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THE SIGNIFICANCE OF SOCIAL INFLUENCE FOR THE SUSTAINABILITY OF CONSUMERS' FOOD CHOICES

UNDERSTANDING THE IMPACTS OF SOCIAL IMAGES OF CONSUMPTION STEREOTYPES AND PERCEIVED SOCIAL NORMS

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ACADEMIC DISSERTATION

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ABSTRACT

Social influence is known to significantly impact human behaviour. The complexity of food choice and sustainability combined create a challenging environment for consumers as decision makers and for researchers of the field. The role of social influence may be especially pronounced in the sustainable choice domain where personal and collective interests collide.

This doctoral dissertation intends to develop and deepen the understanding of how different facets of social influence, namely social images of consumption stereotypes and perceived social norms, could be used as tools to advance the sustainability of consumer food choice. The key questions to be examined consist of: 1) what kinds of consumption stereotypes tend to be associated with diverse more sustainable and less sustainable diet choices, and how may these stereotypical inferences promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves, 2) what is the relative importance of perceived social norms compared to other motives in driving sustainable food choice, and 3) how do various sustainability-related injunctive social norms affect food choice when they are activated individually and in combination.

The dissertation consists of three articles, one published and two manuscripts, and an introductory section. The theoretical background of the study is based on impression management, the focus theory of normative conduct, and the model of social norm activation. The study consists of two collected data sets: 22 interviews and quantitative survey data (N=1289) collected from 19 workplace restaurants, of which the control group (N=348) was used as a separate data set in one article. The data were analysed using thematic analysis, binary logistic regression, hierarchical ANOVA, and qualitative comparative analysis (QCA).

The findings indicate that recognised stereotypical inferences have a tendency to encourage more sustainable food choices amongst women but less sustainable food choices for men. Seven characteristics that relate to diet choice types were identified: 'competence', 'appreciation of food', 'environmental awareness', 'health awareness', 'principledness', 'flexibility', and 'attitude towards effort'. Each of the characteristics had two either socially appealing or unappealing opposing traits. Generally, the stereotypical traits tend to support sustainable food choices, with some exceptions. As the social images of different food choices are created out of a combination of several characteristics, different characteristics may be pronounced depending on the situation.

When examining the relative importance of social norms in comparison to other food choice motives, the distinction was made between descriptive and injunctive norms. The findings designate the impact of descriptive social norms as a significant motive for sustainable food choices, both the actual

choice and the intention for future choices. Injunctive norms were found as non-significant motives. In addition to the descriptive norm, motives such as habit, visual appeal, value for money, and whether the dish (in this case, roach fish patties) was able to satiate hunger were also positively related to the actual choice. Strong motives for intended choice were taste, habit, visual appeal and perceiving the food as healthy.

As for the activation of norms, injunctive norm messages resulted in being a generally ineffective instrument to positively impact on sustainable food choice. However, they may affect specific subgroups within a larger population as individuals differ in their sensitivity to social norms. Moreover, the joint activation of multiple norms may act as a mutually reinforcing interaction.

Investigating social influence within the complex field of sustainable food choice offers a wide array of possibilities of developing consumer choices towards sustainability. Understanding how consumers perceive diet choices helps to identify certain leverage points in the domain of social image and target interventions, such as breaking down stereotypical imagery that may prevent consumers from adopting more sustainable diets and bringing forward socially appealing social images which favour sustainability. Measures facilitating the implementation of sustainable diets in social situations can reduce manifestations of socially unappealing traits, in addition to improvement of the organoleptic and visual characteristics of sustainable foods, which are the most important motives for food choice. Moreover, the results suggest that social norms can be used as factors in guiding food choices towards greater sustainability. This can be achieved through designing choice situations in ways that support sustainable choices by focusing on targeted audience, contextual and environmental factors as well as familiarisation on existing social norms.

This dissertation further expands the current understanding of the impact of social influences in the field of sustainable eating behaviour concerning social images of food consumption stereotypes, social norms as food choice motives, and joint activation of multiple social norms.

Keywords: social influence, sustainable food choice, sustainability, impression management, consumption stereotypes, social image, social norms, descriptive norms, injunctive norms, norm activation

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When I started my PhD studies, I was very much looking forward to it as a journey. In my master's thesis, I had already entered world of social psychology when I investigated consumers' involvement with organic food and was eager to learn more. If a master's thesis led me to the threshold, this dissertation has led me inside, and I am happy to continue exploring these issues which are meaningful to me.

Many people have accompanied me on this journey and I would like to thank them. Most importantly, I want to express my greatest gratitude to my supervisor and co-author, Dr. Leena Lankoski. I am honoured to have received the best supervision on my dissertation one could imagine. Leena has patiently and wisely guided my path all the way and given me a wide range of advice on how to do research. She has always found time to thoroughly comment on my work and suggest corrections, which advanced the research markedly. Leena has also found the right, supporting words of encouragement whenever needed.

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The work of the preliminary examiners of this study, Associate Professor Alice Grønhøj from Aarhus University and Associate Professor Johanna Gummerus from HANKEN School of Economics is gratefully acknowledged. Their reading of the manuscript and their constructive comments, which have improved the final text, are much appreciated. I am also honoured to have Professor Outi Uusitalo from the University of Jyväskylä as my opponent in the public examination of my doctoral dissertation. Moreover, I also want to thank my sister Riikka de Wit for carrying out the language revision of the introductory section and for making useful suggestions on the use of language.

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Helsinki, June 2020

Laura Salmivaara

CONTENTS

LIST OF PUBLICATIONS

This dissertation is based on the following publication and manuscripts, referred to in the text by their Roman numerals:

I Salmivaara, L. and Lankoski, L. (2020). Tell me what you eat and I will tell you what you are: How the social images of food consumption stereotypes may promote or hinder sustainable food choices. (Manuscript)

II Salmivaara, L., Lombardini, C., and Lankoski, L. (2020). The importance of descriptive and injunctive social norms relative to other motives for sustainable food choice. (Manuscript)

III Salmivaara, L. and Lankoski, L. (2019). Promoting sustainable consumer behaviour through the activation of injunctive social norms: A field experiment in 19 workplace restaurants. Organization and Environment, doi:10.1177/1086026619831651

Author's contribution

This dissertation consists of an introductory section and three articles, of which one is published and two are manuscripts.

Introductory section: I am alone responsible for the introductory section.

Article I: I was responsible for the research design, data collection, data analysis, and literature review. Both authors participated in the development of the theoretical framework and in writing the paper. Leena Lankoski provided guidance throughout the work.

Article II: All authors participated in the research design and data collection; however, I had the main responsibility for data collection and was also responsible for data management. The statistical analyses were carried out jointly by myself and Chiara Lombardini. I was also responsible for the literature review except for the sections concerning dual-processes and visceral factors. All authors participated in the development of the theoretical framework and in writing the paper.

Article III: Both authors participated in the research design and data collection; however, I had the main responsibility for data collection and was also responsible for data management (data for articles II and III originate from the same data collection process). I carried out the statistical analyses and Leena Lankoski the QCA analyses. I was responsible for the literature review. Both authors participated in the development of the theoretical framework and in writing the paper.

ABBREVIATIONS

ANOVA	Analysis of variance
e.g.	exempli gratia; as an example
CI	Confidence interval
fsQCA	fuzzy-set Qualitative Comparative Analysis
i.e.	id est; in other words
IQR	Interquartile range
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	The Intergovernmental Panel on Climate Change
NGO	Nongovernmental organisation
OR	Odds ratio
SD	Standard deviation
TEMS	The Eating Motivation Survey
QCA	Qualitative Comparative Analysis

1 INTRODUCTION

Recently the public discussion about the planet's future has become increasingly topical and, at the time of writing this doctoral dissertation, the discussion on global warming and climate change continues on a daily basis. The discussions have covered many aspects of consumption, but from the consumers' point-of-view one of the easiest – and closest to everyday life – is food. Besides their importance to individual consumers, everyday food choices and their impact are linked to the wider issues regarding our climate. The pace of these discussions has gathered momentum as a result of the latest IPCC reports (IPCC, 2018;2019). Incessant population growth has led to expanding farming land and increasing yields. The total production of food has increased by 240% between 1961 and 2017. At the same time, while the occurrence of overweight and obesity have grown, 25-30% of total food produced is lost or wasted and hundreds of millions of people suffer from undernourishment (IPCC, 2019:3-4).

The state of the planet has further increased the urgency to act. Global warming is accelerating the melting of ice sheets and the rising sea level. The consequences are impacting everyone, one way or another. The shared concern for our environment has brought up discussions about sustainable living and consuming in many areas, including food consumption. In addition to climate change, a sustainable food system may consist of various issues concerning environment, such as biodiversity, water and soil quality (European Comission, 2016).

When discussing environmentally friendly behaviour, this often includes a question of responsibility. Consumers and legislators both seem to have important roles to play in this (e.g. Thøgersen, 2005). Nevertheless, although consumers are experiencing increasing pressure and responsibility to react, it is the policies, institutions, and governance which are directing the food system outcomes. While these conditions, such as legislation, are required, social climate among people should be also receptive for influences for the environment-related policy instruments to be effective. Food system drivers, such as social and cultural norms, are combined with enabling conditions, that is, policies, institutions, and governance. (IPCC, 2019.) Awareness and knowledge about sustainable consumption patterns are communicated through social and cultural norms and are of key importance in enabling policy instruments to have an impact on the sustainability of food choice. Indeed, the scientists behind IPCC reports listed economic drivers such as prices, availability, and stability of food supply, but also "traditional, social and cultural norms around eating practices" as barriers to improved food security (IPCC 2019:1-1).

Social norms are one manifestation of the broader concept of social influence. Social influence refers to "how one person or a group affects

another's opinions, attitudes, emotions, or behaviors" (Goldsmith, 2015:3). Human is a social animal and strongly influenced by others' behaviour and the normative surrounding atmosphere (e.g. Aronson, 1972/2008). People may be influenced through various social structures and conform to the behaviour of others inherently even without obvious pressure.

In this study, I aim to deepen the understanding of how social influence can impact food choice in a way that enhances sustainability. More specifically, I intend to shed light on social influence manifestations such as the social images associated with different diet choices, the relative importance of social norms as food choice motives, and the activation of different sustainability-related social norms, and how these social influence manifestations may affect the sustainability of consumer food choice.

The individual's intention to project a positive social image onto others has been identified as one of the motivating factors of eating behaviour (Renner, Sproesser, Strohbach, & Schupp, 2012). Sustainable choices are often linked to identities such as "green consumers" (Bartels & Hoogendam, 2011; Bartels & Onwezen, 2014) and environmental behaviour is positively associated with altruism but negatively with egoism (Schultz & Zelezny, 1998). However, although sustainable actions such as eating vegetarian food may project a positive social image of a person (König, Giese, Stok, & Renner, 2017), they may also invoke unwanted consumption stereotypes, which may motivate avoidance of such behaviour (e.g. Vartanian, 2015; Minson & Monin, 2012). When people make their choices, others as observers may interpret behaviour differently from the actors themselves and thus choices may carry some unintended social images resulting in a contradiction between the actors' intentions and the perception of others. This contradiction raises an interesting question about how stereotyped social imagery can influence the sustainability of consumers' food choices for those who want to present a socially appealing image of themselves. This is one of the questions this study aims to answer.

The concept of social norms is central to social influence. As social influence "relates to the processes whereby people agree or disagree about appropriate behaviour, form, maintain or change social norms and the social conditions that give rise to, and the effect of, such norms" (Turner, 1991:2), a social norm is defined as "a generally accepted way of thinking, feeling or behaving" which also carries an element of "oughtness" (Turner, 1991:3). People may be explicitly requested to behave in a certain manner in order to comply or they may adhere to social norms, even unspoken, to fit in for conformity (e.g. Aarts & Dijksterhuis, 2003). Social norms reflect shared rules, values or standards of a social group (Turner, 1991:3) and belonging to groups and interacting with the other members is vital to human beings (Goldsmith, 2015:7). It is worth noting that not only do individuals potentially identify with several groups, but that their level of identification may vary depending on the individuals, groups and contexts. The commitment to the same group may change even in different situations (Ellemers, Spears & Doosje, 1999) and thus

be dependent on the social context, which may prove to be challenging in terms of norm consistent behaviour.

In terms of the sustainability framework, the impact of social norms has resulted in green acts such as a decrease in energy consumption (e.g. Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008) and increased recycling (Schultz, 1999). In the food context, social norms have an impact on what kind of foods (e.g. Herman, Roth, & Polivy, 2003) and how much food people choose (e.g. Cruwys, Bevelander & Hermans, 2015). Despite the large amount of literature on the impact of social norms on eating (for reviews see e.g. Higgs & Thomas, 2016; Robinson, Thomas, Aveyard, & Higgs, 2014) and on sustainability-related behaviours outside the context of food (for a review see e.g. Farrow, Grolleau, & Ibanez, 2017), little research has been carried out on how social norms impact actual sustainable food choices (Salmivaara & Lankoski, 2019). However, sustainable food choices differ from other food choices. This is also noted by McDonald, Fielding, and Louis (2014:157, referring also to Göckeritz et al., 2010), who suggest that "the effects of norms may be unique in domains such as environmental behavior, in which the personal and collective interest may be at odds." Moreover, the complexity of food choice situations may be more challenging for norms. Compared to other fields of sustainable behaviour (e.g. recycling or energy saving), food choices are strongly characterised as being multi-motive and habitual. In such an environment, social norms have to overcome many obstacles to have an impact on behaviour.

Certain motives, such as sensory appeal/taste, price, convenience, and health often dominate in food choice studies (e.g. Steptoe, Pollard, & Wardle, 1995; Januszewska, Pieniak, & Verbeke, 2011). Nevertheless, motives that impact sustainable food choices differ from other, self-beneficial motives, such as ones related to health. Although sustainability is often aligned with healthiness - which has been the main target of the majority of interventions - when it comes to food choices (e.g. Lorenz & Langen, 2018), the motivation to act stems from a different origin. Instead of the concrete benefits the healthy options may bring to an individual, sustainable acts benefit the whole society, often after a longer delay. Consequently, encouraging consumers towards sustainable consumption is challenging in this context. The traditional concept of a utility maximising consumer may not function in the setting of sustainable eating. Thus, the question of understanding how strong the impact of social norms is compared to other food choice motives is relevant to be able to steer food choices towards sustainability. This study aims to address this gap in the field of research.

Particular social norms can be activated and thus brought to the consumer's attention by situational cues such as message signs (e.g., Mollen, Rimal, Ruiter, & Kok, 2013; Thomas et al., 2017). Sustainability is tied to food choices in many ways, and several sustainability-related social norms may arise in any particular situation. On one hand, the effect of social norms can be mutually reinforcing, where the joint impact is higher than the sum of the

individual impacts of the norms. On the other hand, they can be mutually weakening where the total impact is less than the sum of the impacts. This effect is yet an unexamined research area and constitutes the third research topic of this study: how do multiple sustainable norms operate when activated separately and in conjunction?

In addition to the aim of this dissertation to increase the understanding of the impact of social influence on sustainable food choices, the study also aims to react to the recent call for field experiments testing the effectiveness of strategies to encourage sustainable behaviour (Delmas & Aragon-Correa, 2016).

The study includes two empirical parts: qualitative and quantitative. Two sets of data are used in this study. The first data set 1 is formed of 22 interviews of undergraduate and graduate students of the University of Helsinki. The second data set 2 was collected via a survey in 19 workplace restaurants, also in Helsinki. This data collection was conducted in a real-life field experiment where a new sustainable lunch dish, roach fish patties, was launched for the first time to the customers of the restaurants. A workplace restaurant during lunch time makes an interesting research environment, as it is a place where consumers not only make their decisions under the influence of social norms, but where they are also susceptible to different policies (e.g. Wahlen, Heiskanen, & Aalto, 2011).

The qualitative data set 1 covers Article I and the quantitative data set 2 covers the articles II and III (N=348; 1289). The studies within the articles were conducted using qualitative (thematic analysis in Article I) and quantitative (logistic regression analysis in Article II and hierarchical ANOVA in Article III) methods as well as methods between these two approaches (Qualitative Comparative Analysis in Article III).

The main research question of this study is: How do social influences impact on the sustainability of food choice? The following sub-questions correspond to the three articles:

1. What kinds of consumption stereotypes tend to be associated with various more sustainable and less sustainable diet choices, and how may these stereotypical inferences promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves? (Article I)
2. What is the relative importance of perceived social norms compared to other food choice motives in driving actual and intended sustainable food choice? (Article II)
3. How do different sustainability-related injunctive social norms impact food choice when they are activated individually and in combination? (Article III)

This dissertation includes one published research article and two manuscripts corresponding to the above research questions, and the introductory section.

The articles are attached at the end of the dissertation. The introductory section starts with presenting the overall theoretical background and the main theoretical concepts underpinning this work in the two following chapters. The theoretical framework of the study is depicted at the end of chapter three. In chapter four, the research design, materials and methods are detailed. The findings of the three articles are summarised in chapter five. Finally, in chapter six, the theoretical and practical contributions of the study are further discussed, followed by the limitations and suggestions for further research as well as conclusions of the dissertation.

