or “organic months”. With these sorts of campaigns consumers are encouraged to try new products and options. (Reisch et al., 2013) Furthermore, retailers could prevent the sales of unsustainable products by reducing the offers on them (Jones et al., 2011).

For consumers to purchase foods within the planetary health diet, it is central that a broad selection of the aligning food products is provided and emphasized. Limited consumption of some food might result from limited selection and availability in grocery stores. (Just & Gabrielyan, 2016; Tong et al., 2023) Also, the perceived availability is key as if consumers think proper products are not available or they do not find them, they are likely not going to purchase. Often increasing the availability of sustainable products is done with increasing the visibility too and together they boost purchasing intentions even more (Vandenbroele et al., 2020).

Providing a broad selection of sustainable alternatives in all product categories will likely have an impact on the sustainability of consumers’ food purchases (Just & Gabrielyan, 2016; Tong et al., 2023). Offering a good selection of sustainable and different products can lead to decreased carbon emissions of grocery choices without fully transferring to plant-based diet as choosing the most sustainable product out product ranges has impacts too (Muller et al., 2019). Therefore, providing sustainable alternatives in all categories can have an impact.

Sustainable food choices can also be forced by preserving choice sets. By limiting the food selection to sustainable and healthy, consumers are pushed to choose accordingly. When a consumer has chosen the healthy and sustainable option they need to rationalize the choice by actually consuming that item. Thus, providing certain choices can increase the desired consumption of those choices. (Just & Gabrielyan, 2016) The limiting obviously has its downsides and preventing consumers’ freedom of choice might repel some consumers. Yet, limiting choice sets could be done for certain product ranges. (Silvasti et al., 2019)

Retailers can improve the selection and availability of sustainable food with their own brand products. Stores’ own product lines can be very popular due to their value for money promises and perceived quality, for instance. With these product lines, retailers are able to influence consumption. As retailers are involved in product development and production, they have a possibility for developing sustainable products. (Dawson, 2013) With the brand products retailers could also preserve choice sets as the most unsustainable products could be removed at least from the retailers’ own product lines.

3.5 Theoretical framework summary

This section combines and concludes the theory sections as well as links them to the studied themes of the thesis. The theoretical framework consists of sustainable food, and more precisely the planetary health diet, consumer behavior on sustainable food, and the means grocery retailers possess to influence customers' food purchasing habits towards more sustainable.

The current food system requires a sustainability transition in which grocery retailers can take part (Silvasti et al., 2019; Miller et al., 2021). Food consumption is linked to some of the greatest sustainability and health challenges we are facing and thus changes are needed (Willet et al., 2019). The grocery retailers function as supply chain bottlenecks or as gatekeepers of the food system and have great power over both food producers and consumers and can therefore promote the transition towards more sustainable food consumption (Reisch et al., 2013; Jones et al., 2011).

Diets rich in animal derived foods create the highest environmental impacts (Reisch et al., 2013) and hence sustainable diets have less livestock products and more plant-based foods than are consumed at the moment (Tuomisto, 2019). Sustainable food creates less GHGs, affects the biodiversity less in a negative manner and acquires less land and water usage. Generally, a sustainable diet consists of a diverse intake of fruits, vegetables, whole grains, and nuts, and it is based on nutrition, health, and environmental impacts. (Miller et al., 2021) Taken as a whole, sustainable food notes four key dimensions including ecological, economic, human health, and socio-cultural and political (Ahmed et al., 2019).

Diet recommendations, like the planetary health diet, propose possibilities for addressing the sustainability challenges of the food system (Ahmed et al., 2019). The EAT-Lancet Commission's planetary health diet is a universal reference diet that notes the health and environmental impacts of food. The diet is based on the idea that a diet rich in plant-based food with less animal sourced foods is beneficial to human health and environment. Despite being universal, local adaptation is key in the planetary health diet as diets should reflect culture and geography to be truly sustainable. (EAT-Lancet Commission, 2019) In addition, often local recommendations function better than global ones which is why adaptation is also needed (Hendrie et al., 2022). Currently Finns consume plenty more animal derived food and plenty less plant-based food than suggested in the planetary health diet (Bäck et al., 2022) and hence the diet proposes a great way of making sustainable eating more common.

Expectations for the food systems' actors' sustainability are rising and more actions enabling sustainable eating are needed. Consumer demands on food have increased and sustainability of food is thought of more. As dependent on the consumers, the food industry must answer to these needs. (Beske et al., 2014) Yet often consumers do not completely understand the concept of sustainable diet (Rejman et al., 2019) and thus information is needed. In Finland the grocery chains are large and powerful actors in the food industry, and hence they have

the possibility to educate consumers and promote the consumption of sustainable foods (Miller et al., 2021).

The retailers' possibilities to impact food habits are great, and hence it is important to explore if their actions enable sustainable consumption. As the retailers are concentrated, they are in an increased contact with a large number of diverse customers and can thus impact plenty of consumers (Jones et al., 2011). The grocery retailers can influence consumption habits and purchase decision-making (Jones et al., 2011; Steils, 2021) and their practices and actions could be utilized to change food consumption towards the needed direction of sustainability.

Multiple aspects impact food choices and retailers have the possibility to influence many of those aspects. Food is purchased based on taste, cost, health, and convenience (Miller et al., 2021; Hartikainen et al., 2014). Then, in contrast, perceived lack of availability, inconvenience, price, habit, quality perceptions, lack of trust in labels and insufficient marketing prevent people from purchasing certain foods (Vermeir & Verbeke, 2008; Sharma et al., 2023; Testa et al., 2019). Grocery retailers are in a position to affect these aspects and thus have the power to promote the consumption of sustainable food. In addition, often providing efficient opportunities to sustainable eating can increase the interest on the topic and lead to changed consumption (Tong et al., 2023) and supermarkets can be an ideal setting for interventions that aim to better food purchase decisions (Escaron et al., 2013).

The grocery retailers retain multiple different means for promoting sustainable food purchasing of which usage can be examined. The means include nudging techniques, such as information provision, labeling, product placement, affecting the visibility, social norm setting and personalization; discounts and pricing tools as well as affecting the selection and availability (Steils, 2021; Abrahamse, 2020; Bucher et al., 2016; Just & Gabrielyan, 2016; Trafford & de la Hunty, 2021; Stewart et al., 2022; Miller et al., 2021). As a more sustainable food system and consumption is needed, and grocery retailers have power to influence the consumption, it is reasonable to investigate whether the retailers utilize the power and the means they possess. In addition, as the retailers have many sustainability aims and goals, utilizing the means would also align with the retailers' own ambitions.

4 DATA AND METHODOLOGY

This section presents and discusses the chosen study approach and method as well as the data source. The section begins with a description of the research context of grocery retail in Finland. After this section, the results derived from the data are presented.