2 SUSTAINABLE FOOD CHOICE

This chapter focuses on sustainable food choices and defines the area of study where this research belongs. The chapter includes three subchapters. I begin by discussing what is understood with sustainability and sustainable food before proceeding to the review of motivating drivers of food choice in the relevant literature. Then I introduce how these food choice drivers apply in the context of sustainability. This second chapter, together with the third, forms the base for the theoretical framework presented in the end of chapter three.

2.1 FOOD AND SUSTAINABILITY

Sustainability has become an essential feature in several areas of consumption. Sustainable behaviour is often used synonymously with environmentally friendly, eco-friendly, and green behaviour (e.g. Laroche, Bergeron & Barbaro-Forleo, 2001). It is a multidimensional concept including a variety of behaviours such as purchasing and using green products as well as recycling (Goldsmith, 2015:3). The most widely used definition of sustainability is derived from the Brundtland Report (1987:no pagination), according to which sustainability "meets the needs of the present without compromising the ability of future generations to meet their own needs."

While food is related to many environmental and sustainability issues, there is no single description for sustainable food. Goggins and Rau (2015) have described a comprehensive list of 11 sustainability categories in their FOODSCALE method. According to the method, sustainable food includes “protecting biodiversity; promoting animal welfare; avoiding negative environmental impacts; providing safe, healthy food; educating and connecting consumers with the food they eat; reflecting seasonality and culture; being socially inclusive by being available, accessible and affordable to a wide range of people; contributing to resilient local economies and supporting sustainable livelihoods through fair prices, good working conditions and fair trade both at home and overseas” (Goggins & Rau 2015: 258).

According to FAO (2017), food systems as a whole are amongst the most significant fields of human activity in terms of an environmental load. They cover “the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products”. Moreover, they include “all food products that originate from crop and livestock production, forestry, fisheries and aquaculture, as well as the broader economic, societal and natural environments in which these diverse production systems are embedded” (FAO, 2017). Almost 30% of the greenhouse gas emissions are released by the

food systems and 80 – 86% out of these emissions are caused by agricultural production, including its indirect emissions (e.g. Vermeulen, Campbell & Ingram, 2012). Additionally, indirect supply chains of food manufacturing sectors are found to be responsible for over 80% of the total energy footprint in the U.S. (Egilmez, Kucukvar, Tatari, & Bhutta, 2014).

Steering food systems, including processes of production and consumption, towards more sustainable methods is one of the major challenges societies are facing (see e.g. Foley et al., 2011; Tilman & Clark, 2014). The population of the world is growing fast from the current 7,7 billion and is estimated to reach 9,8 billion in 30 years (United Nations, 2017). Population growth and exacerbating climate change significantly aggravate the circumstances of food systems and people's living conditions. Food production should grow to meet the increasing needs on the planet and, at the same time, food should be produced in a more environmentally friendly manner in conditions which are constantly becoming more challenging. With regard to the consumption side, according to a report by Tukker et al. (2005), food and drink form 20-30 % of the environmental impacts of the total consumption in Europe.

Sustainability is a combination of three aspects: economic, ecological (environmental), and social (cultural) (e.g. Goldsmith 2015:121; Vermeir & Verbeke, 2007). The economic component facilitates a fair and affordable price for both sides, production and consumption, while the environmental aspect means caring for the natural and living environments by sustainable use of natural resources and livestock production conditions. The social aspect takes into account an integration of agriculture in the needs of the society and its citizens. It includes support for the whole agricultural chain from the society and from government in the form of sustainability-supporting policies. (Vermeir & Verbeke, 2007.) The role of consumers is substantial as they have the ability to influence not only what goods they consume, but also each other's behaviour. Consumers are both influencing and influenced by norms of social groups, the society and the general trends of consumer behaviour.

2.2 FOOD CHOICE MOTIVATING FACTORS

As food choice plays an important role in many aspects of life, it has been approached from a variety of perspectives. However, there is not a single theory to be found which would be able to fully explain food choices (Sobal & Bisogni, 2009). The model by Furst, Connors, Bisogni, Sobal, and Falk, (1996) is used as a starting point in this study. This widely cited and comprehensive model is depicted in Figure 1. The model outlines the process of food choice which is formed of the components and their interaction with each other. Starting from the top of the figure, *life course* is the "major ingredient" shaping which *influences* are pronounced in a food choice situation, as well as how much social and physical settings impact on the individual's *personal system*.

The personal system includes *value negotiations*, which entail a dynamic weighing of values such as quality, health and monetary considerations, as well as *strategies*, behavioural patterns which have become habitual.

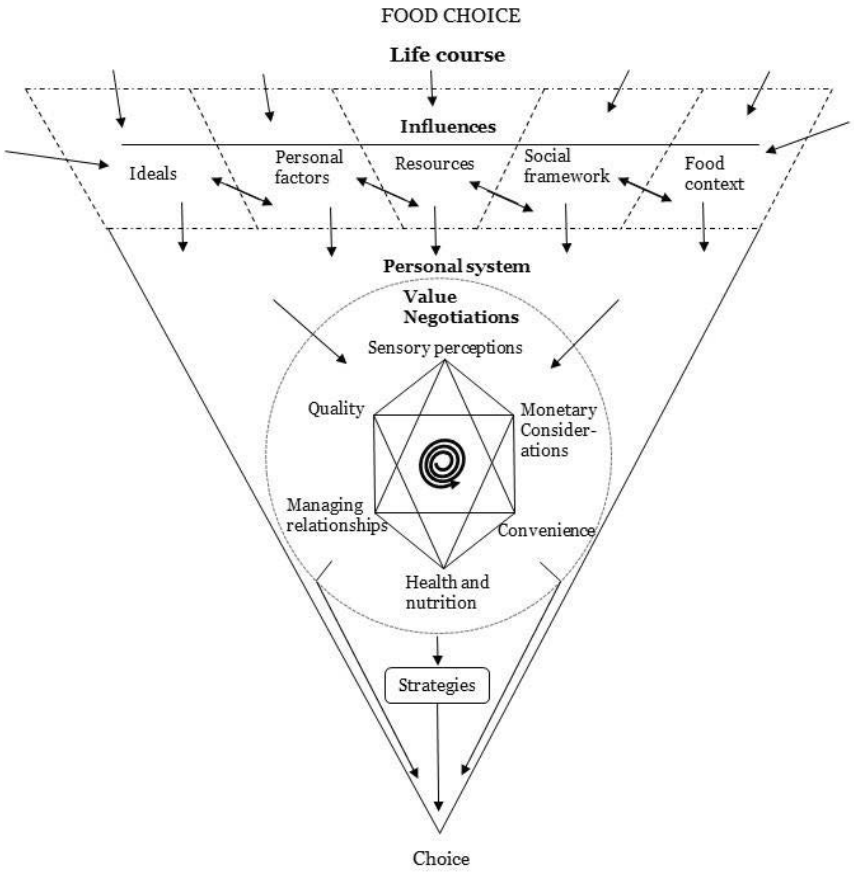

Figure 1 A conceptual model of the components in the food choice process (adapted from Furst et al., 1996).

In the model of Furst et al. (1996) detailed in Figure 1, food choices are steered by life course, "past influences of personal experiences and historical eras, current involvement in trends and transitions and anticipations of future events" (ibid.:252). Under life course, five major categories of influences emerge. These influences interact with each other and cover factors such as ideals, personal factors, resources, social framework, and food context. Ideals are standards and beliefs by which people evaluate their own food choices. They are based on cultural and symbolic factors, such as a proper way to eat or social status. Other categories influencing food choice stem from personal

factors (e.g. psychological and physiological preferences) as well as concrete and abstract resources (e.g. money and skills). One of the roles of social frameworks is shaping the food choice of others. In addition, food choices are influenced by the food context, which includes the physical surroundings and social climate. Social climate is defined as perceptions of a shared social environment where the choices are made, such as the way things are done or how people treat each other (Bennett, 2010). In this study, ideals, social relationships, and food context are especially significant.

When people aim to portray a certain social image of themselves to others, they are influenced by ideals. Social images, which are transmitted by certain food choices and diets, are investigated in Article I. Social relationships and food contexts, in turn, are pronounced in Articles II and III when the impact of social norms is examined. The influence of these norms on individuals' choices may differ depending on relationships between and the presence of others: having a lunch in a workplace restaurant with colleagues is different from having a lunch at home with the family or alone.

Sobal, Bisogni and Jastran (2014) have captured the complexity of food choice by identifying six dimensions that characterise food choice. They define food choice as "multifaceted, contextual, dynamic, multilevel, integrated, and diverse" (ibid.:6). Research of food choice is often conducted using only one perspective or examining a simple choice. Although these studies provide specified information about the object of the examination, it is essential to conduct real-life studies, as individuals belong to different social entities forming congruent and incongruent interconnecting factors impacting food choice (Sobal et al., 2014).

In order to further frame the subject of the study in this broad field, I have investigated food choice from three of these six dimensions identified by Sobal et al. (2014), namely that food choice can be characterised as multilevel, contextual, and integrated. The *multilevel* dimension consists of physical, biological, psychological, and sociocultural levels (Sobal et al., 2014; Sobal, 1991). Food is considered differently from these viewpoints. From a physical level viewpoint (often taken in food science and nutrition) foods are considered as "material objects that are made of atoms and molecules and offer a variety of affordances useful to food consumers". On a biological level, most often in medicine and biosciences, food is considered as nutrients which are ingested to fulfil physiological needs. Viewed from a psychological level "foods are perceived and offer eating experiences for humans who select those foods". On a sociocultural level, from which the approach of this study is drawn, "foods are represented as symbols and social markers of the food choice practices in which people engage" (Sobal et al., 2014:8.) Article I deals with individuals' perceptions of food-related social images which include these representations and social markers (Sobal et al., 2014; Sobal 1991) as part of the formation of social images.

Contextual characterises choices as constructed within "specific social situations and physical settings" (Sobal et al., 2014:7). *Integrated* refers to

complex, mutually consistent and contradictory factors related to the actual food choices such as interconnected decisions established in different contexts and mixed with other diverse aspects of peoples' lives (Sobal et al., 2014). In the articles II and III, contextual and integrated perspectives are taken into account. These articles cover a study conducted in a specific social and physical setting of workplace restaurants as a field experiment, in real-life conditions. Moreover, in food decisions there are many blended factors involved, and therefore "researchers need to not only study specific components of food choice but also understand the connections and linkages in food choice processes" (Sobal et al., 2014:8).

Public dining areas, such as restaurants, cafeterias, and canteens, have been stages for many kinds of interventions, such as promoting healthier but also more sustainable consumption choices (for a review see e.g. Lorenz & Langen, 2018; Wahlen et al., 2012), where both supply of and demand for food are present. Public catering not only offers a venue for introducing sustainable alternatives but is also a place for consumers to learn new eating practices from their peers, which may further change their consumption practices at home (Wahlen et al., 2012). Food choices in such conditions may be strongly affected by social influences as the choices are made publicly, often in the presence of others belonging to one's reference group, for example work colleagues. Also, the choices made in workplace restaurants may be fast, repetitive in nature, and based on habits requiring little cognitive effort. Mollen et al. (2013:87) describe choices in food court as: "quick decisions are made under conditions of low effortful cognitive activity".

In Finland the role of workplace restaurants is important in terms of the food consumption of both individuals and the whole society. Lunches form a significant part of the overall food consumed (Raulio, Roos & Prättälä, 2012) and are mostly eaten in workplace restaurants, especially in the capital area of Finland (Raulio, Roos, Rahkonen & Prättälä, 2005), where the data collection of this study took place. In addition, the amount of lunches consumed in workplace restaurants is increasing (Paakkari, 2019).

Another component concerning food choices in this study is what motivates consumers to make those choices. Motives which regularly arise as significant in food choice studies (e.g. Steptoe et al., 1995; Tuomisto, Tuomisto, Hetherington, & Lappalainen, 1998; Jackson, Cooper, Mintz & Albino, 2003) include, for example, sensory qualities (for example taste or visual appeal), price, convenience, health (e.g., Steptoe et al., 1995; Januszewska et al., 2011), habit, and need/hunger (Renner et al., 2012). Moreover, according to Loewenstein (1996:272), hunger, thirst, moods, emotions, and other visceral factors "have a disproportionate effect on behavior and tend to "crowd out" virtually all goals, other than that of mitigating the visceral factor".

In the literature, the motives of food selection are addressed in the model The Eating Motivation Survey (TEMS) by Renner et al. (2012). TEMS is formed of fifteen main factors for food choice and it is the most relevant model

to this study because it is the one which takes social aspects into account. The main motive factors of the model (liking, habits, need and hunger, health, convenience, pleasure, traditional eating, natural concerns, sociability, price, visual appeal, weight control, affect regulation, social norms, and social image) are formed of 87 motives for food choice. The model and the motives are grounded on the existing literature and several questionnaires concerning food choices. The social aspects included in this model are motives of sociability, social norms, and social image.

Interestingly, although social norms and social image are among the motive factors for food choice in TEMS, people themselves do not consider them among the most important motives (Renner et al., 2012). It can therefore be argued that social norms and social image are strong factors in influencing food choice behaviour and that they may have an impact on consumers even without their conscious awareness (Ölander & Thøgersen, 2014).

2.3 SUSTAINABLE FOOD CHOICES

Steering consumers' diets towards sustainability has been proven to be a challenge (e.g. White, Habib & Hardisty, 2019). Although consumers express their concerns about the environment and have positive attitudes towards sustainable consumption, most of their intentions do not realise into actions. Kollmuss and Agyeman (2002) list several barriers to sustainable consumption in their widely cited review. Among these they present factors that are especially relevant to people as individuals, such as motivation, environmental knowledge, attitudes, environmental awareness and emotional involvement. If the sustainable behaviour is not aligned with consumers' self-interests, people may perceive such diets as restricting. They may be confused about what to do, why, and whether they have to make trade-offs between product sustainability and other valued product attributes (e.g. Luchs & Kumar, 2017).

Sustainability is not necessarily among the consumer's primary motives but rather a bonus when choosing a product or service. Traditional economics assumes that a consumer seeks to maximise utility while trying to minimise the costs (e.g. Terlau & Hirsch, 2015), and therefore weighs the pros and cons when making choices. By repeating decisions, the skills of the consumer should improve, leading eventually to unconscious and automatic choice behaviour (e.g. Goldsmith 2015:99). Consumers make choices on services or products that bring them the most use or value. However, the motives for choosing sustainable food may differ from the motives for choosing any other food. One difference which may occur between sustainable and non-sustainable products is the motivating aspect behind the choice. Promoting a sustainable diet is somewhat different from promoting, for example, healthy food items. In addition, the benefits of sustainable choices may benefit the society as a whole rather than the individual directly (e.g. Avramova & Van

Trijp, 2014:3). Nevertheless, sustainability may guide the consumer choice in situations where sustainable products provide, for example, superior quality, but also distinctiveness from a social group or a superior social signal (Miller, 2014). These kinds of characteristics may be considered as motivating factors of sustainability. This, however, may largely depend on the context where choices are made.

There are numerous ways to eat sustainably (e.g. Lorenz & Langen, 2018). Verain, Dagevos and Antonides (2015), categorise sustainable consumption into two behaviours, choice and curtailment. One can choose products based on the way they are produced or make changes in one's dietary composition by reducing the quantity of a certain product within food categories (Verain et al., 2015). Thus, sustainable food choices can be understood from the choice of an individual item to the wider choice of a diet. Consequently, the broad term of sustainable food choice in this particular context may cover, for example, purchasing items which are prepared with sustainable methods, reducing the eating of meat and substituting it with fish or plant-based sources of protein, adopting vegan or vegetarian diets, or choosing locally produced and organic food. Moreover, sustainable food purchase can be made through channels that use resource-saving methods in transportation. Also, as about one third of all produced food ends up in waste, it is important to reduce food waste in all stages of the food systems (Gustavsson, Cederberg, Sonesson, van Otterdijk, & Meybeck, 2011). In this study I take two approaches: in Article I the food choice under study is a more comprehensive concept that covers the whole diet, while in Articles II and III, it is a single choice between a more sustainable and less sustainable meal option.

In Finland, while the consumption of red meat has still exceeded recommendations (Valsta, Kaartinen, Tapanainen, Männistö, & Sääksjärvi, 2017), substituting meat with fish or vegetable-based substitutes, such as broad bean and oat-based products, is not only recommended but also a realistic option. Indeed, plant-based protein products have recently gained larger market shares (Piipponen, Rinta-Kiikka, & Arovuori, 2018; Isokangas, Rautio, Solala & Åström, 2018). Likewise, fish consumption has also increased. However, farmed and imported fish has replaced domestic and wild-caught fish such as Baltic herring (Natural Resources Institute Finland, 2019), leaving wild fish underutilised. Nevertheless, during the past few years, many companies have voluntarily invested in the processing of domestic wild fish such as roach, bream, and blue bream (Setälä, Saarni, & Niukko, 2017).

3 SOCIAL INFLUENCES ON FOOD CHOICE

In this third chapter, I will discuss the impact of social influences in the context of food choice. I will first introduce the theories which have been applied to this study before bringing out the main aspects of the theoretical framework presented at the end of the chapter.

3.1 SOCIAL INFLUENCE

Social influence has a powerful role in human behaviour. The power of social influence lies within the fact that it consists of numerous strategies such as punishment, rewards, and persuasion and it uses other people as sources for these effects (Goldsmith & Goldsmith, 2011).

Social influence may be considered as an umbrella concept. It can be described as "processes whereby people directly or indirectly influence the thoughts, feelings, and actions of others" (Turner, 1990:1). Social influence may take many forms, such as persuasion, conformity (e.g. yielding to group pressure), compliance (e.g. going along with others' reactions), motivation, performance, obedience, leadership, and information exchange (Goldsmith 2015:5). Social influence includes both verbal and non-verbal aspects. It "provides individuals with the information and the motivation to form new attitudes and adopt new behaviours" (Goldsmith & Goldsmith, 2011:120). Goldsmith (2015:5) categorises social influence into four main types:

1. Imitation from observations of others
2. Formal, authoritative sources or as a result of advice seeking
3. Informational from word of mouth, caught conversations, and informal listening
4. Social groups such as memberships in clubs, families, organizations, networks, institutions, and workplaces.

Social influence is a strong factor for how people consume. The impact of social entities may be more emphasised in certain situations than others, as a person's self-images are dependent on the person's reference frames (Sobal et al., 2014). For example, diverging from a social group may be pronounced in a certain situation (e.g. Berger & Rand, 2008), whereas affiliating with a group may be crucial in another (e.g. Robinson, Tobias, Shaw, Freeman, & Higgs, 2011). It is also possible that people are simply uncertain about what to do and follow other people without any intention of affiliation (e.g. Burger et al., 2010).

The focus of this dissertation covers certain concepts under social influence, namely social images of consumption stereotypes, and perceived social norms. Referring to the categorisation of social influences by Goldsmith

(2015) above, these concepts fall into all of these main types of social influence. People are willing to display a positive social image by their choices and imitation of others is shown to impact on food intake and what foods people choose (e.g. Cruwys et al., 2015; Christie & Chen, 2018). People also make inferences about others relying on the consumption behaviour they observe. How particular choices made by people are perceived by others is based on shared consumption stereotypes. Social norms are communicated in social groups and organizations by different mechanisms, including the means of imitating and observing others. Social norms indicate appropriate behaviour within the group but may also be interpreted as authoritative codes of conduct. Stereotypes and social norms are also shared in informal and formal interpersonal communication.

3.2 SOCIAL GROUPS AND SOCIAL IDENTITIES

Belonging to groups is essential for human beings. The individual's need to belong to social groups is a powerful driver of social behaviour. Social structure consists of relationships between individuals and institutions in which an individual exists and through which to express oneself. By memberships in social groups an individual creates and displays one's identities. The membership or willingness to belong to a group is an identification process. As a result of identification, a person holds an identity or identities.

There are different types of social groups in society which individuals may identify with. These may be abstract or concrete groups, such as those related to political, ethnic, cultural, and family issues. The groups may function in different ways and they may also vary in their function to their members (Postmes, Rabinovich, Morton, & Van Zomeren, 2014:193), depending on which one of the identities is made salient.

Identification with a group is motivated by reducing uncertainty, which is a universal human motive (Hogg, 2006). A person's identities are crucial as they "form part of the rules for appropriate behavior in particular situations" (Sparks, 2014:174). These rules for appropriate behaviour are social norms, standards shared by the members of the social group (Turner, 1991:3) and they reduce the uncertainty by being both descriptive and prescriptive (Hogg, 2006). Shared social identities are consensus about the content of the group and how others are expected to behave.

Turner (1991:5-6) makes a difference between two influential groups for individual's needs: membership groups and reference groups. An individual may be a member of a certain group, but it is not necessarily the group whose norms and values one is following. Reference groups consist of people to whom a person looks for guidance regarding knowledge and beliefs and whose behaviour an individual may imitate (Goldsmith & Bacille 2015:132). The consumers' attitudes and behaviour may be influenced by reference groups, to

which they compare themselves and from which they may acquire norms and values. Reference groups may be positive or negative, depending on whether one is attracted or otherwise identified with it or the contrary (Turner, 1991:5-6). Positively viewed reference groups are important for social group norms to arise as well as for modifying individual's own attitudes and behaviour (Turner, 1991:11-12).

Individual's social identities may be salient depending on situations and may be attached to various, possibly conflicted motives (e.g. Sparks, 2014:174). Social identities also differ in strength in how strongly one is identified with it as well as how strong a source the identity is regarding its normative influence (White, Smith, Terry, Greenslade & McKimmie, 2009).

In the context of food choice, a consumer's choices are often guided by a perceived food-choice identity (Sobal et al., 2014). Food-choice identities are constructed by thinking, feeling and acting in respect to food and eating. By adapting food-choice identities, people define and express themselves with food. These expressions are received and translated by others. The identities may be adjusted in different contexts and the emphasis and importance of food to one's self-esteem may vary between people (Sobal et al., 2014). People may express different food choice identities depending on the situation or the peer group. Consumers who identify themselves with certain groups are more likely to act according to social norms of the group (e.g. Terry, Hogg & White, 1999) and also willing to consume products with characteristics consistent with the group. For example, consumers who identify themselves as "environmentally friendly consumers" are more likely to buy organic food products (Bartels & Hoogendam, 2011).

Postmes et al. (2014) emphasise the ability of social identities to engender and sustain behaviour and to make also large-scale change towards sustainable consumption. Additionally, they describe social identities as "vehicles of transformation", which "can be actively geared toward change". However, identification of social identities alone does not forward positive action, but they should be associated with positive ideals. (ibid.:191.) Moreover, Postmes and colleagues (2014) suggest that if social identities with ideals of sustainability at their core can be constructed and shared by large segments of the population, behaviour should follow. Thus, social identity provides a common frame of reference for social norms (Postmes et al., 2014:191).

However, in the food context, people may model the eating behaviour of others even if they do not identify with that particular group (Liu & Higgs, 2019). According to Goldsmith (2015:171), only 7-10% of American consumers identify themselves as "environmentalists", although most of Americans engage in sustainable behaviour, such as recycling or buying organic food, at least to some degree. The reason why American consumers do not identify as environmentalists may be because they do not recognise all the pro-environmental actions they take as important in a large scale, but also because the image of being an environmentalist is not something they wish to express

as their identity or want to be identified with. According to some researchers, there is no such thing as a "green consumer", but consumers with different strategies for consumption that cannot be predicted by demographic, socioeconomic or psychographic characteristics (McDonald, Oates, Alevizou, Young & Hwang, 2012). Moreover, having an identity of an eater and to eat a certain diet are not the same constructs (Rosenfeld & Burrow, 2018) as people may make a range of choices, based on their influences and personal system (Furst et al., 1996; Figure 1). The choices can also be consciously or unconsciously sustainable (Prothero, McDonagh & Dobscha, 2010) and individuals may display sustainable behaviour although they have not purposely identified with sustainable or green consumers. Some consumers might buy green products less for environmental or economic reasons and more for social reasons, especially if a purchase is made in public (Griskevicius, Tybur & Van den Bergh, 2010). Hence, we can assume that reasons for sustainable behaviour are not always aligned with a person identifying as a consumer making sustainable choices.

3.3 IMPRESSION MANAGEMENT, CONSUMPTION STEREOTYPES AND SOCIAL IMAGES

People make assumptions about others relying on how others behave. This "tendency to make inferences about others based on their choices of consumption objects" is "perhaps one of the strongest and most culturally universal phenomena inspired by consumer behavior", according to Belk, Bahn and Mayer (1982:4).

One of the reasons why the social influences have a powerful impact on food choice behaviour is because people are willing to conform to other people's behaviour in order to project a positive image (Tarrant & Butler, 2010; Berger & Rand, 2008). Consumers engage themselves in impression management, a "process of controlling how one is perceived by other people" (Leary, Allen, & Terry, 2011:411) when they intend to project a certain image of themselves by consuming. The impression management process involves two separate, mutually dependent parties: an actor and a target audience. In order to give an appropriate impression in a particular situation, the actor modifies their behaviour on the basis of the feedback (actual or imagined) from the target audience. (Crawford, Kacmar & Harris, 2019.) Nevertheless, impression management may not be a goal in itself but used to reach other targets (Leary et al., 2011). For example, displaying a positive image to gain appreciation can serve as a motivation for impression management. It is also notable that although impression management is often conscious, it may also be subconscious if the behaviour has become a routine (Leary & Kowalski, 1990).

Impression management is grounded in stereotypes, which are defined as widely adopted and overgeneralised beliefs applied to a group of people.

Stereotypes are based on a group membership and are often inaccurate (Brandt & Reyna, 2011) as they are habitually used in contexts where accurate information is not available. Moreover, perceptions of how a behaviour corresponds to a particular stereotype may not be true for all audiences, because not everyone has the same stereotypical perceptions (Vartanian, Herman, & Polivy, 2007).

Impression management is especially relevant in a food choice context (Vartanian, 2015). The food choices made by actors lead the audience to form inferences based on commonly shared consumption stereotypes. These are "stereotypes associated with eating particular food and/or particular amounts" (Herman, Polivy, Pliner & Vartanian, 2019:23). For example, people make judgments based on what or how much one eats and may rate the eater with characteristics such as gender, attractiveness, intelligence, morality, weight, health and self-control (Vartanian et al., 2007; Vartanian, 2015; Herman et al., 2019). People usually intend to avoid communicating negative impressions through their choices. They may be familiar with the perceived negative impressions, although not necessarily always be aware of them. (Herman et al., 2019.)

People find it easy to classify food items into good/bad, healthy/unhealthy, or feminine/masculine (Stein & Nemeroff, 1995; Mooney & Lorenz, 1999). One of the most extensively studied food-related consumption stereotypes relates to gender. "Good", "healthy", and low-fat foods (e.g. Mooney & Lorenz, 1999; Vartanian et al., 2007), as well as sustainable foods such as organic food (Shin & Mattila, 2019), tend to be rated as feminine, whereas "bad", "unhealthy", and high-fat foods are described as masculine (for a review see e.g. Vartanian et al., 2007). Interestingly, eaters of "good" and thus feminine food, are seen as more attractive, more intelligent and moral, whereas eaters of "bad" and masculine foods are not (Herman et al., 2019). Although "good" eaters are generally seen more positively in terms of their personal qualities in comparison to "bad" eaters, the former group was seen as "serious" and "highly strung" whereas the latter group were perceived as "fun-loving" and "happy". (Barker, Tandy & Stookey, 1999).

Social image is an important concept in impression management where an actor aims to create, maintain, or modify their social image in the eyes of the audience (e.g. Leary & Kowalski, 1990). By adjusting their behaviour, actors are aiming to associate themselves with appealing or positive social images and disassociate themselves from unappealing or negative social images. The social image, in turn, has an effect not only on how others treat the actors but also how the actors feel about themselves (Vartanian, 2015).

Social image and consumption stereotypes are associated with a person's identity in food choice situations: a person is more likely to make a choice if the characteristics related to a particular food are congruent with their own identity. Similarly, a person avoids choosing a food with an associated feature that is not aligned with their identity. This has been particularly emphasised in gender-related aspects. Compared to women, men are more likely to avoid

choices that conflict with their own perception of gender (e.g. White & Dahl, 2006; Gal & Wilkie, 2010; Brought et al., 2016). As noted, sustainable food is often rated as feminine (e.g. Shin & Mattila, 2019), and thus men may find it more challenging to overcome the barrier to choose "feminine" foods. This may be one of the reasons why especially men do not adopt a vegetarian diet. Vegetarianism is often linked with femininity and men may feel that a feminine identity threatens their own, masculine identity (Vartanian 2015; Tobler, Visschers, & Siegrist, 2011). However, gender is not the only perceived barrier. Although people who eat sustainably have been rated positively (vegetarians, e.g. König et al., 2017), or higher in status and wealth (organic eaters, Puska, Kurki, Lähdesmäki, Siltaoja & Luomala, 2016), people have also perceived unwanted social images as barriers to sustainable consumption (Antonetti & Maklan, 2016; Brough et al., 2016, Vartanian, 2015; Minson & Monin, 2012), thus demonstrating the complexity of the social images of eating sustainably.

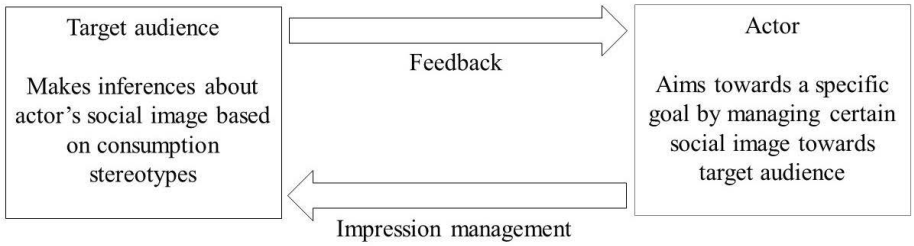

Figure 2 A conceptual model of impression management.

Behavioural adjustment of impression management by which an actor aims to create, maintain, or modify the social image that a target audience holds of the actor (e.g. Leary & Kowalski, 1990) is presented in Figure 2. The feedback the actor obtains (or perceives to obtain) from the target audience results in behavioural adjustment (for example, by making food choices that correspond to a desired social image).

With regard to the sustainability of food choices, there are four types of feedback which can promote or hinder it as follows: (i) ”negative/pro-sustainability (decrease or reverse current unsustainable practice)”, (ii) “positive/pro-sustainability (continue or increase current sustainability-oriented practice)”, (iii) “negative/anti-sustainability (decrease or reverse current sustainability-oriented practice)”, and (iv) “positive/anti-sustainability (continue or increase current unsustainable practice)” (Starik & Rands, 1995:914). After receiving this feedback from the target audience, the actor's sustainable food choices are promoted if less sustainable diets are associated with unappealing social images (feedback type i) and/or more sustainable diets with appealing social images (feedback type ii). By contrast,

sustainable food choices are hindered if more sustainable diets are associated with unappealing social images (feedback type iii) and/or less sustainable diets with appealing social images (feedback type iv).

Similarly, to these appealing and unappealing stereotypical traits, sustainable food choices are promoted if the gender stereotype associated with more sustainable diets is congruent with the gender identity of the individual making the food choice and hindered if these are incongruent (e.g. Brough et al., 2016; Shin & Mattila, 2019). In this regard, males may not tolerate dissociative features in relation to their gender identity as much as females (e.g. White & Dahl, 2006; Gal & Wilkie, 2010).

3.4 SOCIAL NORMS

Social eating occasions are often steered by the normative guidelines or the pursuit of social status which oblige people to act in accordance with normative coding. A social norm is described as "a rule, value or standard shared by the members of a social group that prescribes appropriate, expected or desirable attitudes and conduct in matters relevant to the group" (Turner, 1991:3). Social norms provide order, logic and stability to human life on many levels of the society and the individual (Turner, 1991:3) as norms stem from the society or narrower groups which individuals identify with (Herman et al., 2019:19). The core idea of social norms is oughtness and moral obligation and they express normative judgment of the group (Turner, 1991). Those members of the group who conform to the norms tend to be socially approved by other members whereas those who do not behave according to the norms may be socially punished. By following social norms, individuals aim to avoid social punishment and also reduce uncertainty over their decisions (Goldsmith, 2015). Conforming to social norms is sometimes necessary, even if individuals do not like the norms or believe that they are right (Turner, 1991).

People are always subject to social norms as social norms are observed as standards for what constitutes appropriate consumption for members of a social group. The degree to which people perceive social norms as important varies as does the identification with social groups, as outlined in section 3.2 above. Social norms may also be rejected if they originate from social groups with which a person does not wish to associate (Higgs, 2015). In addition, the effect of any social norm may be dependent on people's existing behaviours. For example, if people are told that they are already consuming less energy (i.e. behaving more sustainably) than their peers, they may increase their energy use unless they are encouraged to continue their current behaviour (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007).

In the literature, Lapinski and Rimal (2005, see also Rimal & Lapinski, 2015), divide social norms into collective and perceived norms. Collective norms are identified by the current behaviour on the social group level. Perceived norms are an individual's subjective perception of the shared

behaviour of others. This means that sometimes norms may still be efficient although they are misperceived, i.e. others' perceived behaviour is not necessarily actual. In a food context, people may overestimate the consumption of others and follow this assumption as a norm (e.g. Perkins, Perkins & Craig, 2010; Lally, Bartle & Wardle, 2011). In addition, individuals differ in their sensitivity to the impact of norms and how strongly they prefer to conform to them (Biondi et al., 2019; Robinson et al., 2011). Sometimes the normative guidelines of how much it is appropriate to eat may even override hunger (Goldman, Herman & Polivy, 1991). It should also be noted that the impact of social norms is particularly high when behaviour is conducted in public (White & Peloza, 2009).