4.1 Research context

The food industry is a large employer and environmental impact creator. The food and drink industry is the second largest industry within the EU as it employs 4.8 million people (Reisch et al., 2013). In Finland the food system employs about 340 000 people and food and drink consumption creates around 30% of households' total environmental impact. The food industry is highly fragmented and most of the companies are small and medium-sized enterprises (SMEs). (Reisch et al., 2013; Silvasti et al., 2019)

However, the food retail business is very concentrated and only a few large chains share the market. Often the food retail chains are among the largest companies in their countries. (Reisch et al., 2013) In Finland the daily consumer goods trade employees about 80 000 people (Päivittäistavarakauppa ry, 2023) and in 2022 the value of the food retail trade was 21,636 million euros (Päivittäistavarakauppa ry, 2023). The sales are concentrated mostly to S Group and K Group and the third largest is Lidl. The market share for S Group is 47%, for K Group 35.2% and for Lidl 9.8%. (Päivittäistavarakauppa ry, 2023) Both S Group and K Group have over 1000 stores and Lidl 200 in Finland. The sales are concentrated in large stores as stores larger than 1000 square meters have a market share of around 70%. (Päivittäistavarakauppa ry, 2023) In addition, the trade states sustainability to be a core value and enabler for competition and growth (Päivittäistavarakauppa ry, 2023).

S Group includes 19 regional cooperatives and SOK Corporation, and their subsidiaries. The cooperatives cover whole Finland, and the regional aspect is emphasized in the operations of the cooperatives. The co-op members own the cooperatives, which in turn own SOK Corporation. In 2022, S Group's retail sales were about EUR 13.5 billion. S Group was the largest private sector employer in Finland with its 40,000 employees. (S Group, 2023) S Group operates in the grocery trade, the department store and specialty store trade, service station store and fuel sales, the travel and hospitality business, the hardware trade and in the banking sector. Also, some cooperatives have car dealerships and agricultural outlets in their regions. (S Group, nd)

Kesko and K-retailers form the K Group which is the largest trading sector operator in Finland and one of the largest in Northern Europe. In 2022 K Group's retail sales were about EUR 16 billion. Together Kesko and K-retailers employ

around 39,000 people, and K Group employs some 45,000 people in total. Kesko works in the grocery trade, building and technical trade, and car trade. K group's grocery markets are led by independent K-retailers. (Kesko, 2023)

Lidl Finland is a part of the Lidl group which is a part of the Schwartz Group. Lidl is one of the largest grocery store chains in Germany and Europe. Lidl Finland employs nearly 5,800 people, and in total the Lidl group employs 376,000 people around the world. The framework for Lidl's operational processes is set in the headquarters in Germany in collaboration with the national subsidiaries. In 2022 Lidl Finland's retail sales were EUR 1969 million. The Schwartz Group operates in grocery retail, production, and recycling and administration. Lidl stores offer plenty of private label products and currently 74% of Lidl Finland's product range is their own-brand products. (Lidl Finland, 2023) Lidl is characterized by having specific theme weeks of different products and food cultures.

4.2 Qualitative research

Qualitative research is a scientific research approach which aims to understand the quality, characteristics, and meanings of the studied subject. Unlike the quantitative research approach which deals with measurable quantities and statistics, qualitative research aims for a deeper and comprehensive understanding and explanations. The differences between the approaches are often emphasized, yet it is possible to utilize either of the approaches for the same data. (Alasuutari, 2012) Research process combines the chosen method with scientific reasoning which usually follows either deductive, inductive, or abductive approach (Mantere & Ketokivi, 2013).

In inductive reasoning conclusions are drawn based on generalizations from observations. Inductive reasoning allows us to create new theories. (Mantere & Ketokivi, 2013) In inductive reasoning, a theoretical framework is created from the material. Examining the material allows to form a theory that does not depend on previous research. (Tuomi & Sarajärvi, 2018)

Abductive reasoning combines inductive reasoning into theory. In abductive reasoning the theoretical framework functions as a tool for analysis. Yet the analysis is not completely based on theory but its connections to it are observable. In abductive reasoning, explanations to interpretations from the data are sought from theory. (Tuomi & Sarajärvi, 2018) Abductive reasoning allows the creation of explanations to incomplete data (Mantere & Ketokivi, 2013).

Deductive reasoning tests if a scientific hypothesis applies to a certain data. Or in other words deductive approach tests an existing theory, usually in a new context. (Mantere & Ketokivi, 2013) Deductive reasoning is a traditional analysis method in which material is studied based on previous theory. Relevant concepts are defined based on previous research and the data is analyzed based on a theory enabled by previous research. In deductive reasoning the study's

theoretical framework can include, for example, categories in which the data is compared to. (Tuomi & Sarajärvi, 2018)

This thesis follows deductive reasoning. As the data is analyzed based on the theory on sustainable food and grocery retailers promoting sustainable food, presented in sections two and three, the theory enables creating categories to which the data findings are compared to.

4.3 Content analysis

This thesis utilizes content analysis as a research method. Content analysis is a qualitative research method which allows theory-driven analysis of a specific data. Often content analysis can be described as a systematic and objective analysis of message characteristics or as a message-centric methodology. Content analysis does not provide finished analyses from the data but functions as a method for analyzing and discussing themes present in the data. Content analysis can also be criticized due to it being an only method for analysis. (Tuomi & Sarajärvi, 2018; Neuendorf, 2016)

Content analysis seeks and combines relevant themes from the data. When utilizing content analysis, it is important to specify the researched subject clearly. Content analysis allows both systematic and objective analysis and it can be used for analyzing, for instance, books, articles, letters, reports or almost any content of communication. Content analysis aims to provide a verbal summary of the studied matter. It is used to extract wanted information from a certain material by identifying specified characteristics of the material. The desired information answers to the research questions. (Tuomi & Sarajärvi, 2018; Neuendorf, 2016)

According to Tuomi and Sarajärvi (2018) qualitative content analysis follows six steps:

1. Choosing the studied topic and forming research questions,
- 2a. Studying the data and marking relevant parts,
- 2b. Excluding excess material from the data,
- 2c. Gathering the relevant parts from the data,
3. Classifying, theming, or typifying the data,
4. Summarizing the results.

Firstly, the research topic is selected from the research material as the research questions and results obtained from the material must align. Secondly, the data material is studied and reviewed. During reviewing, the unnecessary parts of the data are removed, and notes are taken. Third is the actual analysis. In the most simplified form, the data is classified by creating categories and counting the occurrences of each category in the data. The classified data can be presented as tables, for instance. While thematizing, the data is divided according to certain categories to allow the comparison of the occurrences of the categories. And when typifying the data, characteristics occurring thematically are sought

and generalizations of typifying made. In the last step of content analysis, the results are reported as a summary. (Tuomi & Sarajärvi, 2018) In the theory-driven analysis the results are linked to previous research (Elo et al., 2022).