Thus, social norms can significantly shape human behaviour (e.g., Cialdini, Kallgren, & Reno, 1991), and they may be used to steer consumer choice. However, when measuring the impact of social norms on food choice from the consumers' point-of-view, it has been found to be weaker than other motives such as taste, habit, or sensory appeal (e.g. Renner et al., 2012; Phan & Chambers, 2016). Moreover, there are different types of social norms which vary in their influence as social norms are both descriptive and prescriptive by nature. Descriptive social norms reflect the actual similarities in group members' behaviour, whereas prescriptive norms reflect the shared beliefs of appropriate manner in terms of behaviour. The following section analyses these two types of norms and their impact on choice in more detail.

3.4.1 DESCRIPTIVE AND INJUNCTIVE SOCIAL NORMS

A focus theory of normative conduct

One of the most commonly used distinctions of social norms is the one that categorises them into descriptive and injunctive norms. According to the focus theory of normative conduct by Cialdini, Reno and Kallgren (1990), descriptive social norms refer to how most people typically behave in a given domain or situation, whereas injunctive social norms characterise commonly approved or disapproved behaviour within a social group. Different types of social norms vary in their degree of power in various situations. According to the theory, when the aim is to get people to follow and be impacted by the norms, the precise norms should be salient and thus activated (Cialdini et al., 1990; 1991).

The origins of the descriptive and injunctive social norms are conceptually dissimilar. Both types of norms differ in the way they influence behaviour, although both of them guide it. Conforming to descriptive norms is seen as a more authentic and intuitive type of behaviour called "informational social influence", whereas conforming to injunctive norms, "normative group pressure", is seen as more directed, learned and thus less authentic (Kelman, 1961 as cited in McDonald & Crandall, 2015:147).

Descriptive and injunctive norms transfer different information about behaviour, and they connect to distinct kinds of goals. While descriptive norms are particularly important for the individual's intrapersonal goals of behaving appropriately in a situation and making accurate decisions (Jacobson, Mortensen, & Cialdini, 2011), injunctive norms are thought to guide behaviours because they are associated with the individual's interpersonal goals of obtaining affiliation and social approval (Cialdini et al., 1990). Injunctive norms "illuminate the underlying values that individual perceives to be held by others in their social group" (Chung & Rimal, 2016:6-7) and therefore their impact is based on an individual's desire to belong to a group, unified by shared values. Behaving in accordance with the injunctive norms means also that the individual avoids social punishments which may result from not adhering to the rules of the group (Reno, Cialdini, & Kallgren, 1993; Cialdini & Trost, 1998).

Moreover, descriptive and injunctive social norms are influential under dissimilar conditions. Descriptive norms are powerful when cognitive activity is low and the decision maker seeks for a short-cut to ease their choice (Cialdini et al., 1990; Cialdini, 2009). They are also more efficient in situations on a case-by-case basis. Injunctive norms require more cognitive activity to influence behaviour (Jacobson et al., 2011) and an understanding of the morals and values of the group (Cialdini, 2003). As injunctive norms capture approval and disapproval of the behaviours within a group or a culture, they are unchanging and likely to apply across different contexts (Reno et al., 1993).

The above types of social norms are, however, related to each other. The perception of what others do, a descriptive norm, although it may be morally neutral (Chung & Rimal, 2016), can be understood as an indicator of an injunctive norm, which relates to a generally approved behaviour in that specific situation (Cialdini, 2007). Especially in ambiguous situations, when it is not clear what the appropriate behaviour is, descriptive norms have a greater impact compared to injunctive norms (Cialdini, 2009). A descriptive norm may have an impact even if it is falsely translated (Larimer & Neighbors, 2003).

Studies have been conducted on the impact of social norms on actual behaviour, as well as intentions, which indirectly impact on behaviour. In the analysis of almost 300 studies about consumer decision-making processes, Melnyk, Van Herpen, Jak, and Van Trijp (2019) found that descriptive norms have a stronger and more direct impact on behaviour, whereas injunctive norms have a stronger impact on intentions. A descriptive norm may have an effect on the self-reported behaviour afterwards, even if it does not influence the intentions immediately (Stok, Ridder, de Vet, & de Wit, 2014). Descriptive and injunctive norms appear among the most important direct determinants in sustainable food choice intentions, such as meat avoidance (Schenk, Rössel & Scholz, 2018).

Although the effect of injunctive norms on intentions has been confirmed, they have not generally had an impact when the aim has been the change of

actual consumption patterns. The use of injunctive norms in promoting healthier eating has not resulted in being as effective as the use of descriptive norms (Stok et al., 2014; Robinson, Fleming & Higgs, 2014; Lally et al., 2011), indicating both the sensitiveness towards the use of such a norm type and that people are unwilling to act when they are told how they should eat.

However, there are issues which may influence the effectiveness of injunctive norms. As discussed earlier, the effectiveness of the norm is based on an individual's need to belong to a group and to obtain its social approval (Cialdini & Trost, 1998) but how the individual perceives the relevance of the group is also important (Masson & Fritsche, 2014). A person is more likely to conform to the group norms the more they connect to the group, and an identification with a group may form itself unexpectedly. In a study by Goldstein, Cialdini and Griskevicius (2008), participants were identified more with a group that had been physically close to them at the same location: participants identified with the past guests of the hotel room they were currently staying in instead of fellow hotel guests, fellow citizens or men/women. As the example of Goldstein et al. (2008) demonstrates, people tend to be more influenced by the social norms of their immediate environment.

Injunctive norms alone have been effective in some pro-environmental acts. The impact of these norms has been most effective when the aim has been to prevent undesired rather than promote desired behaviour. Successful attempts have resulted in preventing unwanted behaviour, such as littering (Reno et al., 1993), theft of petrified wood from a nature reserve (Cialdini et al., 2006), and use of plastic bags (de Groot, Abrahamse, & Jones, 2013). Injunctive norms have achieved effective results when they have been combined with descriptive norms in a way that aligns both social norm types, rather than puts them in a competition with each other, so that motivation sources of both norm types are also combined (Cialdini et al., 2006). Thus, consumers are informed that a normative reference group in a similar situation conforms to the norm (e.g., Goldstein et al., 2008), that behaving against the norm is not common among others, and that such behaviour is disapproved (Cialdini et al., 2006). The injunctive norms formed in this manner in combination with descriptive norms have been effective in promotion of sustainable behaviours, such as energy conservation (e.g., Schultz et al., 2007).

Despite the impact of combined descriptive and injunctive norms, it is essential to separate them in certain occasions. There are situations where the role of injunctive norms may be emphasised in the choice making process. Focusing on the current discussion about food and climate, it may be hypothesised that social norms go along with environmentally friendly behaviour and the prevalent injunctive norm is that people should behave in an environmentally friendly manner and consume sustainably. When people perceive other people changing their behaviour and signalling that they consider the change as important (Sparkman & Walton, 2017), they too tend

to change their own behaviour. Moreover, when people are in the process of changing their eating patterns, the importance of their new social identity may be pronounced (Vainio, Niva, Jallinoja & Latvala, 2016). Therefore, their need to follow the social norms of a particular group they want to identify with may also become increasingly relevant.

3.4.2 SOCIAL NORMS IN DECISION MAKING

System 1 and System 2

Descriptive and injunctive norms stem from different motives and they impact behaviour differently. In the context of food choices, descriptive norms have been shown to be more powerful in terms of both food intake and in choosing healthier food items (e.g. Robinson & Field 2015; Robinson & Higgs 2013). Nevertheless, people tend to underestimate the impact of social norms on their own behaviour (e.g. Nolan et al., 2008).

It is understood that the influences of descriptive and injunctive social norms differ from one another in the ways they impact on the individual's choices and the strength of that influence. There are theories which explain the impact of these two types of social norms on individual's decision-making process and further help to understand what factors are used by individuals when they make food choice decisions.

These frequently applied theories called 'dual-system' or 'dual-process' theories help to understand not only decision making, but also learning, reasoning and social cognition (Viswanathan & Jain, 2013). A dual-system comprises of two distinct processes, System 1 and System 2, which individuals use for cognitive tasks (Stanovich & West, 2000; Kahneman, 2011). Decision making is influenced by both of these systems. The former, System 1, is characterised as a heuristic process which is "fast, automatic and unconscious" (Viswanathan & Jain, 2013:485) and "operates automatically and quickly, with little or no effort and no sense of voluntary control" (Kahneman, 2011:20). Additionally, System 1 "helps us to perceive the world around us, recognise objects, orient attention and avoid losses" (Viswanathan & Jain, 2013:485). It is also more related to the context in which the decision is made (Stanovich & West, 2000). Habitual and routine daily decisions are based on System 1.

System 2, also called an analytic system (e.g. Kokis, Macpherson, Toplak, West, & Stanovich, 2002), is characterised as "rule-based, analytical and reflective" (Viswanathan & Jain, 2013:485) and it "allocates attention to the effortful mental activities that demand it" (Kahneman, 2011:20). Frankish (2010) describes this type 2 process as a slow, controlled, conscious, and rule-based process which uses working memory and varies across cultures and individuals. System 2 may override the impulses and associations generated by System 1 (Kahneman, 2011). If consumers' sustainable intentions and actual behaviour do not meet, their actual purchase behaviour may be

influenced by System 1, while their conscious thoughts of sustainability may reflect System 2. In that case, to get sustainable consumption intentions and behaviour aligned, continual conscious decisions and efforts of System 2 are needed (Terlau & Hirsch, 2015). Of course, it is also possible that System 1 processes themselves already result in sustainable choices.

Descriptive norms are determinants of System-1-type processes, while injunctive norms are determinants of System-2-type processes (Ohtomo & Hirose, 2007). With regard to the description by Cialdini et al. (1990) on the division of descriptive and injunctive norms in section 3.4.1. above, it can be noted that descriptive norms are used as a shortcut when one has to decide quickly how to behave in a situation and that the ability of an injunctive norm to predict behaviour tends to be weak unless the norm becomes salient through activation (Kallgren, Reno, & Cialdini, 2000). The decisions based on descriptive norms are often automatic or unconscious and the context in which the decision is made is often significant in the outcome of the behaviour (Ölander & Thøgersen, 2014). The impact of a descriptive norm is higher when people are under a cognitive load (Kredentser, Fabrigar, Smith & Fulton, 2012). In contrast, the impact of an injunctive norm tends to be higher when an individual is aware of it and has time to consider when the particular behaviour associated with the norm becomes salient (Kallgren et al., 2000).

3.4.3 ACTIVATION OF SOCIAL NORMS

Model of social norm activation

Social norms have some degree of "chronic salience", which is a baseline for the norms' impact on the individual within a social group without activation (Jacobson, Marchiondo, Jacobson, & Hood, 2018). The level of the baseline depends on one's subjective perceptions of a situation. Nevertheless, as noted earlier, the focus theory of normative conduct (described in more detail in section 3.4.1.) requires social norms to be salient and thus activated when the aim is for people to follow and be impacted by the norms (Cialdini et al., 1990; 1991). Bicchieri's (2006) model of social norm activation is based on the same premise. According to this theory, injunctive norms (which are called 'social norms' in Bicchieri's model), require activation or recognition in order to function. A norm is activated when "the subjects involved recognize that the norm applies" (Bicchieri, 2006:59) or the norm is "made salient or otherwise focused on" (Cialdini et al., 1990:1015). Activating the norm in the situation strengthens the belief that other people are behaving in accordance with the norm and/or that other people expect this kind of norm confirmative behaviour (Blay, Gooden, Mellon, & Stevens, 2018). However, recognising a norm or following it are not necessarily conscious processes (Bicchieri, 2006; Blay et al., 2018).

Norms can be made more salient by activating them with situational cues. The salience of the norms may be increased by manipulating situational cues of peoples' beliefs that others conform to the norm, or that they expect conformance (Blay et al., 2018). Situational cues may be present in various forms, such as written or pictured messages about appropriate behaviour (e.g., Mollen et al., 2013; Thomas et al., 2017; Griskevicius et al., 2010; Nolan et al., 2008; Schultz, 1999; Stöckli, Stämpfli, Messner, & Brunner, 2016); other people's behaviour (for a review see e.g. Cruwys et al., 2015); or environmental cues such as empty chocolate wrappers (Prinsen, de Ridder, & de Vet, 2013) or swept or unswept litter on the floor (Cialdini et al., 1991). The impact of others may be unexpectedly strong, even if the others are not present in the food choice situation (Prinsen et al., 2013). However, when attempting to activate norms with messages, one should be careful: for example in the context of sustainability, guilt has not been a successful motivating factor but has rather backfired (Banfield, Shepherd, & Kay, 2014:120) as people may be sensitive to being told what to do.

In Bicchieri's model, there are three conditions which are required to be fulfilled in order for a norm to be activated: 1) the norm needs to be appropriate to the current situation (*contingency condition);* 2) one has to believe that a group of people large enough obeys the norm (*empirical expectations condition);* and that 3) enough people expect conformation to the norm *(normative expectations condition)* (Blay et al., 2018). In addition to the conditions above, the model also takes into account the option that there are personal differences between individuals in how sensitive they are to the impact of social norms (Bicchieri, 2006; Blay et al., 2018). Different personality traits, for example the need for acceptance by other people, are linked to how social norms are followed (Biondi et al., 2019; Robinson et al., 2011). In other words, people may interpret situational cues differently and as a result also differ in how strongly they prefer to conform to social norms.

In the case of multiple norms, i.e. where there is more than one social norm to follow, the joint activation of descriptive and injunctive norms (e.g., Smith & Louis, 2008) has been proven to be effective in pro-environmental promotion, as noted earlier. These two different types of social norms are more efficient when they appear together and are aligned.

However, as individuals may belong to multiple social groups, there may be congruence and conflicts between the descriptive social norms which are simultaneously present (e.g., McDonald et al., 2013; 2014). Whereas accordant norms from multiple groups amplify the effect on behaviour (Smyth, Chandra, & Mavor 2018), conflicting norms from multiple groups may either motivate or demotivate pro-environmental behaviour intentions, depending on group members' attitudes (McDonald et al., 2013; 2014).

Interestingly, the activation of multiple injunctive norms, and how this activation affects behaviour in the complex context of sustainable food choices, has remained uncovered. Sustainability is a multifaceted concept with ecological, social, and economic aspects. A number of different underlying

sustainability issues may relate to a particular behaviour. For example, a consumer's choice of a meat-substitute instead of meat may simultaneously relate to, e.g. animal welfare, climate change, antibiotic resistance, and one's own health. As multiple sustainability issues may be intertwined and more than one of these issues are present at any one time, it is likely that the activation of multiple injunctive norms affects behaviour differently as opposed to the activation of an individual norm.

3.5 THE THEORETICAL FRAMEWORK OF THIS STUDY

This section presents the theoretical framework of the study and is structured around the key aspects adapted from the theoretical literature review on social influences and food choice. In this section, I first present an overall view of the theoretical framework and then reiterate briefly its main components. Thereafter, I describe how each of the articles relates to the theoretical framework, how they are related to the main research question of the study, and what are the research questions and hypotheses presented in each article.

Figure 3 presents the theoretical framework of the study. There are several motives which impact on food choice and its sustainability. One set of food choice motives can be grouped together under the umbrella term of social influence. This study examines two types of social influence motives related to food choice: social image and social norms. Within social image, a key concept relevant to this study is that of a consumption stereotype associated with a particular choice. When discussing social norms, the key concepts consist of the distinction between descriptive and injunctive norms as well as their activation. The key theories, through which these concepts are approached, are impression management, focus theory of normative conduct, dual-process theories, as well as a model of norm activation.

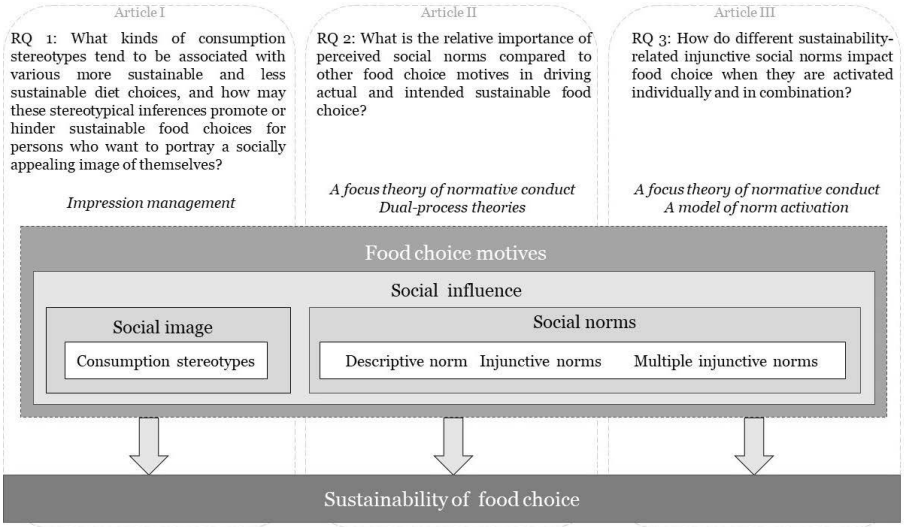

Figure 3 The theoretical framework of the study.

One of the reasons for the powerful impact of social influence on food choice behaviour is that people are willing to conform to other people's behaviour in order to display a positive image (Tarrant & Butler, 2010; Berger & Rand, 2008). Consumers practice impression management by consuming certain items with the intention of portraying a certain social image of themselves to others, which is influenced by the feedback received from them. The inferences are based on commonly shared consumption stereotypes. People are more likely to make food choices if the characteristics related to a particular food are consistent with the person's own identity and avoid choosing a food with inconsistent characteristics. Appealing and unappealing stereotypical social images associated with sustainable diets may promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves.

Although social norms are identified as one of the factors for food choice (Renner et al., 2012) and they strongly influence human behaviour even without conscious awareness, they are not considered among the most important ones. However, sustainable food choices differ from other food choices as the interests of the individual and the society may be at odds with each other (McDonald et al., 2014). This raises a question of importance of social norms compared to other food choice motives in driving actual and intended sustainable food choice.

Social norms are often classified into descriptive and injunctive norms following the focus theory of normative conduct (Cialdini et al., 1990).

Moreover, according with Lapinski and Rimal (2005, see also Rimal & Lapinski, 2015) social norms may also be described as collective and perceived. Descriptive norms are defined as an individual's perceptions about the prevalence of a behaviour while injunctive norms are the perceived pressures to conform to certain norms (Lapinski & Rimal, 2005). Perceived norms may differ from the actual social norms. Although they may be misperceived, they may still be effective.

Descriptive and injunctive social norms function differently depending on the individuals' decision-making processes. 'Dual-system' (or 'dual-process') theories present two processes; an automatic and fast System 1, and a rule-based System 2, which requires more cognitive resources (Stanovich & West, 2000; Kahneman, 2011). Descriptive norms, used as shortcuts to make accurate decisions in a specific situation by following how most people typically behave (Cialdini et al., 1990), appear salient in a fast, context-related System 1 -type process. Injunctive norms, which represent what is commonly approved or disapproved behaviour across different contexts, are salient in an analytic System 2 -type process (Ohtomo & Hirose, 2007).

According to the focus theory of normative conduct, social norms should be made salient through norm activation with situational cues so that they can be recognised, followed, and thus have an impact (Cialdini et al., 1990; 1991). In order for the norms to be activated, the model of social norm activation (Bicchieri, 2006) posits three requirements to be filled: 1) contingency condition (the consumer believes that a norm exists and applies to the situation); 2) empirical expectations condition (the consumer believes that a sufficiently large subset of people conforms to the norm in similar situations); and 3) normative expectations condition (the consumer believes that a sufficiently large subset of people expects conformance to the norm in similar situations) (Blay et al., 2018).

Activation of the social norms is conducted by manipulating situational cues as tools. However, the interpretations of situational cues, as well as how strongly one is willing to conform to the norms, depend on the personal characteristics of the individual. Moreover, as noted earlier, sustainability is a multifaceted concept in which a number of different underlying sustainability issues may relate to a particular behaviour. Thus, the impact on behaviour through activating sustainability-related social norms may vary depending on whether norms are activated individually or in combination.

The main aim of this dissertation is to increase understanding of how social influence impacts the sustainability of food choice. Below I relate each of the articles to this main aim and to Figure 3.

Article I

Title: Tell me what you eat and I will tell you what you are: How the social images of food consumption stereotypes may promote or hinder sustainable food choices. (Salmivaara & Lankoski, 2020).

The first study of the dissertation, Article I, is depicted on the left in Figure 3. The aim of this study was to investigate how diverse consumption stereotypes may promote or hinder the sustainability of food choices. By identifying characteristics based on different consumption stereotypes and categorising them by their social appeal, it is possible to gain a more nuanced understanding of how social images may affect diet choices for those consumers who want to give a positive picture of themselves to others. The theoretical background of this study builds on impression management (e.g. Leary et al., 2011; Vartanian, 2015), with the central concepts of consumption stereotypes and social image (Herman et al., 2019).

Research question: What kinds of consumption stereotypes tend to be associated with various more sustainable and less sustainable diet choices, and how may these stereotypical inferences promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves?

Article II

Title: The importance of descriptive and injunctive social norms relative to other motives for sustainable food choice. (Salmivaara, Lombardini & Lankoski, 2020).

The second study, Article II, corresponds to the middle part of Figure 3. It examines how perceived descriptive and injunctive social norms affect actual and intended sustainable food choice among other food choice motives. To investigate the impact of social norms in a more nuanced way, the separate impact of both descriptive and injunctive norms was investigated. The theoretical background was based on the focus theory of normative conduct (Cialdini et al., 1990; 1991) and dual-process theories, System 1 and 2 (Stanovich & West, 2000; Kahneman, 2011).

Research question: What is the relative importance of perceived social norms compared to other food choice motives in driving actual and intended sustainable food choice?

The study contains three hypotheses established based on previous studies on social norms (e.g. Cialdini et al., 1990; Lapinski & Rimal, 2005), and food choice motives (e.g. Renner et al., 2012):

H1: Perceived descriptive and injunctive social norms do have an impact on actual food choice but are nevertheless among the weakest food choice motives.

H2: In the case of a fast, repeated food choice situation requiring little cognitive effort, the role of perceived descriptive norms is stronger than that of perceived injunctive norms.

H3: The role of injunctive norms is stronger in the case of intended future choice compared to that of actual choice.

Article III

Title: Promoting sustainable consumer behaviour through the activation of injunctive social norms: A field experiment in 19 workplace restaurants (Salmivaara & Lankoski, 2019).

The third study, Article III, is represented on the right side of Figure 3. The study examines how different sustainability-related injunctive norms affect food choice when they are activated individually and in combination. Article III stems from the same theoretical tradition as Article II, the focus theory of normative conduct (Cialdini et al., 1990; 1991) with the addition of the model of social norm activation (Bicchieri, 2006).

Research question: How do different sustainability-related injunctive social norms impact food choice when they are activated individually and in combination?

The hypotheses, derived from previous studies on social norms (e.g. Cialdini et al., 1990), activation of social norms with environmental cues (e.g., Mollen et al., 2013; Nolan et al., 2008; Schultz, 1999; Stöckli et al., 2016), and joint activation of social norms (e.g., Smith & Louis, 2008; McDonald et al., 2014; 2013) are as follows:

H1: Activating a pro-sustainability injunctive norm with a message increases the sustainability of the related behaviour compared with a situation without the norm activation.

H2: Activating a combination of pro-sustainability injunctive norms with a message increases the sustainability of the related behaviour more than the sum of the increases caused by the norms individually activated.

4 DATA AND METHODS

The previous chapter outlined the theoretical framework. This chapter continues by introducing the data and methods used in this study. The dissertation includes three articles which are founded on two separately collected data sets, one of which is qualitative and one quantitative. The data and methods employed in this study thus involve both quantitative and qualitative approaches.

Article I is based on the qualitative data set 1, whereas the quantitative data set 2 covers the articles II and III. Both data sets were collected in the Helsinki area in Finland during the years 2015 and 2016. The two types of data sets offer different angles to the research question at hand and therefore different perspectives to the findings as well.

The structure of this chapter is as follows: introduction of the qualitative data set 1 and a description of the analysis methods used for this data set, followed by the introduction of the quantitative data set 2, including the survey questionnaire, data collection procedures, and the methods used in the analyses.

4.1 THE QUALITATIVE DATA SET 1

The data set used in Article I consists of 22 interviews with undergraduate and graduate students of the University of Helsinki, Finland. The interviews were carried out between June and December 2015. The respondents were recruited by email, snowball sampling, and a written announcement in the student library. The semi-structured interviews were recorded, and they lasted about one hour each.

The data were collected using nine short texts describing hypothetical persons' diet choices (see Article I, Table 2). For example one, entitled "the basic vegetarian" by the respondents, included the following text: "The person eats vegetable-based food and in addition to vegetables uses a lot of tofu, cheese, and eggs. Of milk products they use also quark. They eat whole grain cereal products and often choose, for example, frozen soy patties and soy sausages, or ready-made meals such as vegetable pea soup and root vegetable patties."

The texts were constructed to be credible within the context of Finnish food culture. To build the descriptions, typical food items and food behaviours were identified. The most essential food items included milk/dairy products, meat, fish, bread, potatoes, and vegetables/fruits/berries (e.g. Helldán et al., 2014; see also Mäkelä & Rautavirta, 2018). Food behaviours identified included the use of ready-made meals (e.g. Kupiainen & Järvinen, 2009; Aalto & Peltoniemi, 2014), picking wild berries and mushrooms as well as fishing and

hunting (Mäkelä & Rautavirta, 2018). Different combinations of these elements were formed and written into realistic descriptions. The diet choice types were labelled only after the interviews based on the respondents' characterisations.

Sustainable food choice in this context encompassed broadly the sustainability of the diet as a whole. The texts were written to invoke both sustainable and non-sustainable features and the respondents could comment on them in their preferred order. Before the data collection, the texts were reviewed by researcher colleagues and the interview protocol was tested with pilot interviews.

The aim was to collect the interviewees' views on socially appealing or unappealing characterisations, derived from the views and opinions they may associate with the diet choices described in the texts. Moreover, the aim was to get the interviewees to explain their perceptions in their own words without setting any pre-defined suggestions.

Firstly, each respondent was given nine short texts to read. After reading, the respondent was asked about their perceptions about each fictional person described in each text. The interview included questions such as "What kind of person do you think could be behind the choices?". They were also asked to write down a few words about each diet choice type as well as explain their perceptions and interpretations verbally. It was emphasised to the interviewees that there were no right or wrong answers and that instead of solving a riddle of who is behind the choices, the aim of the data collection was to record the respondent's own views and perceptions.

Note, that the topic of sustainability was not explicitly brought up in the interview, so that the social desirability bias potentially associated with sustainability would not affect the responses. Once the interview was otherwise completed, however, the respondents were asked to make interpretations about the sustainability of the diet choice types. These interpretations were in line with the intended classifications by the authors (see Perceived sustainability in Article I, Table 2).

The background variables of each respondent, including age and faculty, were gathered in a form of a questionnaire at the end of each interview. (Descriptives of the data set 1 are presented in Article I, Table 1.)

4.2 DATA ANALYSIS OF DATA SET 1

The data were analysed using thematic analysis, which is a qualitative method used to identify, analyse and report themes within data (Braun & Clarke, 2006). The advantage of this method is its flexibility, as it can be used across a range of theoretical frameworks and research questions. It also allows the themes to be determined in a range of ways. (Braun & Clarke, 2006). The analysis of this study was conducted inductively so that themes were identified without any predetermination. The interviews were conducted and then

immediately transcribed verbatim. This facilitated the analysis, the review of the topic, and the recognition of when the saturation point was reached. The interviewees included 22 persons comprising of ten were males and twelve females.

Transcribed interview files were saved on the data management software program ATLAS.ti (version 6). ATLAS.ti is an analysis facilitating tool used to support a number of methodological or theoretical approaches (Jupp, 2006). Thematic coding followed the six phases described by Braun and Clarke (2006): 1) familiarising with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing the themes, 5) defining and naming themes, and 6) producing the report.

The first phase consisted of a thorough scrutinising of the data set several times during the process starting with transcribing and making notes for the initial coding. The second phase was to initially code all the characteristical expressions concerning the diet types in order to "identify and tentatively name the conceptual categories into which the phenomena observed will be grouped" (Hoepfl, 1997:55). The goal of creating descriptive, multi-dimensional categories forming a preliminary framework (Hoepfl, 1997) was reached. In the third phase, the codes were arranged into a thematical map with the coding carried out within the original context to ensure that possible euphemisms were correctly taken into account. In the fourth phase, the thematically arranged codes were reviewed to identify the main themes. Seven characteristics were identified alongside with their opposing traits in phase five. The traits were classified as socially appealing or unappealing. The sixth, reporting phase continued alongside the analysis, which also facilitated the examination of the thematic topics. As Braun and Clarke (2006) note, analysis is not a linear process which moves by undergoing the phases step by step, but a recursive process, where the research moves back and forth throughout the phases. These recursive aspects of the process were evident during the analysis and writing phase of this material. The data were analysed and categorized from multiple perspectives and through numerous recoding rounds. This was to ensure that the material was reviewed systematically.

4.3 THE QUANTITATIVE DATA SET 2

The data set 2 was collected in a field experiment underpinned by an intervention which was conducted in 19 workplace restaurants where a new sustainable dish was launched. The new dish, roach fish patties ("särkipihvit" in Finnish), were developed in a project of two organizations, John Nurminen Foundation (an NGO active in the protection of the Baltic Sea) and Palmia, the catering firm owned by the city of Helsinki. The developed new roach fish patties were served in Palmia lunch restaurants. The field experiment was conducted in collaboration with these two organisations.

The developing of roach fish patties was accomplished as a part of the Local Fish project ("Lähikalahanke" in Finnish) (John Nurminen Foundation, 2016) which had two objectives: 1) to promote the well-being of the severely eutrophicated Baltic Sea by removing excess nutrients from the marine ecosystem through the targeted fishing of roach (L. *Rutilus rutilus*) and 2) to increase the supply of ethical local food and the utilisation of roach fish for human consumption. Moreover, fishing roach also supports the livelihood of local fishermen. Consistent with the two objectives of the project, the roach fish patties incorporate the two sustainability elements of environmental friendliness and localness. Although local food is not necessarily and automatically sustainable (Forssell & Lankoski, 2015), the use of the concept in this manner is justified here since in this case it held true and these two elements were brought up by the collaborator as an important aspect of the project.

The data set 2 consists of a control group and three treatment groups. The data of the control group (N=348) was used in Article II and the whole data set (N=1289) in Article III. Although the data were collected using the same questionnaire, the articles II and III have different research frames and they vary in their analysis methods and in the questionnaire elements that they utilise. In this section, I describe the field experiment as well as the data collection before discussing the methods in each article in detail.

The data were collected with a survey questionnaire in 19 lunch restaurants in Helsinki, Finland. The field experiment took place in September 2016 on a day when the roach fish patties were served for the first time. The restaurants served the option of a fixed-price buffet with two main courses (on the experiment day: roach fish patties and meat lasagne), salads, bread, drinks, and desserts. In the restaurants, customers serve themselves from a buffet before being seated at a table.

In addition to providing the premises, the staff of the restaurants also participated in the study by ensuring that sufficient amounts of questionnaires and pencils were placed on tables before the opening of the restaurants, collecting the filled questionnaires, and by monitoring the data collection so that it was conducted in accordance with the given instructions. The completed surveys were collected the day after the experiment and the personnel were shortly debriefed. Five lunch vouchers and book prizes were drawn among

participants who chose to give their contact information on separate coupons. To retain the anonymity of the responses the contact information was collected separately from the questionnaires.

The restaurants were split into four groups using stratified randomisation among 22 Palmia restaurants[1]. Stratified randomisation was used to balance the amount of clients between the groups (for more details of the randomisation process, see Article II). The number of daily lunch customers of the Palmia restaurants ranges between 50 and 800, amounting to about 5000 lunches daily in total. The five restaurants in the control group (Article II) serve about 1200 lunches daily.

The treatment groups received manipulation of two separate injunctive social norm activations (Baltic Sea protection and local food) with messages. The message signs (size A5) were printed on yellow paper to increase their visibility. The three treatment groups were each presented with a different norm-activating message: promoting the Baltic Sea protection (Group B), promoting local food (Group C), and a combination of these two (Group D). The control group was presented only a sign without a norm-activating message (Group A).

The norm-activating messages (Figure 4 in their original Finnish language) were accompanied by a fish symbol and expressed as follows:

• Control Group A: "Roach fish patties"

• Treatment Group B: "Roach fish patties—A choice in favour of the Baltic Sea. By eating roach fish patties we reduce together the eutrophication of the Baltic Sea"

• Treatment Group C: "Roach fish patties—A choice in favour of local food. By eating roach fish patties we support together the use of an under-utilized raw material as local food"

• Treatment Group D: "Roach fish patties—A choice in favour of the Baltic Sea and local food. By eating roach fish patties we reduce together the eutrophication of the Baltic Sea and at the same time we support together the use of an under-utilized raw material as local food"

[1] The original plan included 22 restaurants, but three restaurants had to be excluded from the analysis, as it was found out after data collection that these restaurants did in fact not allow their customers to take both main dishes freely (buffet lunch) and therefore their profile was not comparable to the other restaurants.