4.4 Research data

The thesis utilizes sustainability reports as the data source. The data consists of the year 2022 sustainability reports from S Group, K Group and Lidl Finland (S Group, 2023; K Group, 2023; Lidl Finland, 2023). S Group publishes a separate sustainability report. K Group's sustainability report is included in the annual report and Lidl's report handles years 2021 and 2022. The reports are published in Finnish and English, for everyone to view on the companies' websites. S Group and K Group publish the reports yearly and Lidl biennial.

The sustainability reports are around 80-140 pages long and present the companies' sustainability strategies, goals, and achievements; actions towards the environment and people; and the key figures on the topic of sustainability. For the thesis the reports are reviewed and only material regarding grocery retail is utilized. Therefore, for instance, information in the reports about actions within hospitality services or service stations is excluded from the analysis.

4.5 Applied research method

First the studied topic was chosen, and research questions formed. The preliminary idea was to study how grocery retailers could help consumers to purchase sustainable foods. However, after viewing previous studies, the focus of the thesis was shifted to studying the means retailers are utilizing to promote sustainable eating and the planetary health diet at the moment, as there seemed to be a research gap. When the precise topic was selected, the research questions were formed to seek answers to how the retailers are promoting the planetary health diet to consumers.

Second, the theory section was written and a theoretical framework for analyzing the data drafted. The theory of the thesis consisted of the means retailers possess to influence food choices towards sustainability. These means were formed into categories on an analysis matrix on Excel. The matrix included the different categories in separate rows and a column for each retailer. The theory-based matrix allows the utilization of deductive reasoning as in that material is studied based on previous theory.

Third, the data source was decided and reviewed. The data, utilized in the thesis, consisted of the retailers' sustainability reports as those seemed to provide wanted information in an easily accessible form. First each report was gazed through, and all reported influencing means or actions were written down onto the previously drafted matrix. All the reports were read through three times to

ensure all relevant parts were noticed. After the data was classified into the matrix, the contents of each category were summed to determine how many times the means and actions were utilized by the retailers.

Fourth, in the reporting phase, the categories and their contents were analyzed and presented. Firstly, the results were presented by comparing the number of different actions between the retailers as well as by focusing on which categories had the most content and which had the least. Secondly, the contents of each category on the Excel matrix were verbally explained to present the data behind the numbers on the matrix. Then, in the discussion section the explained contents were reflected and linked to the previous theory that provided the material for the analysis matrix. The theory allowed to discuss the importance of the different means and actions and compare how the retailers used the different means and what could be done differently. Finally, key conclusions of the results were drawn.

5 RESULTS

The main aim of the study was to investigate what actions grocery retailers, S Group, K Group and Lidl are taking to promote the planetary health diet to Finnish consumers; and how the retailers' actions compare with each other. This section presents the relevant information and results derived from the research data.

5.1 Actions presented in the sustainability reports

Table 2 shows the categories used for analyzing the data and how many actions each retailer reported doing under each category. Some of the actions fall under several categories, for instance in labeling and in discounts and pricing. In total S Group reported the most actions towards promoting the planetary health diet and Lidl the least. All the retailers reported one action under the social norm setting category.

Table 2 reveals that K Group and Lidl reported the most actions in the selection and availability category, and S Group in the information and education category. Overall, the forementioned categories and discounts and pricing as well as personalization and rewarding categories include the most reported actions. S Group reported the highest number in several categories.

TABLE 2. Number of reported actions within categories.

Category	S Group	K Group	Lidl
Nudging	1	0	1
Information and education	5	4	2
Labeling	2	3	2
Placement and Visibility	2	1	1
Campaigns and Advertising	2	2	1
Social norm setting	1	1	1
Personalization and Rewarding	4	4	0
Discounts and Pricing	4	2	2
Selection and Availability	4	5	4
Total	25	22	14

The retailers reported different stances on nudging. S Group stated believing in slight nudging, K Group mentioned nothing about it, and Lidl stated to make sustainable choices on the behalf of the customer (S Group, 2023; K Group, 2023; Lidl Finland, 2023). S Group stated recognizing its role in influencing eating habits, wanting to take an active role in the food system

transition and encouraging customers to make smart choices for their wallets, health, and planet. However, the actual means of the stated slight nudging were not brought up in the sustainability report. (S Group, 2023) On the other hand, for Lidl the already made sustainable choices were based on providing a selection which includes certified risk raw materials, smart packaging, active climate work and healthier products (Lidl Finland, 2023).

All the retailers' reports included some actions on providing information and education. S Group reported to communicate about climate-smart food choices on its own channels. Yet, this communication was not further explained in the report. However, S Group also stated to communicate about fish and vegetable related issues with sound and signage in its stores, which could be seen as a form of climate-smart communication. S Group's own Yhteishyvä magazine is also used for promoting sustainable eating as the magazine is committed to increasing the amount of climate friendly recipes and it includes videos and recipes on seasonal vegetables and healthy options. In addition, S Group reported on providing a trip to the store -study module to primary school pupils. The module provides food education about nutrient content and domestic products by utilizing learning outside the classroom concept. (S Group, 2023) Also, Lidl utilized the learning outside of the classroom concept in educating school children about how to shop for a sustainable grocery bag in the Yrityskylä -business village event. In addition, Lidl reported having a video on organic and Fairtrade products. Yet, where the video is placed was not mentioned in the report. (Lidl Finland, 2023)

K Group utilized similar education and information actions and some very different. K group reported having launched a 'still good' concept in 2022 to assist customers to make more sustainable choices and reduce food waste in the stores. Customers were also encouraged to eat half a kilo of vegetables a day via contents on the K-ruoka -app and website as well as materials in the fruit and vegetable sections at the stores. The store materials highlighted how easy it is to increase the consumption of vegetables to meet the nutrition goal. The online contents were tips and recipes that educate consumers to increase the share of vegetables in their diet and reduce food waste. In addition, the K-Ruoka.fi -website includes over 2000 plant-based and vegan recipes which tell consumers about the variety of eating plant-based meals. (K Group, 2023)

The retailers reported quite similar actions on labeling as all the reports included material on discount labels. S Group reported utilizing red labels to discount the price of soon expiring food items to prevent food waste. Also in addition, S Group stated aiming for open communication on origin and sustainability information by 2030 via new markings. (S Group, 2023) Also, K Group utilized red labels on soon expiring products as well as other labels such as organic labels, ecolabels, and labels on social sustainability on its own private label products. In addition, K Group reported having MSC and ASC traceability certificate labels on 85 K-food store fish counters. (K Group, 2023) Similarly, Lidl reported about discount labels to decrease food waste. Lidl's report says that red

labels were added to new products groups and a green 50% discount sticker was added to perishables on the sell-by date. (Lidl Finland, 2023)

S Group and K Group reported similar actions on the placement and visibility of sustainable food products. K Group stated to having vegetable protein products placed on veggie shelves to help consumers find them easily and marking the shelves with green taping and `Vege` text to increase the visibility (K Group, 2023). Also, S Group reported that HOK-Elanto's S-markets have `Vege` markings on the shelves to indicate vegan and vegetarian products. In addition, S Group stated to highlight seasonal vegetables, fruits, and berries in its stores. But how the highlighting is executed was not mentioned in the report. (S Group, 2023) Lidl did not report having veggie markings and its actions on placement and visibility included emphasizing its own vegan and vegetarian product line on theme weeks (Lidl Finland, 2023).