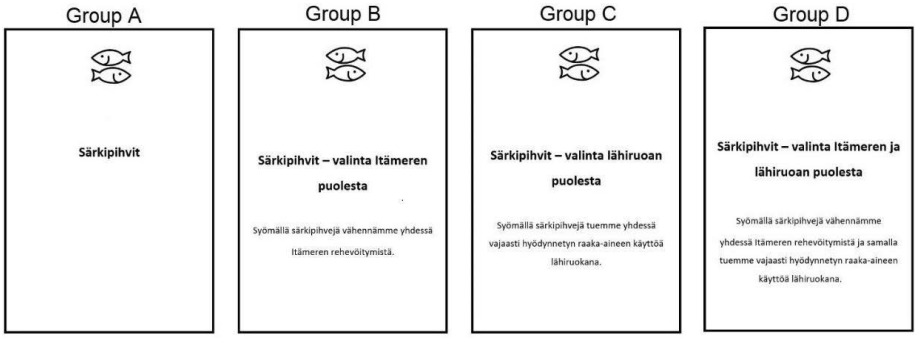

Figure 4 The norm-activating message signs.

There were two dependent variables used in the study, the reported actual and intended future choice. The reported actual choice was the response to the question of to which degree the roach fish patties were the respondents' primary choice. Intended future choice was the response to which degree the customers agreed that they would choose roach fish patties in the future, if available.

The independent variables measuring both descriptive and injunctive social norms were included in the questionnaire as separate items following the focus theory of normative conduct (Cialdini et al., 1990). The descriptive norm variable asked whether one believed other consumers would choose roach fish patties on that day. The injunctive norms measured two pro-environmental social norms: 1) whether people should eat environmentally friendly in general and 2) whether people should favour local food in general.

The independent variables also contained questions of food choice motives. The questionnaire was designed in part to follow The Eating Motivation Survey (TEMS) (Renner et al., 2012). Only the motives suitable for the structure of the research frame were included in the questionnaire, such as habit, seeking novelty, visual appeal, taste, health, ability to satiate hunger, trendiness, traditional eating and value for money. Some of the food choice motives were excluded from the original model as these were not considered suitable measures in this occasion. For example, convenience and sociability were excluded as the buffet dishes were equally conveniently available and the option to eat alone or with colleagues did not depend on the food choice. Weight control was included in health. The price motive was not measured directly but through the question of "value for money" as the price of the buffet was the same regardless of the dishes or the quantity chosen. Taste was left out when measuring the actual choice but included when measuring the intended choice as the dish had already been tasted at that point. In addition to these, the question of whether the respondent had seen the message sign and a follow-up question asking them to recite its key points were included. The correctness of the written responses (N=563) was evaluated with a

predetermined assessment matrix. All independent and dependent variables were measured on a 5-point Likert scale with 1 = "strongly disagree" and 5 = "strongly agree". Age, gender, and educational level of the respondents were collected as background socioeconomic variables.

The data was filtered out for those respondents who could not have chosen the roach fish patties because of allergies or special diets; those who could not have chosen the dish, or had to choose this particular dish because the restaurant temporarily ran out of another main course; as well as for those who did not choose a buffet lunch. For the control group, the response rate was calculated as 33.9 % and the filtered 348 responses covered 27.2 % of the daily lunch customers. For the whole data set, the overall response rate was 36 % and the filtered 1289 responses represented 29.3 % of buffet lunch customers.

The descriptives of Article II are detailed in Table 1. The respondents of the study consist of 24.7 % of males and 73.9 % of females aged between 21 and 78 years, with a median age of 51 years (SD = 11.30). As Table 1 shows, the data set 2 is not fully representative of the adult population of 21 years and older. Especially women (51.3 % of the Finnish population) and highly educated people (general population of 22.6 % with Bachelor's degree or higher) are overrepresented and there is no youngest cohort (young people under 21 years, 4.2 % of the adult population) at all (Official Statistics of Finland 2019a; Official Statistics of Finland 2019b). This may be due to the fact that the largest workplace restaurants were located in close proximity to municipal office buildings in which the majority of the workforce consists of females with a high level of education. This overrepresentation of higher educated people was in line with expectations as workplace restaurants tend to be used by highly educated people in the Helsinki area (Roos, Sarlio-Lähteenkorva, & Lallukka, 2004).

Table 1. *Descriptives of the data set used in Article II: Distribution of gender, age, and highest education level in the data sample and in the population of Finland*

		N	the data sample (%)	population of Finland (%)
Gender				
	Male	86	24.7	48.7 [a]
	Female	257	73.9	51.3 [a]
	missing values	5	1.4	
		348	100.0	100.0
Age in years				
	0-19	0	0.0	21.7[b]
	20-29	18	5.3	12.4 [b]
	30-39	60	17.2	12.8 [b]
	40-49	70	20.0	12.1 [b]
	50-59	120	34.1	13.4 [b]
	60-69	64	18.3	13.6 [b]
	70-	6	1.7	14.1 [b]
	missing values	10	3.4	
		348	100	100.1 [c]
Education				
	Primary school or equivalent	9	2.6	24.8[b]
	Vocational education or secondary school / secondary school graduate	113	32.4	52.6[b]
	Bachelor's Degree	99	28.4	11.8[b]
	Higher academic degree	100	28.7	9.8[b]
	Licentiate or doctoral degree	20	5.7	1.0[b]
	missing values	7	2.0	
	other, not specified			
		348	99,8[c]	100.0

[a] Official Statistics of Finland (2019a)

[b] Official Statistics of Finland (2019b)

[c] The total percentage figure of under/over 100% is due to rounding.

The descriptives of Article III are presented in Table 2. The respondents of the data set consist of 38.6 % of males and 60.2 % of females aged between 20 and 83 years, with a median age of 50 years (SD = 11,58). Likewise, as noted above regarding the control group, the whole data set 2 is not fully representative of the adult population of Finland (of 20 years and older). In the data set, women and those with higher levels of education (67 % having a Bachelor's degree or higher[2]) are overrepresented and the youngest cohort (people under 20, 2.7 % of the adult population) is missing. Although the restaurants were workplace

[2] In the printed Article III, the number of highly educated respondents is calculated based on the valid percentage.

restaurants, some of them were open to the members of the general public, so it was not controlled whether the respondents were in working life or not.

Table 2. *Descriptives of the data set used in Article III: distribution of gender, age, and highest education level in the data sample and in the population of Finland.*

		N	the data sample (%)	population of Finland (%)
Gender				
	Male	497	38.6	48.8[a]
	Female	776	60.2	51.2[a]
	missing values	16	1.2	
		1289	100.0	100.0
Age in years				
	0-19	0	0.0	21.7[b]
	20-29	108	8.4	12.4[b]
	30-39	243	18.9	12.8[b]
	40-49	277	21.5	12.1[b]
	50-59	432	33.5	13.4[b]
	60-69	189	14.7	13.6[b]
	70-	13	1.0	14.1[b]
	missing values	27	2.1	
		1289	100.0	100.1[c]
Education				
	Primary school or equivalent	33	2.6	24.7[b]
	Vocational education or secondary school / secondary school graduate	360	27.9	53.0[b]
	Bachelor's Degree	365	28.3	11.6[b]
	Higher academic degree	454	35.2	9.7[b]
	Licentiate or doctoral degree	45	3.5	1.0[b]
	other, not specified	2	0.2	
	missing values	30	2.3	
		1289	100.0	100.0

[a] Official Statistics of Finland (2019a)

[b] Official Statistics of Finland (2019b)

[c] The total percentage figure of over 100% is due to rounding.

4.4 DATA ANALYSIS OF DATA SET 2 FOR ARTICLE II

The analysis method for Article II consisted of binary logistic regression. The aim was to identify which food choice motives had the most powerful impact on the respondents' reported actual and intended future choice of roach fish patties. The actual choice was measured as the respondent's primary choice from the buffet lunch on the day when the experiment was conducted, and

their intended future choice was measured as the respondent's willingness to choose roach fish patties in the future.

Prior to the analysis, all categorical variables were transformed from a 5-point Likert scale into binary variables. The change was made because the interpretation of the odd ratios of binary logistic regression is clearer than the interpretation of ordinal logistic regression. Although it is possible to lose data in transforming categorical variables into binary ones, the change was considered justified as it helped to sharpen the results. The variables were categorised as follows: the answers 1 (Strongly disagree), 2 (Somewhat disagree), and 3 (Neither agree nor disagree), into "0" and the answers 4 (Somewhat agree) and 5 (Strongly agree), into "1". The first category of each binary variable was set as the reference.

The regression models for both dependent variables, the actual and intended choices, were estimated. The independent variables of food choice motives were the same in both models, except taste which was included only in the model estimating intended future choice. In the questionnaire, the questions regarding injunctive norms of favouring local food and eating more environmentally friendly were presented without any reference to roach fish patties. Thus, the respondents may have failed to identify the dish in question as the most local and environmentally friendly alternative out of the available dishes, or they may not have cared neither about localness of food nor environmental friendliness overall. Accordingly, to be able to identify these cases, the injunctive norms were contextualised into new variables. The logic behind the contextualisation was as follows: an individual who "Strongly agreed" or "Somewhat agreed" with the injunctive norm of environmental friendliness ("The general opinion is that people should eat more environmentally friendly") as well as "Roach fish patties are environmentally friendly", would be assigned the value 1 for this new variable and thus hold a contextualised injunctive norm for environmental friendliness. The value 0 was assigned to all other individuals. The contextualised injunctive norm for environmental friendliness would then be formed as: "The general opinion is that people should eat roach fish patties as they are environmentally friendly".

Likewise, an individual who "Strongly agreed" or "Somewhat agreed" to the injunctive norm of local food ("The general opinion is that people should favour local food more") as well as "Roach is local fish", would be assigned the value 1 and hold a contextualised injunctive norm for local food with the value 0 assigned to all other individuals. The contextualised injunctive norm for local food would then be formed as: "The general opinion is that people should favour roach fish patties as they are made of local fish".

The Hosmer–Lemeshow goodness-of-fit test and the likelihood ratio test were conducted to determine how well the above models fitted. The significance level was set at $p < 0.05$. All analyses were conducted using the SPSS Statistics for Windows, version 24 (IBM). Table 3 contains the descriptive statistics for the variables. Note that contextualised injunctive norms are titled as perceived injunctive norms.

Moreover, it is necessary to note at this point that in the analysis, both the descriptive and injunctive norms are examined as perceived social norms. In accordance with Lapinski and Rimal (2005) (as outlined in section 3.4), this study assumes that instead of being strictly measured, social norms are perceptions of what people think others do and consider as appropriate behaviour. Thus, in this study descriptive norms are defined as the individuals' perceptions about the prevalence of a behaviour and injunctive norms as perceived pressures to conform to certain norms. Hence, the term of social norm is used of perceived norms which may differ from the actual collective social norms.

Table 3. *Descriptive statistics for the variables of Article II (data set 2)*

	Name of variable*	**N Valid**	**Median**	**IQR**	**Item, translated from Finnish****
Dependent variables	Reported actual choice	348	3	4	Roach fish patties were my primary choice today
	Intended future choice	348	4	4	I am likely to choose roach fish patties in the future if they are available
Independent variables	Habit	348	4	1	If there is a fish dish served at the workplace restaurant, I usually choose it
	Novelty seeking	346	4	1	I like to taste new dishes
	Visually appealing	344	3	1	Roach fish patties looked delicious in the buffet
	Tasty	246	4	4	Roach fish patties tasted good
	Healthy	345	4	1	Roach fish patties are healthy
	Satiating	341	4	2	Roach fish patties do not leave you hungry
	Trendy	340	3	1	Roach fish patties are a trendy food
	Finnish traditional	345	4	1	Roach fish patties are part of the Finnish food tradition
	Value for money	343	4	1	Roach fish patties are good value for money at lunch
	Perceived descriptive norm	347	3	1	I believe that today many of the lunch customers choose roach fish patties
	Perceived injunctive norm (eating environmentally friendly)***	343	4	1	The general opinion is that people should eat more environmentally friendly
		343	4	2	Roach fish patties are environmentally friendly
	Perceived injunctive norm (favouring local food)***	342	5	1	The general opinion is that people should favour local food more
		342	4	1	Roach is a local fish

*Coding into dummy variable from Likert so that 1-3 is coded into 0 and 4-5 is coded into 1
**Likert 1= Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree
***Formed from two items as explained in Section 4.4.

4.5 DATA ANALYSIS OF DATA SET 2 FOR ARTICLE III

The data set 2 was used as the basis for two articles but the foci of these studies were different. Article II examined the impact of social norms in relation to other food choice motives, whereas the aim of Article III was to investigate the impact of manipulated injunctive norms on sustainable food choice. The manipulation of injunctive norms in the field experiment and the norm-activating message signs are discussed in more detail earlier in section 4.3.

The dependent variable used in Article III was reported actual choice. It was measured as the respondent's primary choice from the buffet lunch. The design of the study was cluster randomised, 2 × 2 factorial, between-subjects experiment. However, the design of this study caused some complications to the choice of statistical analyses. Firstly, the data was potentially unbalanced since the response rates varied between restaurants and the number of customers who actually noticed and read the activating messages varied as well. Secondly, the study design was cluster randomised. Randomisation was done at the restaurant level while the behaviour of interest occurred at the individual level. The cluster randomised designs are desirable when the intervention (in this study the norm-activation messages) cannot be administered only to some of the individuals within a group, but they create a potential source of intraclass correlation and lead to a multilevel structure in the data (e.g., Murray, Varnell, & Blitstein, 2004). This is an important consideration when choosing an analysis method. While there is no existing method which could simultaneously handle the features of this research design, cluster randomisation must be considered first when deciding the appropriate methods. Ignoring the clusters and treating all data as one large group of observations would ignore the correlation within restaurants and result in false positives (Picquelle & Mier, 2011). A nested analysis of variance (ANOVA) is a model which takes into account the hierarchical data structure. The two-level ANOVA was used to examine firstly the significance of the impact of the treatment on food choices and secondly, if there was an impact, what share of the variation is caused by the treatment. The Satterthwaite approximation was used for more accurate p values for unbalanced data (McDonald, 2014:170).

The two-level ANOVA test was performed using a spreadsheet-based instrument developed and provided by McDonald (2014) as the analysis was not provided by SPSS Statistic Version 24 (IBM), the principal tool for other statistical analyses of this particular study. Justifications to use of ANOVA with nonnormal Likert scale in this study are explained with more detail in Article III.

There were two sets of analyses: "intention-to-treat" and "as-treated". The respondents were asked whether they had seen the message signs at the lunch buffet. "Intention-to-treat"-analyses were run with full samples and "as-treated" -analyses with those respondents who had seen the norm-activation message sign and recalled it correctly. The former analysis captures the effects

of undertaking a policy (the catering firm putting up injunctive norm message signs about roach fish patties) and the latter captures the impact of a treatment on those who actually did receive it. However, to run the analysis on those who had seen the message and recalled it correctly, the number of observations in each subgroup became too small for statistical methods. Therefore, Qualitative Comparative Analysis (QCA) was used as a complementary analysis method to examine how the impact of the treatment differed between smaller subgroups in the population.

QCA is a method used to examine conditions that are necessary or sufficient for an outcome based on Boolean logic (Ragin, 1987; Rihoux & Ragin, 2009; Schneider & Wagemann, 2012). Compared with statistical methods, QCA can identify multiple pathways to the same outcome (in this study: choosing roach fish patties as the primary lunch choice) and allows different explanations and associations to its occurrence or non-occurrence. The associations of the outcome may be presented as a range of ”recipes” where the conditions are examined in combinations instead of isolation (Misangyi et al., 2017; Schneider & Wagemann, 2012). In QCA, unbalanced, non-normal data can be used, and Likert scores can be adapted especially with the fuzzy-set version of QCA (fsQCA) used in this study (Emmenegger, Schraff, & Walter, 2014).

4.6 THE VALIDITY AND RELIABILITY OF THE RESEARCH

In this section, I will address issues concerning validity and reliability and how these criteria are fulfilled in this dissertation. As this study consists of studies where both qualitative and quantitative paradigms are present, the validity and reliability of both research aspects are evaluated. Validity and reliability measure both the results and the rigour of research (Heale & Twycross, 2015). According to Hoepfl (1997:48), a researcher in a qualitative paradigm seeks “illumination, understanding, and extrapolation to similar situations” whereas a researcher in the quantitative paradigm seeks “causal determination, prediction, and generalization of findings”. The analyses of both qualitative and quantitative approaches result in different types of knowledge (Hoepfl, 1997) and therefore the criteria of validity and reliability are not applicable to both paradigms in the same way. Nevertheless, validity and reliability are factors that should always be taken into account in both quantitative and qualitative paradigms, although they are assessed differently.

The use of validity and reliability are rooted in the quantitative research paradigm. Validity refers to the evaluation of whether the results are accurately measured while reliability refers to the accuracy of the used measurement technique or strategy (e.g. Heale & Twycross, 2015). These terms are redefined in qualitative research. In quantitative research validity is divided into internal and external validity, whereas in qualitative research its

criteria consist of credibility and transferability (Hoepfl, 1997). Although there are corresponding terms equal to validity and reliability in the qualitative research paradigm (e.g. Golafshani, 2003), for the sake of clarity I shall use the original terms when discussing both paradigms.

As specified by the Finnish Advisory Board on Research Integrity, the designs of the articles were such that there was no requirement for an ethical pre-review.

4.6.1 QUALITATIVE STUDY

The terms reliability and validity are treated separately in quantitative studies, but they are not viewed separately in qualitative research (Golafshani, 2003). According to Patton (1990:461), validity of qualitative research depends on three elements: 1) techniques and methods used to ensure the integrity, validity, and accuracy of the findings, 2) researcher's qualifications, experience and perspective, and 3) paradigm orientations and assumptions. Patton (1990:461) emphasises that credibility is especially dependent on the researcher as "the researcher is the instrument of data collection and the centre of the analytic process." In the following section, I shall discuss some of the main actions in relation to the validity of the research.

The semi-structured interviews were chosen as the method of data collection as interviewing is a way to find out issues, such as meanings, from the other person's inner perspective (Patton, 1990:278). The sample consisted of students, and although young people may be particularly susceptible to social influence, this may weaken the transferability of the findings. The interviews of Article I were conducted within a few months and with the same semi-structured interview protocol. Conducting 22 interviews also contributed to the formation of a similar interviewing routine.

In Article I, the intention was to gather impressions from the interviewees in as much depth as possible. The subject of the interview was food and there was no requirement for any previous knowledge on the part of the interviewee. To avoid social desirability bias, meaning the respondents' tendency to answer emphasising the imagined aim of the interviewer (Jupp, 2006), the sustainability issue was not mentioned until the end of the interviews unless the respondents mentioned it first. The aim was also to refrain from directing the respondents' emphasis to any of the social, economic or environmental factors of sustainability. As social desirability bias often weakens the validity of the research, especially when topics include ethical aspects (e.g. Randall & Fernandes, 1991), by basing the interviews on the short texts describing diet choices the interviewees were steered to talk about diet choices of others rather than their own. Although the presence of social desirability bias is possible, it is less likely to have strongly affected this case. To further increase credibility, direct quotations from the interviewees supporting the findings are presented in Article I.

Validity can be enhanced through triangulation which combines methodologies in the study of the same phenomena (Patton, 1990:187). Thus, the use of versatile methods and data is considered to increase general validity and reliability of a study. To avoid vulnerability, which may be caused by using only one particular method, triangulation may be achieved by combining different kinds of qualitative methods and perspectives (ibid.). Triangulation is ideal, but it may become very expensive and its practicality is largely determined by the time frame (Patton, 1990:187). Triangulation as such was not carried out in this study due to resource constraints. In Article I, the interviewees explained their impressions and views on the people behind the described diet choices as well as the likeability of the imaginary persons. One option alongside interviews could have been to collect open-ended data using a qualitative inquiry. However, there are certain limitations to the use of this method. Although writing skills may not have been a limitation in this particular case as the interviewees were all university students, the impossibility of extending responses and the effort required of the person completing the questionnaire (Patton, 1990:24) could have made it difficult to obtain the depth of the data to be analysed.

Yet, internal validity can also be increased by asking the respondents of a study to validate the findings (Beuving & Vries, 2015: 44). In the current study, asking the respondents to corroborate the findings was not done for two reasons. Firstly, the aim of Article I was to illustrate consumption stereotypes which were based on intuitive first impressions without thorough considerations and reasons leading to those conclusions. Secondly, the different phases of analysis were conducted over a three-year period and possible changes of attitudes and recent public discussion about sustainable food choices may have impacted the "correctness" of the responses in the eyes of the respondents.

As Patton (1990:14) pronounces, "in qualitative inquiry the researcher is the instrument". The qualitative data may be long, include details and the content may vary. The analysis is more complex compared to quantitative measures as the responses are not systematic or standardised (Patton, 1990). As the instrument, I aimed to distance myself from the data and change perspectives during the process and continued to discuss the thematic analysis with my co-author to obtain additional perspectives.

4.6.2 QUANTITATIVE STUDIES

The concept of validity in the traditional positivist (quantitative) approach considers whether the measuring instruments are accurate and whether they are measuring what they intend to measure. Validity has two dimensions, internal and external (e.g. Roe & Just, 2009) of which the internal validity refers to integrating measurements. It also points to the structure of the study and whether a researcher is able to argue that the observed correlations are

causal (Roe & Just, 2009). External validity refers to whether the findings of the study can be generalised in different settings (e.g. Hammersley, 2008). Issues related to the internal validity of the quantitative studies, namely the articles II and III, are explored first, following the evaluation of the external validity and reliability.

Content validity is a type of internal validity, which refers to the extent to which an instrument adequately covers the content of the domain related to the construct it was designed to measure (Heale & Twycross, 2015). In this study, content validity relates to the key concepts of social norms and food choice motives. As has been noted earlier in this study, people may not always be entirely aware of what impacts their food choices and may follow social norms without conscious awareness. Hence, the study subjects were asked about their food choice motives indirectly through what they had chosen and how they perceived the dish which resulted as correlating findings. In terms of social norms, this study asked respondents' perceptions of the norms, not their actual validity.

The measurement of the study included items in accordance with The Eating Motivation Survey (TEMS) (Renner et al., 2012), which has been a basis for previous research (e.g. Vainio et al., 2016; Phan & Chambers, 2016). Only the measures of TEMS which were deemed suitable for this study were included in the questionnaire (as detailed in section 4.3) and the order of the questions was carefully considered to increase the accuracy of measurements. Although it was impossible to control whether the participants filled the questionnaires in the numerical order as intended, to increase internal validity, the questions were arranged in a way in which the social norms of sustainable eating were positioned last.

In cluster randomised trials for evaluating interventions, where groups or clusters of individuals are randomised, such as in Article III of this dissertation, internal validity refers to the extent to which differences between randomised groups are a result of the intervention being tested (Eldridge, Ashby, Bennett, Wakelin & Feder, 2008). However, the internal validity in randomised trials depends on the research design, conduct, analysis and the sufficient sample size in order for the differences of the intervention between the groups to be detected (ibid.). In this study, the sample sizes of the clusters should have been larger for the magnitude of the phenomenon to be detectable by statistical methods.

External validity of the study is linked to generalisation or transference of the findings to another context, also called as “transferability” (Hoepfl, 1997). The validity thus depends on the similarities between the original situation and the situation to which it is transferred. However, making generalisations may involve a trade-off between internal and external validity and to be able to make generalisable statements that apply to many contexts, one may have to sacrifice more natural conditions (Roe & Just, 2009). External validity tends to be weaker in studies conducted in controlled environments, such as in laboratories (e.g., Delmas & Aragon-Correa, 2016), where disturbing factors

can be minimised and the researcher has control over almost every aspect of the context (Roe & Just, 2009). By contrast, external validity is stronger in uncontrolled but realistic field experiment environments. Moreover, Roe and Just (2009) argue that field data has a lower burden for establishing external validity as meaning in at least one relevant context has already been established.

In turn, studies conducted in laboratories provide high internal validity (Lieberman, Morales & Amir, 2019). However, conducting studies concerning social norms in eating situations in laboratories has been subject to criticism (Robinson, 2015). The choice situation in a laboratory setting is abnormal, and it can increase uncertainty as the respondents often tend to behave in a way they think researchers wish them to behave, resulting in social desirability bias.

In quantitative research, reliability is linked to the consistency of a measure and thus replicability of the results (e.g. Heale & Twycross, 2015). This means that, with a stable measure, the results should be similar each time the test is repeated. However, there are some extraneous influences, such as respondent's attitude towards the subject to be investigated or other characteristics, not dependent on the internal consistency of the usage of the instrument which may prevent retesting the results. Measurement errors may occur, if these extraneous influences change. The data set 2 used in the articles II and III was collected in 19 workplace restaurants at the time when a novel sustainable dish was launched, therefore, it may not possible to repeat the measurements due to the uniqueness of the moment of intervention. These unique real-life circumstances, however, are regarded as strengths of the articles II and III and increasing the internal validity.

5 FINDINGS

This chapter discusses the empirical results of the three articles of this dissertation highlighting the key findings. All the results in closer detail are found in the attached articles.

5.1 SOCIAL IMAGES OF FOOD CONSUMPTION STEREOTYPES

Article I (Salmivaara & Lankoski, 2020) contributes to the discussion of sustainable food choices by shedding light on how social images related to different diets are perceived and how these may promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves. This was examined by identifying how an audience perceived gender stereotypes and socially appealing and unappealing stereotypical characteristics that are associated with various more sustainable and less sustainable diet choices.

In accordance with previous studies (e.g. Ruby & Heine, 2011; Mooney & Lorenz, 1997; Shin & Mattila, 2019), the persons behind the more sustainable diet choices were generally perceived as female, with one exception, 'the dumpster diver'. Persons with less sustainable diets were generally perceived as male. There were also more sustainable diet choice types which were not associated with either gender. This may indicate that organic and plant-based diets have become commonplace among university students.

Using thematic analysis, seven main stereotypical characteristics associated with food choices were identified: 'competence', 'appreciation', 'awareness of environment', 'awareness of health', 'flexibility', 'principledness', and 'attitude towards effort'. Each of the characteristics had two opposing traits which were perceived as either socially appealing or unappealing (in respective order): knowledgeable/misinformed, appreciating food/indifferent towards food, aware of environment/ignorant of environment, aware of health/ignorant of health, flexible/inflexible, principled/unprincipled, and willing to make an effort/convenience-seeking. (See Article I for descriptions in closer detail.) In this study, "social appeal" reflects the likeability of the person making the choice and willingness to interact with that person (Vartanian et al., 2007), as it emerged in the statements made by the respondents.

Feedback from others affects diet choices of individuals and sustainability of the diets. Thus, sustainable food choices may be promoted if the more sustainable diets are associated with appealing stereotypical traits (e.g. appreciating food) and/or the less sustainable diets with unappealing stereotypical traits (e.g. indifferent towards food). By contrast, sustainable

food choices may be hindered if the less sustainable diets are associated with appealing stereotypical traits (e.g. knowledgeable) and/or the more sustainable diets with unappealing stereotypical traits (e.g. misinformed). In a similar manner, sustainable food choices may be promoted if the gender stereotype associated with the more sustainable diets is congruent with the gender identity of the individual making the food choice and hindered if these are incongruent.

The results concerning gender stereotypes are presented in table 4. Grey cells indicate cases where the stereotypical gender supports sustainable or hinders non-sustainable food choices (by more sustainable choices being gender-congruent or less sustainable choices being gender-incongruent). Black cells denote cases where stereotypical gender hinders sustainable or supports non-sustainable food choices (by more sustainable choices being gender-incongruent or less sustainable choices being gender-congruent). White cells indicate cases where no stereotypical gender emerged either because stereotypical gender did not come up at all, or because the respondents clearly expressed their perceptions of both genders.

Table 4. *Perceived genders of the diet choice types.*

Diet choice type		**Gender as perceived by females**	**Gender as perceived by males**
More sustainable	The local foodist		
	The vegan	female	female
	The dumpster diver	male	male
	The basic vegetarian		
	The trendy eater	female	
	The organic person	female	
Less sustainable	The basic Finnish consumer		male
	The ready-meal person		
	The hedonist	male	male

The occurrence of the traits in more sustainable and less sustainable diet choices are presented in Table 5. Grey cells indicate cases where the stereotypical trait supports more sustainable or hinders less sustainable food choices and black cells cases where it hinders more sustainable or supports less sustainable food choices for people wanting to portray a socially appealing image of themselves. White cells indicate cases where no stereotypical trait emerged. This was either because a particular characteristic did not come up at all, or because the respondents clearly expressed their perceptions of the opposite traits.

Table 5. *Manifestation of traits in association with diet choice types.*

			Characteristics						
			Competence	Appreciation	Environmental awareness	Health awareness	Principledness	Flexibility	Attitude towards effort
Diet choice types	More sustainable	The local foodist		Appreciating food	Aware of environment		Principled		Willing to make effort
		The vegan			Aware of environment	Aware of health	Principled	Inflexible	
		The dumpster diver	Knowledgeable		Aware of environment		Principled	Flexible	Willing to make effort
		The basic vegetarian			Aware of environment	Aware of health		Flexible	Convenience-seeking
		The trendy eater	Misinformed			Aware of health	Principled		
		The organic person	Misinformed		Aware of environment		Principled	Inflexible	
	Less sustainable	The basic Finnish consumer	Knowledgeable	Indifferent towards food					
		The ready-meal person		Indifferent towards food					Convenience-seeking
		The hedonist	Knowledgeable	Appreciating food					

'Competence' seems somewhat problematic in terms of its impact on sustainable food choices. Being knowledgeable appeared among both the more sustainable and the less sustainable diet choice types. By contrast, the more sustainable diet choice types, 'the trendy eater' and 'the organic person', were perceived as misinformed.

Similar complexity appears with 'Appreciation', as appreciating food appeared in the more sustainable 'the local foodist' and the less sustainable 'the hedonist'. The opposite trait, being indifferent towards food, was associated only with less sustainable diet choice types. Nevertheless, these two diet choice types, 'the local foodist' and 'the hedonist', differed in their perceived approach to the environment. The characteristics of 'environmental awareness' and 'health awareness' were associated only with the more sustainable diet choices. In this particular study, the lack of 'environmental awareness' resulted in a selfish and unappealing social image.

'Principledness' seemed to be a somewhat important characteristic in more sustainable diet choices as well as 'flexibility'. Although eating in accordance with an ideology was appealing, being principled invoked unappealing reactions when occurring together with inflexible. 'The vegan', described as "socially difficult" also in previous literature (Ruby, 2012), was perceived as both principled and inflexible. The same traits were associated with 'the organic person', as it was underlined that this person was choosing organic in every occasion. In contrast to 'the vegan' and 'the organic person', who were seen as socially unappealing, 'the basic vegetarian' and 'the dumpster diver'

were perceived as appealing. Although they all shared the trait of being principled, the two latter diets were seen as flexible.

Despite the fact that the respondents agreed that some of the diet choices seemed burdensome, convenience-seeking was not seen to be an appealing trait. In other words, the respondents seemed to appreciate effort but frowned upon those who try to get by with minimum effort.

In general, the findings of the study indicate that the gender stereotypes associated with food choices tend to encourage sustainable food choices for women and non-sustainable choices amongst men. Nevertheless, in terms of more sustainable diet choices, for men the associations towards gender were neutral, with the exception of 'the vegan'.

In terms of characteristics and their opposing stereotypical traits, generally the traits tended to support sustainable food choices. However, there are few exceptions, namely the characteristics of 'flexibility' and 'competence'. In the case of the former, the social appeal spoke against certain more sustainable diet choice types ('the vegan', 'the organic person'). In the latter, the social appeal acted in favour of certain less sustainable diet choice types ('the basic Finnish consumer', 'the hedonist') and against the more sustainable diet choice types 'the trendy eater' and 'the organic person'. In addition, 'the hedonist' was associated with the socially appealing stereotypical trait of appreciating food. 'The basic vegetarian' was characterised as convenience-seeking. This can probably be attributed to the fact that in this study design, the respondents automatically contrasted it with 'the vegan'.

The social images of the various food choices are created by a combination of several characteristics of which different ones may be pronounced, depending on the situation in which the choice is made. Several more sustainable diet choice types in this study were associated with at least one socially unappealing trait. Consequently, the overall social image of a diet may depend on how relatively important a particular trait is.

The findings of this study contribute to a more nuanced understanding of social influences, particularly the social images of food consumption stereotypes, and how these may relate to the sustainability of food choices for people wanting to portray a socially appealing image of themselves.

5.2 THE IMPORTANCE OF SOCIAL NORMS AS FOOD CHOICE MOTIVES

Article II (Salmivaara, Lombardini & Lankoski, 2020) addressed the relative importance of social norms among other food choice motives. The binary logistic regression models were estimated for the reported actual choice and intended future choice of roach fish patties as a lunch option.

The study consisted of three hypotheses based on the previous literature. The first was that the perceived descriptive and injunctive norms would have an impact on the actual food choice, but they would be among the weakest food

choice motives. The first hypothesis was partially supported because it was valid only for the descriptive norm, but not for the injunctive norm. The results showed that there was no impact of injunctive norms either on the actual choice or the intended future choice. However, a statistically significant impact of the descriptive norm was found in both models. The consumers who agreed with the descriptive norm statement that many of the lunch customers choose roach fish patties that day were almost three times more likely to choose roach fish patties as their primary choice.

The second hypothesis was that in a fast, repeated choice situation, which requires little cognitive effort, the role of the descriptive norms would be stronger than that of the perceived injunctive norms. The second hypothesis was fully supported. The descriptive norm was found to be one of the most effective predictors of choosing roach fish patties as a primary choice. Other significantly impacting motives were the habit of choosing fish, consideration of the roach patties as visually appealing, good value for money, and patties' ability to satiate hunger well.

The third hypothesis was that the role of injunctive norms would be stronger in the case of intended future choice compared to that of actual choice. The third hypothesis was not supported. For the intended future choice, the taste was the dominating motive: those who agreed that the roach fish patties were tasty were roughly nine times more likely to claim that they would choose patties again in the future. Likewise, habit, visual appeal, and health were strong food choice motives for an intended future choice, whereas injunctive norms were not.