All the retailers reported having marketed sustainable foods. K Group's report revealed that in 2022 marketing and store visuals promoted Finnish products and domestic origin as well as eating more fruits and vegetables (K Group, 2023). Similarly, Lidl stated advertising vegetarian and vegan product on theme weeks (Lidl Finland, 2023). Also, S Group had a campaign called `under a euro fruits and vegetables` which aimed to increase the consumption of those by lowering the price. In addition, S Group reported having taken part in the Vegan Challenge to encourage people to try plant-based food for a month. The report says that S-markets were visible on the Vegan Challenge's social media and recipes and tips were sent to participants via email. (S Group, 2023)

All the retailers reported one similar action under the social norm creation category. None of the retailers reported implementation of social norm setting by the means of providing messages, such as "others bought this" on sustainable products. However, the retailers' reports tell that all utilized waste bread and fruit baskets (K Group, 2023; Lidl Finland, 2023; S Group, 2023) which can create social norms on buying almost stale bread and less-than-perfect fruits and vegetables.

K Group and S Group reported actions about personalization and rewarding and Lidl did not. S Group informed that the group provides different calculators and monitoring features on its S-mobiili app. The app includes domestic content and carbon footprint calculators as well as monitoring possibilities for vegetables and nutrition contents of grocery shopping. (S Group, 2023) K Group reported similar features on its app. The K-ruoka app includes calculators on carbon footprint, domestic content, and climate impacts plus a nutrition monitoring feature. With the app features customers are given the possibility to compare their own purchases to nutrition recommendations and set targets. (K Group, 2023)

The retailers reported pretty similar actions in the discount and pricing category. Lidl reported providing fruit and vegetable discount boxes as well as bakery products which have remained in the store overnight at a discounted price. In addition, Lidl provides soon expiring products with a discount sticker. These actions are aimed at reducing food waste. (Lidl Finland, 2023) Also, K

Group's actions in this category aimed at reducing food waste as the group reported offering food waste bread and food waste fruit and vegetable baskets as well as red labels for reduced prices close to the expiration date (K Group, 2023). Similarly S Group reported offering red label products and produce waste boxes and bags to lower food waste of fruit and bread. These boxes and bags are available at the stores of 11 cooperatives. In addition, S Group started a 'under a euro fruits and vegetables' campaign in January 2023 after noticing how the high prices of fruits and vegetables in 2022 reduced the sales of those. The campaign promoted affordable fruits and vegetables in S Group's Prismas and S-markets. (S Group, 2023)

All the retailers reported several actions under the selection and availability category such as various policies on different raw materials. S Group reported advancing climate-smart food by increasing plant proteins and Finnish fish in its product range. Already S Group provides a large selection of plant-based foods and its aims to increase the share of those. Like all the retailers, also S Group reported several policies on raw materials. The report mentioned actions such as policies that exclude raw materials from areas that are sensitive to deforestation; policies on fish and utilizing certified soy. (S Group, 2023)

For Lidl the category included the most actions as well. Also, Lidl aims to increase the selection of plant-based proteins by, for instance, largening its own vegan and vegetarian product line. Already Lidl's selection includes many certified products, such as Fairtrade and organic products, and the goal is to widen the selection of those. Similarly, Lidl has many policies on the sustainability of its selection. The company has set a deforestation policy in 2021 and has policies on using certain certified raw materials in own-brand products. (Lidl Finland, 2023)

Likewise, K Group reported multiple actions under the selection and availability category. K Group's own private label products include a large selection of 100% plant-based products and the aim is to increase the selection as well as the share of sustainable products. Also, K Group offers plenty of Fairtrade products of which many are under their own private labels. Like the other retailers, K Group reported utilizing multiple policies such as policies preventing negative biodiversity impacts and deforestation as well as providing certified fruits, vegetables, and fish. In addition, K Group's report talks about the development of the Hyvis -product range which utilizes food waste and surplus into food products sold in the K food stores. The range includes a tomato soup made from 40% waste tomatoes, for instance. (K Group, 2023)

5.2 Retailers' sustainability aims

All the retailers stated some sustainability aims and wishes related to sustainable eating in their reports. S Group reported to encourage, lower thresholds, inspire and slightly nudge towards sustainable food choices. In addition, S Group has a goal of 80% domestic foods by 2050 and halving their food waste by 2030. (S

Group, 2023) Also, K Group wants to half food waste by 2030 and reduce 25% from 2019 levels by 2025. K Group also encourages customers to eat half a kilo of vegetables per day and aims to make healthy choices as easy as possible. In addition, K Group focuses on securing the Finnish food chain, decreasing food waste, and advancing circular economy. (K Group, 2023) Similarly, Lidl aims to promote sustainable consumption by making sustainable, informed, and healthy choices easy; and improving the sustainability and health aspects of product range and informing consumers about sustainability and health themes. In addition, Lidl stated to aim at providing the most sustainable shopping bag in Finland. Lidl also aims to prevent supply chains from causing deforestation by the end of 2025. (Lidl Finland, 2023)

Utilizing the concept of planetary health diet was not that common in the reports. Only S Group's report included material on the planetary health diet as it stated to promote the planetary health diet by a set goal of 65% of sold food being plant-based by 2030. The 2022 percentage was 59%. (S Group, 2023) Neither K Group nor Lidl included the planetary health diet in their reports. K Group's report stated that the aim is to enable customer's sustainable choices by driving change along the value chain, however no definition for sustainable diet or the driven changes were given. (K Group, 2023) Slightly leaning towards the planetary health diet, Lidl stated to give its customers the possibility to follow a diet within the planetary boundaries by increasing its selection of plant-based proteins, for example (Lidl Finland, 2023).

5.3 Similarities and differences between the retailers' actions

Table 2 reveals that S Group and K Group reported a fairly similar number of actions and Lidl significantly less. While S Group and K Group reported several actions in many categories, Lidl reported over two activities in just one category. S Group reported at least one action in all categories while K Group and Lidl both had one category without any reported actions. The biggest difference between the number of reported actions was in the personalization and rewarding category where both S Group and K Group reported four actions and Lidl none.

Several similar actions were reported by all three retailers. The most similar actions between the retailers were discount labels to prevent food waste, waste fruit and discount baskets, providing a large selection of plant-based foods and utilizing various policies on raw materials. Thus, the common actions between all retailers regard reducing food waste and providing customers a good selection of sustainable foods. (K Group, 2023; Lidl Finland, 2023; S Group, 2023)

Yet overall, S Group and K Group reported more similar activities in many categories and less was common with Lidl. Which might be due to Lidl reporting less actions in total. S Group and K Group reported similar means on their apps, utilizing online channels in education, using in-store materials to educate about fruits and vegetables, and marking some plant-based foods in stores. Whereas none of these actions were reported by Lidl. (K Group, 2023; Lidl Finland, 2023;

S Group, 2023) As S Group and K Group had more in common, were the biggest differences between the groups and Lidl.

The biggest differences between all three retailers concern mainly nudging. S Group stated believing in nudging and Lidl making sustainable choices for the consumer. Whilst K Group mentioned nothing about nudging nor any similar actions. In addition, S Group was the only retailer that reported participating in a campaign that aims to increase plant-based eating as it took part in the Vegan Challenge. (K Group, 2023; Lidl Finland, 2023; S Group, 2023)

6 DISCUSSION AND CONCLUSIONS

The final part of the thesis consists of five parts. First the results are discussed and reflected to previous research. Then, practical contributions and the limitations of the thesis are presented, and suggestions for future research provided. Lastly, key conclusions are drawn.

6.1 Discussing the key findings

In this Master's Thesis the main objective was to present the current actions taken by grocery retailers towards promoting the planetary health diet to Finnish consumers and allow comparison between the retailers' actions. The perspective of the thesis is retailer perspective, but the focus is on the actions that affect the consumers, and not for instance suppliers.

Based on previous research a quite broad understanding on sustainable food and promoting its consumption within the retail sector can be formed. Previous literature reveals that sustainable food is a large concept that has been hard to define (Reisch et al., 2013; Piracci et al., 2023; Miller et al., 2021) yet the current definition is shared by many (Reisch, 2010). Consumers are motivated to purchase food based on taste and price and sustainability is often considered very little (Miller et al., 2021) even though interest and requests on the sustainability of food are rising (Beske et al., 2014). Grocery retailers are in a unique position between supply and demand and can impact both ways (Bauer et al., 2022). In total, the retailers possess multiple different means for influencing consumption of which some means can be very effective (Reisch et al., 2013; Hanss & Böhm, 2013; Dawson, 2013).

Although affecting the price might be the most effective way of promoting sustainable food purchases to consumers (Miller et al., 2021) K Group, S Group and Lidl did not report major contributions to lowering the price of sustainable food. For a diet to be sustainable it needs to be affordable and accessible (Miller et al., 2021) which is where grocery retailers have power and ability to get involved. Retailers possess many means for influencing the price of food, such as promotions and setting limit margins (Reisch et al., 2013). Yet only S Group reported creating a campaign which aims to lower the price of sustainable food, fruits and vegetables precisely, to ensure that consumers purchase those. The explained reasons behind the S Group's 'under a euro fruits and vegetables' campaign are noticing how the higher price of fruits and vegetables lowered the buying of those. Thus, the act seems to be targeted at promoting healthy and sustainable food.

Even though promotions and discounts can bring benefits to the retailers, utilizing them was deficient. When discounts could attract new customers and drive category sales (Felgate et al., 2012) could one think that utilizing them

would be beneficial to the retailers. Also, as discounts aim to influence purchasing actions and achieve retailers and manufacturers' objectives (Felgate et al., 2012) utilizing discounts would seem sensible in trying to achieve sustainability goals, which all three retailers have set.

Moreover, the retailers have the possibility to utilize even more powerful means for affecting the sales of sustainable food with pricing, yet these means were not reported taken into action. Truly effective means for reducing the sales of unsustainable food could be reducing the offers on them (Jones et al., 2011). For instance, retailers could reduce the sales of meat by not giving discounts on it (Silvasti et al., 2019). As price influences purchasing decisions a lot (Reisch et al., 2013) new types of discount policies could result in effectively achieving the retailers' sustainability aims. The lack of truly sustainable discount policies leaves room for the retailers to broaden and improve their influencing methods.

In addition, it would be possible for the retailers to combine pricing and rewarding. Rewarding customers with loyalty card points has shown promising effects in boosting sales, in previous literature (Stewart et al., 2022; Trafford & de la Hunty, 2021), but none of the retailers reported doing so. Rewarding customers of sustainable purchases or setting goals for buying certain foods, could also affect the price of sustainable diets. By offering customers monetary rewards for their sustainable and healthy purchases, customer interest and satisfaction could rise. By providing customers with extra benefits, customer loyalty could also be affected positively. When customers see that the retailers reward for sustainable purchases, the stated sustainability aims could also seem more realistic rather than just statements.

Providing a large selection of sustainable food is beneficial but to promote the sales of its other activities are needed. All the retailers reported aiming to increase the already good selection of sustainable products aligning with the planetary health diet which is great as limited selection of something can result in limited consumption (Just & Gabrielyan, 2016; Tong et al., 2023). However just providing sustainable products is not enough to actually promote the consumption of those as encouraging is also required (Abrahamse, 2020). A large selection of products aligning with the planetary health diet will not necessarily lead to consumers favoring those products, at least, if the more unsustainable products are better advertised, marketed, and highlighted with promotions, for instance. Of course, increasing the selection of sustainable products sounds reasonable and smart, but more action is needed for the larger selection to have bigger impacts on the purchasing behavior and food choices.

The retailers' own product lines could be utilized in the larger selection leading to more sustainable purchases. Largening the retailers' own product lines on plant-based products provides great chances for promoting sustainable food. As own product lines deliver value for money promises and give the retailers more power over the products (Dawson, 2013). Both K Group and Lidl reported aiming to increase the number of plant-based products in their own product lines, which indicates that the retailers are interested in providing more sustainable products. On the other hand, the plant-based products in own product lines are

also a way to provide customers with what they are asking for but with an even better profit margin. Thus, the products benefit both the retailers and customers, but the producers of brand products might not view it as a positive only.

As literature suggests that consumers view nudging in a positive light and think that it could help them alter their food consumption (Vandenbroele et al., 2020), it could be thought that the grocery retailers would want to utilize nudging more. As by nudging, the retailers could promote sustainable and healthy food (Thorndike, 2020) to consumers that are already asking for it (Validi et al., 2014). In the food environment nudges can be utilized to steer consumers towards favorable options or away from least favorable options (Trafford & de la Hunty, 2021) and therefore nudges could provide solutions to the sustainability goals set by the retailers. Yet only S Group mentioned nudging it in its sustainability report as it stated to believe in nudging. However, the actual means of nudging were not explained further. Thus, it is hard to consider whether the stated nudging actions belong to the actions usually considered in literature or whether they are continuous, for instance. Then, even though Lidl did not mention the concept of nudging, it stated having already made sustainable choices for the customers. Lidl's action could be viewed as a form of choice editing as in it unsustainable options are removed from the selection by utilizing different sustainability policies on products, for instance (Jones et al., 2011).

Often the effectiveness of nudging is debated in literature which could explain why it is not a common activity among retailers. Still, as nudging can be useful and harmful for the retailers (Katare et al., 2023), one could think that simply trying it would not cause major harm. In addition, as the most effective nudges might be the simplest (Kalnikaitė et al., 2013) utilizing nudging could consist of small actions. Lidl's already made choices include, for instance, smart packaging and certified materials, which tells that actions utilized as nudges are also parts of the companies' sustainability goals and aims.

All three retailers reported a fairly high number of actions within the information and education category which seems reasonable as knowledge about sustainable food is essential to purchasing decisions (Tong et al., 2023). Retailers can create knowledge by fact sheets, in-store screens and displays (Steils, 2021) which is what S Group and K Group reported doing. The in-store materials could function very efficiently as those could modify impulsive purchasing decisions (Yener et al., 2023). Both K Group and S Group also utilized recipes to increase the consumption of vegetables and plant-based meals which Vandenbroele et al. (2020) conclude as a great method of reducing the perceived barriers to altering one's diet towards sustainable.

Both S Group and Lidl utilized the learning outside of the classroom concept that could be efficient as it utilizes engaging communication (Piligrimienė et al., 2020). By engaging schoolchildren to think about food and its origin and properties, the retailers can provide much needed information about sustainable food and eating which could lead to sustainable consumption in the future (Rejman et al., 2019; Testa et al., 2019). Also, as children's opinions guide parents' food purchases plenty (Hornibrook et al., 2015) could the children's

increased interest in sustainable food lead to families buying more foods that align with the planetary health diet. Thus, educating children provides the retailers a great possibility to increase the sales of sustainable food.

All of the retailers' actions towards providing information seemed fairly subtle. Trying to convince people about the advantages of sustainable eating might be risky as if people feel something is forced on them, they might oppose it (Matschoss, 2022). Thus, S Group and K Group's signages in stores seem like an accurate way of providing information. Clear and subtle posters about how to increase one's vegetable intake probably provide accurate information in a rather simple form (Miller et al., 2021) and do not cause angry reactions. Yet only adding more fruits to one's diet and keeping the meat consumption high will likely not create a sustainable diet. Hence, the information the retailers are providing would need to lead to plant-based foods replacing animal derived foods in consumers' diets to create truly sustainable eating habits.

None of the retailers reported taking full advantage of sustainability labels. As different labels, such as stamps of approval, traffic light-like labels and carbon footprints, often result in consumption changes (Piracci et al., 2023; Vandebroele et al., 2020; Muller et al., 2019) could utilizing those be an effective way of increasing the consumption of plant-based foods, for instance. Out of the retailers only K Group reported utilizing different sustainability labels such as organic- and ecolabels in its own brand product. However, the literature on labels, presented in the theory section, provides much more innovative and perhaps efficient labeling methods.

The retailers used labels mostly for minimizing food waste. All three retailers' reports included material on discount labels that aim to prevent food waste. Even though the discount labels aim to improve sustainability by reducing food waste, are the specific labels perhaps more related to influencing food choices by giving discounts as the labels have an effect on the price. Rather than the discount labels marking a sustainable product they indicate a lower price. In addition, even though the discount labels prevent food waste, they might also lead to, for instance, increased meat consumption if the price of meat is reduced with the label.

Grocery retailers can nudge multiple ways with product placement by utilizing prime locations near cashiers, multiple locations, or eye level placement, for instance. By placing products that align with the planetary health diet on these prime spots, the diet could be promoted. (Trafford & de la Hunty, 2021) Yet the retailers' reports talked very little about utilizing product placement to push different sustainability goals, such as boosting the sales of plant-based foods, for example. S Group stated to highlight seasonal vegetables, fruits, and berries in its stores and Lidl its own vegan and vegetarian product line on theme weeks, yet it is hard to tell how the emphasizing is done as no greater information was provided in the reports.

Although product placement matters greatly and prime locations can be used to promote wanted products (Wongprawmas et al., 2023; Trafford & de la Hunty, 2021), the retailers' main actions for promoting the planetary health diet

via placement included marking the veggie shelves, only. Both K Group and S Group reported marking the plant-protein product shelves. As increasing the visibility of plant-protein products can boost the sales (Bauer et al., 2022) the separate shelves could be a great way of influencing purchase decisions. Yet, based on previous literature, the placement of vegan and vegetarian products on their own clear shelves can provide both advantages and disadvantages. Vandebroele et al. (2020) state that placing plant-proteins in a specified shelf can cause meat-eaters to skip the shelf as they feel that the products are not meant for them. Thus, placing plant-proteins next to the “mimicked” meat could result in the plant-proteins seeming more familiar. Yet, for non-meat eaters this sort of placement could be repellent. (Vandebroele et al., 2020) Still the separate shelf can make finding the products easier and result in better perceived convenience (Just & Gabrielyan, 2016). But, as often people choose products within product categories and not between product categories (Hartikainen et al., 2014) could a mixed placement of, for example, vegan minced meat and beef minced meat result in more people considering buying the plant-based alternative. Thus, the separate shelf both S Group and K Group provide can have mixed results in boosting the sales of plant proteins.

The retailers reported marketing actions that could promote the planetary health diet, but reports leave room for questions. Consumers choose from what is offered but often retailers encourage certain purchases with marketing (Dawson, 2013). Hence, it is great that all three retailers reported advertising products that can promote the planetary health diet. Activities K Group did for marketing eating more fruits and vegetables, Lidl did for advertising vegetarian and vegan products on theme weeks, and S Group did for creating a campaign that promotes affordable fruits and vegetables, can withdraw consumers from their usual purchases into trying something new or result in increased consumption of the marketed products (Vermeir & Verbeke, 2006). Still, as how these activities were performed was not fully explained in the reports, at least for all retailers, it is hard to consider if the marketing was successful in promoting the planetary health diet.

The effectiveness and quality of the retailers’ campaigns and marketing is quite impossible to assess based on the sustainability reports. Previous literature suggests that campaigns that inform how individuals can encourage others to take part in sustainable development are effective in boosting the purchases of sustainable products (Hanss et al., 2016; Hanss & Böhm, 2013). Yet, for example, whether a campaign, by K Group, that highlights how an individual can increase their consumption of fruits and vegetables also mentions how the action contributes to sustainable development and consumption on a larger scale, remains unknown. Also, based on the reports it is impossible to tell if the campaigns focus on promoting sustainable choices or healthy choices. Boosting the sales of vegetables and vegan products by advertising them as healthy could be more effective as often health consciousness is a key driver of sustainable food purchases (Testa et al., 2019).

Only S Group reported a campaign aimed at boosting the consumption of plant-based foods, with a bit more detail. S Group reported taking part in the Vegan Challenge which encourages people to eat a vegan diet during January. Taking part in the challenge could utilize celebrities to create excitement about the topic (Clark et al., 2020) as S-markets were visible on the challenge's social media and videos were filmed in the stores. Often the challenge includes celebrities and influencers, and, for instance, the videos filmed in grocery stores might be hosted by a celeb. Nevertheless, as customers needed to sign up for the Vegan Challenge, the campaign might not have been very visible to those customers who did not register.

Also, Lidl reported utilizing campaigns on vegetarian and vegan food, but the details were left unsaid and possible improvements to the effectiveness of the campaigns could be made. The vegan and vegetarian theme weeks were mentioned to highlight the selection of plant-based foods and increase the visibility and availability of those. Lidl is characterized by providing products outside the normal range on specific weeks and these special weeks provide customers with a larger selection of specific foods. Perhaps with the campaign weeks customers are encouraged to try new products (Reisch et al., 2013) but to further improve the effectiveness of these campaigns, also price reductions could be utilized as those would affect purchasing decisions even more. In addition, as the report did not reveal how many vegetarian campaign weeks there are in a year and if other theme weeks promote meat consumption, for example, might the effect of the specific theme weeks be fairly small.

Overall, the retailers' marketing and campaign activities did not include anything too innovative to promote the planetary health diet. For example, food sampling has been found effective in literature as it has a positive effect on perceptions of food, consumer trials and food sales (Vandenbroele et al., 2020). In spite of that, none of the retailers reported providing food sampling to promote the planetary health diet nor mentioned it at all. Still one can observe food sampling in grocery stores, and it would be interesting to know if the sampling is ever guided by sustainability aims as sampling sustainable products could increase the sales and help achieving sustainability goals set by the retailers.

Nudging with social norm creation and setting provides many possibilities which were not largely utilized by the retailers. Seeing what others have bought can lead to consumers imitating each other's consumption habits (Testa et al., 2019) and therefore providing information on consumers' favorites and best-sellers could be utilized to promote the planetary health diet. For the retailers, it would be easy to mark sustainable products with messages such as "x number of customers prefer this product" and consequently increase the sale of the items (Trafford & de la Hunty, 2021). In addition, according to Sigurdsson et al. (2020) consumers' trust in retailers can result in consumers choosing "store's choice" products also. Thus, the retailers could also simply mark products that promote sustainable eating with "store's choice" signs and so boost the sales of sustainable items as well. Based on the reports these sorts of fairly easy activities were not utilized, however. The social norm creation also provides manufacturers a great

way of boosting the sales of their products, as manufacturers could pay the retailers for their products to be marked with a “store’s choice” label, for example.

All the retailers did report making use of the waste bread and fruit baskets which could create social norms on accepting less-than-perfect fruit and vegetable appearance as well as day-old bread (Reisch, 2021). As minimizing waste is a part of sustainable food (Reisch, 2010) could avoiding food waste be seen as a feature of sustainable diets. With the boxes the retailers can create social norms on avoiding food waste. However, even though the boxes are about creating less food waste, they are also about minimizing the retailers’ financial loss. In addition, the boxes do offer cheaper prices to the customers as well. Then, which motivates more, the noble idea of not wasting food or financial aspects, remains unknown. Yet as the boxes likely propose more positives, the main idea and motivation behind them might not be that central.

S Group and K Group reported taking advantage of personalization to create knowledge on the sustainability of food purchases. Different calculators can be utilized to provide effective information on how everyday consumption affects ecological footprints as the calculators include a feedback component (Hanss & Böhm, 2013). With the calculators on, for example, carbon footprint and nutrition content, S Group and K Group are able to provide customers clear and easily understandable information about the sustainability of food which customers are requesting (Validi et al., 2014; Hanss & Böhm, 2013). When simple and descriptive enough, the calculators can help consumers to understand the sustainability aspects of food better. However, the calculators do raise some questions as well. The accuracy of the calculations is important to consider as the figures are only estimates. In addition, even though the retailers are providing the calculators, will the responsibility of making sustainable foods fall on the consumer if only data about their purchases is provided without explanations and tips on how to make different and more sustainable choices.

Lastly, questions and critique about the retailers’ statements on promoting sustainable eating can be proposed. Only S Group’s report included material on the planetary health diet as S Group stated to pursue promoting the planetary health diet by increasing the percentage of plant-based food sold to 65% by 2030. However, the 2022 level was 59% and thus the ambition of the six percentage point increase in almost 10 years could be questioned. In addition, more critique can be presented to the percentage increase being the only mentioned means for promoting the planetary health diet. To actually push the planetary health diet, for instance, marketing and pricing actions are likely needed, and therefore other means should be mentioned in the sustainability report too. Now, one can only guess whether the planetary health diet is actually promoted efficiently or not. Additionally, Lidl and K Group had other statements about sustainable eating, but the lack of definitions might cause challenges. Lidl stated giving its customers the possibility to follow a diet within the planetary boundaries by increasing the selection of plant-based proteins, for instance. However, Lidl did not outline a diet that aligns with the planetary boundaries precisely. K Group stated to enable customers to make sustainable choices by pushing change along the value chain.

Yet the sustainable choices were not explained. Neither Lidl nor K Group providing a clear term or definition of sustainable diet or a diet aligning with planetary boundaries can propose some challenges. As consumers often have difficulties in defining sustainable food and understanding the concept, clear information is needed to emphasize how sustainable food might not be more expensive, for example (Miller et al., 2021; Piracci et al., 2023). Making informed decisions on sustainable food should be based on clear boundaries of what is sustainable food (Piracci et al., 2023). Thus, not defining the promoted diets can result in the diets not actually being sustainable or consumers not understanding what to purchase and why.

6.2 Practical contributions

Based on the results multiple new means can be proposed to the grocery retailers to promote the planetary health diet and sustainable eating even more. Means regarding pricing, advertising and campaigns, labeling and product placement offer the retailers plenty more possibilities to utilize. In general, the retailers could utilize nudging more to take responsibility of sustainable choices and achieve their own sustainability goals.

Innovative, more progressive pricing means provide great possibilities for advancing sustainable eating more efficiently. Not giving discounts on unsustainable products could be utilized to reduce the sales of meat, for example. Mainly, price reductions should focus mostly on sustainable items. Utilizing loyalty card programs to boost the sales of sustainable food could be implemented by rewarding from certain sustainable purchases. The retailers' apps could be utilized in the rewarding as customers could follow their purchases and see how much more sustainable items, they need to purchase in order to gain monetary rewards.

Advertising and campaigns should focus on promoting sustainable eating too. Store visuals should be focused on vegetarian options, for instance, and on what to eat instead of animal derived foods. Campaigns should also focus on explaining a sustainable diet and what it consists of. Offering consumers information about the aspects of sustainable eating is vital for them to choose suitable foods. Advertising the more unsustainable foods should be stopped or limited and focus shifted to plant-based alternatives. It would be important to increase the number of campaigns advertising plant-based foods and decrease the number of animal derived food as a few vegetarian theme weeks, for instance, do not propose a strong base for making sustainable food choices if ten other theme weeks are focused on meat, for example. With altered marketing and focus, the visibility and interest in sustainable eating could be improved. In addition, food sampling should advance the sales of sustainable food. Highlighting sustainable foods with marketing and campaigns brings the retailers' sustainability aims into practice.

Also, sustainability labels and product placement provide the retailers with new means for advancing the sustainability of food purchases. By indicating sustainable choices with “store’s choice” signs the consumers’ interest in the indicated products could be increased and hence the sales of the sustainable items boosted. Adding different sustainability labels to the stores offers the retailers a chance to indicate the products that align with the planetary health diet and advance the sales of those. Lastly, product placement should be changed to support sustainable and healthy choices. By replacing candies at the check-out registers the health of consumers would be better considered, for example.

The new means would work well in sharing responsibility as well as in ensuring that sustainability is advanced effectively. With the new means the responsibility of making sustainable food choices at the grocery store would be better divided between the customers and the retailers. Changing diets towards sustainable is hard and cooperation is needed. Thus, as central operators in the food industry, retailers need to take responsibility and acknowledge their power and ability. Also, the new means could better show that the sustainability aims are advanced with actions as well. To truly promote sustainable eating the most effective means are required.

6.3 Limitations of the study

The main limitations of the study regard using the reports as a data source. As the data consisted of the retailers’ sustainability reports, it is possible, and likely, that not all actions aimed at promoting sustainable food are included in the results of the thesis. The reports only include actions the retailers figured were worth mentioning of and, for instance, some actions that might be very visible to consumers in the stores might not be reported in the sustainability reports and are thus not included in the thesis. For instance, Lidl did not report indicating plant-based foods with texts in the stores but at least some Lidl stores do have “Vege” markings on plant protein shelves. Yet it could be that the “Vege” markings were not reported if they were added after 2022, for instance. As the reports report the year 2022, and additionally 2021 for Lidl, the situation in 2024 might differ already as sustainability has been a rising theme. Hence, the thesis does not reveal the precise state of promoting the planetary but rather indicates the situation roughly.

The lack of detail is also an inefficiency in the reports. For instance, some action might be reported but as it is not further explained, the comparison of the retailers’ actions is difficult in some parts as the details are unknown. As S Group stated to believe in nudging, it could be thought that it also utilizes nudging but as the actions of nudging were not specified is analyzing them hard. Generally, the sustainability reports highlight what the retailers want and regard as relevant that year, in wanted detail, and consequently plenty of sustainability actions might be left out from the reports and from this thesis.

Furthermore, the reports do not reveal reasons behind certain actions nor the effectiveness of the actions. For example, some of the actions might not aim at promoting the planetary health diet nor sustainable eating but could be due to competitive reasons only, for instance. As the thesis does not ask for consumers' opinions nor utilizes purchasing data, it is impossible to tell whether the retailers' actions, on providing different sustainability calculators for example, have any effect on how sustainable consumers' food purchases are. The thesis only presents the actions reported and compares them to influencing methods retailers possess, presented in the theory section. Thus, the thesis leaves the evaluation of effectiveness to future research.

6.4 Suggestions for future research

Future research could utilize different data sources or investigate the effects of the actions taken. Different data sources, as for instance observations, could provide new results on the same topic as observations would reveal what is actually happening within the grocery stores. In addition, interviewing the employees of the grocery stores could also reveal how different sustainability aims and practices are utilized in the stores and are those communicated and reasoned to the personnel. Likewise, interviewing the retailers' management could reveal how the retailers see their sustainability actions and if they recognize the need for improvement. In addition, studying how new means could be taken into action could be quite beneficial. Also, future research could aim to find out how effective the means, the retailers report using, are. This could be done by interviewing consumers or utilizing purchase data, gained from the retailers. Finding out the effectiveness would likely require working in cooperation with a retailer.

In addition, a similar topic could be studied as a sequel study. A follow-up study of the retailers' actions could provide great information on how sustainability matters are taken into consideration in the grocery retail business as the years go by. Additionally, a similar study idea could be studying how the situation has already changed by utilizing older sustainability reports as a data source.

6.5 Conclusions

To conclude, all the retailers reported actions aimed at promoting sustainable diets, but the number of actions varies between the retailers. S Group and K Group reported promoting sustainable eating to consumers more than Lidl did. Generally, S Group and K Group had more in common, and the biggest differences were between the groups and Lidl. Yet all three did report similar

types of actions as well but S Group and K Group stand out with a larger number of reported actions.

Even though pricing is a truly effective way of promoting the sales of certain items, only S Group utilized price reductions to increase the sales of plant-based foods. S Group's campaign increased the sales of fruits and vegetables after noticing how the previous higher price of those affected the sales negatively. Yet pricing could be utilized a lot more as with pricing the retailers could achieve their own sustainability goals or effectively reduce the sales of the most unsustainable foods.

One major difference between the retailers, besides S Group and K Group marking the veggie shelf, was that S Group and K Group also utilized their apps in promoting sustainable eating and Lidl did not. Both S Group and K Group reported providing different sustainability calculators on their apps. The calculators enable customers to see the carbon footprint of their purchases, for example. Considering that Lidl provides its member card feature only on its app, it could be assumed that the app is important as customers are encouraged to use it, and perhaps that the app would be advanced in some respects. Yet the app is not utilized to promote sustainability at all. When Lidl states wanting to provide the most sustainable shopping bag in Finland, would additional sustainability features in the app also be a great part of this aim.

As a final point, all the retailers promoted sustainable food in some ways, but plenty more could be done. Now, perhaps a slight difference between the statements about sustainability and actual actions can be observed. Viewing the previous literature tells that currently the retailers are utilizing a fraction of the possible means they possess and perhaps the utilized means are not the most effective ones either. Yet it is positive that all retailers reported at least some action within all influencing categories. However, as S Group stated to promote the planetary health diet, one could expect a lot of actions, yet comparing the results to previous literature reveals that from all possible influencing means fairly little means were utilized or reported. Yet it is important to note that S Group stands out from K Group and Lidl by being the only retailer that reported lowering the price of certain sustainable foods. Then as K Group and Lidl did not report promoting the planetary health diet, could the lack of utilizing different means be forgiven. However, both K Group and Lidl do have sustainability goals related to increasing the share of plant-based eating and thus actions are needed as much as they are needed from S Group as well.

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