The results of the study demonstrate that the influence of a perceived descriptive norm is statistically significant although the strength of association is stronger for other motives. In contrast to the perceived descriptive norm, perceived injunctive social norms did not appear to be significant predictors of sustainable food choices. Possible explanations for the strong impact of the descriptive norm, which varied between the models, may lay within the impact of visceral factors and the context in which choices were made. When hungry, the roach fish patties' ability to satiate hunger was a significant motive for the actual choice but was no longer important for a future choice. Thus, the decreasing impact of visceral factors may have caused the relative importance of the descriptive norm to increase. Moreover, because in a workplace restaurant setting, food choices are made publicly and often among one's reference groups such as colleagues, the context may have reinforced the impact of the norm. This may indicate that the perceived descriptive norms of an environmentally friendly behaviour may have a stronger impact on the intended future choice than previously known and, if well-designed and targeted, may serve as a promising tool for steering consumers' food choices towards sustainability.

The findings of Article II contribute to the discussion of sustainable food choice motives and the perhaps untapped possibilities of descriptive social

norms. They also emphasise the importance of situational characteristics and nuances around social norms as a subject of study.

5.3 THE ACTIVATION OF MULTIPLE INJUNCTIVE SOCIAL NORMS

Article III of the dissertation (Salmivaara & Lankoski, 2019) examined the activation of single and multiple sustainability-related injunctive social norms and how they impact on the choice of a new sustainable dish, roach fish patties, in lunch restaurants.

The study tested two hypotheses: the first presumed that activating one pro-sustainability injunctive norm with a message would increase the sustainability of the related behaviour in comparison with a situation without the norm activation. The second hypothesis predicted that activating a combination of injunctive norms with a message would increase the sustainability of the related behaviour more than the combined impact of the individually activated norms.

The analyses were conducted on two levels: on the intention-to-treat level for the entire sample and on the as-treated level for those who actually saw the message signs and recalled it correctly. The activation of the injunctive social norms was not found to have an impact on the lunch customers in general, regardless of the message of the sign, i.e. whether these were activated as one norm or a combination of norms. Thus, both hypotheses were rejected on both levels.

However, although the results showed that the injunctive norms had no overall effect, it was also established that their effect was not completely absent. As the first key finding, there were indications that the message signs had impacted smaller subgroups. Complementary and exploratory analyses were conducted with fsQCA among the "treated" respondents, who noticed the message and could recall the main contents correctly. (See Article III for complementary analyses and findings in closer detail.)

The smaller subgroups can be influenced by a certain norm activation and its impact may be explained by the individual social norm sensitivity. The subgroups were characterised by differences in their fish-eating habits, willingness to try new dishes, age and education. The subgroups which may have been incited to conform to the norm and choose roach fish patties as their primary choice by the injunctive norm messages in a lunch buffet were the young males who saw the message signs of local food and the educated older females who saw the message signs of both Baltic Sea protection and local food. The habit of choosing fish and the willingness to try new dishes were necessary conditions for both subgroups.

Another key finding was that the multiple injunctive norm of Baltic Sea protection and local food was found to have an impact on the food choice. As can be seen in Figure 5, the message of Baltic Sea protection (Group B) alone

did not increase the consistency figures compared to the control group (Group A) whereas the message of local food (Group C) did. In light of these findings, the first hypothesis of this study, which was mentioned earlier in the beginning of this section, would have been rejected in the case of Baltic Sea protection and supported in the case of local food. When the messages about Baltic Sea and local food were presented together (Group D), the norm activation showed a greater impact than that of the separate norms combined, suggesting positive causal interaction between the norms.

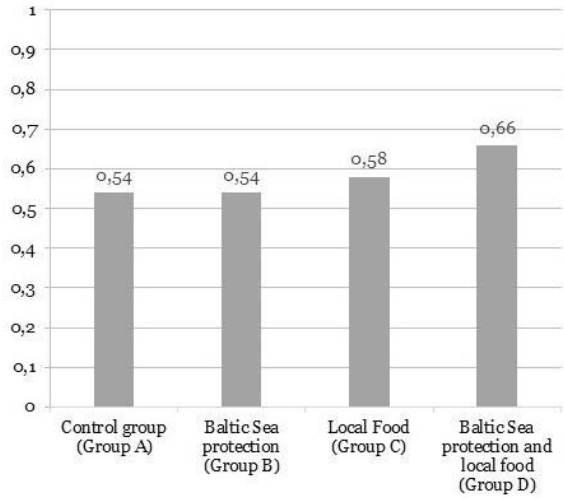

Figure 5 Results of subset/superset analyses for respondents able to recall the message signs correctly (N=237); consistency values for the outcome "Choice of roach fish patties" for the different combinations of the conditions "Baltic Sea protection" and "Local food" in each control/treatment group.

The results of Article III contribute to the activating and use of multiple injunctive norms in a sustainable food choice context. In addition, it contributes by reporting a field experiment and provides valuable information on real-life studies outside laboratories. Although putting up injunctive norm messages may be seen as a simple and low-cost way to promote sustainable choices, it is rather ineffective. The results support the previous findings of the limited impact of an injunctive norm in a fast, likely routine lunch choice situation in a larger population. The findings of an impact on smaller subgroups emphasise that the use of injunctive norms to promote food choices requires a thorough understanding of the intended audience, which the norms aim to influence, and the ways of activating the existing norms. Moreover, before setting up a norm activation, the possible barriers preventing the impact of the activation should be investigated first.

5.4 SUMMARY OF THE ARTICLES AND FINDINGS

In the previous section, I detailed the key findings of the three articles. This section summarises the articles in Table 6. I also present a synthesis of the findings and the contribution of the totality of the dissertation.

Table 6. *Summary of articles and findings*

	Article I	Article II	Article III
Title	Tell me what you eat and I will tell you what you are: How the social images of food consumption stereotypes may promote or hinder sustainable food choices	The importance of descriptive and injunctive social norms relative to other motives for sustainable food choice	Promoting sustainable consumer behaviour through the activation of injunctive social norms: A field experiment in 19 workplace restaurants
Research question	What kinds of consumption stereotypes tend to be associated with various more sustainable and less sustainable diet choices, and how may these stereotypical inferences promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves?	What is the relative importance of perceived social norms compared to other food choice motives in driving actual and intended sustainable food choices?	How do different sustainability-related injunctive norms impact food choice when they are activated individually and in combination?
Theories	Impression management, consumption stereotypes	The focus theory of normative conduct, decision processes System 1 and System 2	The focus theory of normative conduct, the model of social norm activation
Data	22 semi-structured interviews	Survey data from five workplace restaurants (N=348)	Survey data from 19 workplace restaurants (N=1289)
Methods	Thematic analysis	Binary logistic regression	Hierarchical ANOVA, Qualitative comparative analysis (QCA)
Main findings	Gender stereotypes and stereotypical characteristics associated with different diet choice types were identified. Gender stereotypes tend to encourage	The perceived descriptive norm was among the most significant food choice motives associated with both the actual choice and the intended future choice. The impact of	The activation of injunctive social norms is an ineffective means to steer food choices towards sustainability as an overall measure in a real-life situation. The activation of

	more sustainable food choices for women but less sustainable food choices for men. However, men seem more gender neutral towards sustainable choices. Stereotypical traits generally support sustainable food choices with some exceptions. The characteristics of 'competence' and 'flexibility' may work against the more sustainable diets and in favour of some less sustainable diets.	injunctive norms was non-significant. The other important motives for actual food choice were the habit of choosing fish dishes, visual appeal, value for money, and ability to satiate hunger. For the intended future choice, central motives were taste, habit, visual appeal and dish perceived as a healthy choice. The importance of considering situational characteristics affecting food choice such as time available to deliberate, cognitive load, and visceral factors was recognised.	injunctive norms impacted small subgroups which varied in their sociodemographic characteristics and consumption patterns. The effectiveness of social norm activation varied between the two different sustainability-related injunctive norms. When the multiple norms were applied simultaneously, the effect of injunctive norms was most significant, with a mutually reinforcing interaction effect.
Contribution	To a more nuanced understanding of social images of food consumption stereotypes by introducing a different set of additional characteristics associated with sustainable food consumption and identifying how these may promote or hinder sustainable food choices.	To the relative importance of social norms in sustainable food choices compared to other food choice motives by distinguishing between descriptive and injunctive norm motives and between actual and intended choice.	To the literature by applying the theoretical framework to a new context and by extending previous knowledge of the joint application of multiple injunctive social norms.
Synthesis of the studies	The research brings further insight to the role of social influence in sustainable food choice by contributing a more nuanced understanding of the social images of food consumption stereotypes and the impacts of social norms and their activation. The results validate earlier findings of gender stereotypes, encouraging more sustainable choices for women but less sustainable choices for men. However, men seem to view more sustainable diets as gender neutral. The results also introduce a novel set of stereotypical characteristics that are associated with different diet choice types. The results also confirm the effectiveness of the descriptive norms and ineffectiveness of injunctive norms from an overall perspective. Moreover, they provide a lifelike assessment of the impact of social norms. The results suggest that in order to intentionally direct consumer behaviour through social influence, it is crucial to acknowledge the features associated with particular food choice situations.		

The purpose of this dissertation was to study the significance of social influence for the sustainability of food choice. This was examined from different aspects using several theoretical frameworks. More specifically, this purpose was further defined by the aim of improving the understanding of how the social images of consumption stereotypes and perceived social norms, as motivating factors, may impact on the consumer's choices in terms of sustainable food. Social images of consumption stereotypes may promote or hinder sustainable food choices for persons who want to portray a socially appealing image of themselves, depending on whether the stereotypes form a social image that the person is willing to present to others. The aim of presenting a positive social image in the presence of other people may facilitate the individual's willingness to conform to social norms and thus impact on how significant these norms appear in relation to other motives. Moreover, the study examined whether the sustainable food choices could be promoted by the activation of social norms. With the data collected in a real-life context, instead of laboratory settings where food choice situation may be simplified and the activation of social norms may be pronounced, the results also provide a lifelike assessment of the impact of social norms.

The results of the articles reveal nuances that have emerged around the concept of social influence, complementing the larger picture of the investigated subject. In light of these findings, the significance of social influence depends largely on contextual factors. These may include the individual's willingness to present a particular social image; what type of social norm is the most efficient; whether the intensity of the norm is enough to transcend other motives in a particular situation; and the individual's sensitivity to social influences. An individual's acceptance and willingness to challenge stereotypical perceptions, interpretations of other people's behaviours, and conscious and unconscious recognition of normative requirements may greatly impact the outcome, that is, how powerfully social influences modify an individual's behaviour.

6 DISCUSSION AND CONCLUSIONS

This dissertation consists of three articles concerning the significance of social influence for the sustainability of food choice. The aim of the articles was to examine the theme from diverse perspectives and add further insight and depth into the topic. The articles address the stereotypical social images associated with different diet choices as promoting or inhibiting sustainable choice, the relative importance of social norms in comparison to other motives in driving sustainable food choice, and the activation of injunctive social norms as predictors of making a choice of a sustainable dish. As social influence and its facets are dynamic rather than stable constructs, in addition to the already complicated concepts of sustainability and food choice, they may offer a wider array of options of developing food consumption towards sustainability. The following sections detail the theoretical and practical implications of this dissertation, followed by outlining the limitations of the study as well as suggestions for future research in the domain of sustainable food choice. The chapter ends with the overall conclusions of the study.

6.1 THEORETICAL CONTRIBUTIONS

The theoretical contribution is focused on two concepts of social influence: the social images of food consumption stereotypes and the social norms of sustainable eating. The importance of consumption stereotypes has been widely acknowledged to influence behaviour (e.g. König et al., 2017; Barker et al., 1999; Vartanian et al., 2007; Vartanian, 2015). Previous literature and studies on consumption stereotypes on eating mostly relate to characteristics such as masculinity/femininity, likeability, physical attractiveness, and healthiness (Vartanian et al., 2007; Vartanian, 2015; Herman et al., 2019). This study strengthens the previous literature by introducing a set of additional characteristics associated with different diets and connecting stereotypical social inferences with sustainable food choices.

People can easily categorise particular foods as healthy or unhealthy, good or bad (Stein & Nemeroff, 1995), as well as feminine or masculine (Mooney & Lorenz, 1999). Social image and stereotypes associated with foods guide choice situations. If a characteristic related to the food is congruent with a person's own identity, the person is more likely to choose that particular food (Brough et al., 2016; Shin & Mattila, 2019). Similarly, a food is likely to be avoided if its characteristic is incongruent with the identity of the individual.

According to the previous research (e.g. Shin & Mattila, 2019), the more sustainable diet choices are generally seen as feminine and the less sustainable as masculine. However, this seems to be only partly true in this study, as the results are more nuanced in this respect. Female respondents considered

those who made more sustainable diet choices to be mostly women, while male respondents did not clearly associate more sustainable dietary choices with either gender. However, male respondents generally considered less sustainable choices to be more masculine. Although for men it may be more challenging to choose "feminine" foods as they are more likely to avoid choices that conflict with their own perception of gender (e.g. White & Dahl, 2006; Gal & Wilkie, 2010; Brough et al., 2016), the results indicate that these gender-related barriers towards sustainable food choices may have been at least partially overcome. Moreover, socially appealing stereotypical traits tend to support sustainable food choices. Although sustainable eaters such as vegetarians and organic food consumers were rated positively in previous studies (e.g. König et al., 2017; Puska et al., 2016), undesired social images were also perceived as barriers to choosing sustainable foods (e.g. Antonetti & Maklan, 2016; Brough et al., 2016, Vartanian, 2015; Minson & Monin, 2012). This contradiction demonstrates the complexity of the social images of eating sustainably and indicates that social appeal of the image may depend more on separate characteristics than on a particular stereotype. In this research, some particular characteristics, which tend to work against the more sustainable diets and in favour of the less sustainable diets, were identified.

The findings of Article I expand the current understanding of social images in sustainable food choice by identifying gender-related and stereotypical inferences made about diet choices and by detecting whether these inferences form gender-congruent or gender-incongruent and appealing or unappealing social images. The characteristics related to particular food choices may be used as drivers towards more sustainable behaviour. Identification of these characteristics implies that there may be unexplored angles which could be utilised to promote more sustainable choices and to understand the factors that inhibit sustainable food choice.

The aim of Article II was to investigate the relative importance of descriptive and injunctive social norms compared with other food choice motives for both the actual choice and the intended future choice of a sustainable dish. Social norms have been studied in various fields (for recent review see Legros & Cislaghi, 2019), including in the sustainable behaviour research, where social norms have gained increasing interest during recent years (for a review see e.g., Yamin, Lahlou & Levy, 2019; Farrow et al., 2017). In addition, the importance of social norms has been confirmed in the context of food and eating (e.g., Cruwys et al., 2015). However, there are very few studies linking these two perspectives and the question of how activating social norms affects the sustainability of food choices has remained unsolved.

The key findings of Article II show that the perceived descriptive norm was significantly associated with both the actual and intended choices of the dish, whereas the perceived injunctive norms were not effective motives for the reported actual food choice nor the intended future choice. This was the case despite the fact that the respondents widely agreed that the injunctive norms existed and that choosing a sustainable dish was consistent with these norms.

In respect to the food choice motives, the existing research on social norms has outlined that typically the social norms do not appear amongst the most significant motives. Thus, the study confirms the earlier findings of social norms having a role, although their impact on actual food choice is weaker than that of other motives (Renner et al., 2012). However, in light of the results of the present study, the weak influence of social norms does not apply to descriptive norms but only to injunctive norms.

The study confirms the previous findings of taste and visual appeal as being key drivers of food choice (e.g., Steptoe et al., 1995; Januszewska et al., 2011). Moreover, in accordance with previous literature (see section 3.4.2 about Systems 1 and 2) when a choice situation is novel and uncertain, the motives related to the automatic and fast decision-making process System 1 were emphasised. In this case, as the choices were made fast and the served dish (although novel in itself) belonged to the larger category of fish, the habit of choosing fish was a strong motive for both actual and intended choices. The relative importance of habit as a motive was reduced once the dish was tasted. Furthermore, the motive of the fish patties' ability to satiate hunger, which was one of the strong motives for the actual choice, was non-significant for the intended future choice, whereas motives like healthiness were significantly associated with the intended choice but not the actual choice. The results are consistent with Loewenstein (1996), where visceral factors, such as hunger, may displace other goals related to choice, but which people often ignore, or are not able to take into account when they consider their future choices. These visceral factors may influence the order of importance of the motives. The study took respondents' possible unawareness of the influencing motives into account by enquiring them about their food choice motives indirectly by asking them to describe their perceptions of the sustainable dish and their reported actual and intended choices.

The above-mentioned findings contribute to the literature of social norms by bringing a new and nuanced understanding to the role of social norms as food choice motives, and their relative importance among other motives when making sustainable food choices, by distinguishing between descriptive and injunctive norms and between the actual and intended choice.

The aim of Article III was to examine whether the two sustainability-related injunctive norm messages predicted the choice of a novel sustainable dish in real-life conditions when the norms were activated individually and in combination. With regard to the impact of social norms as tools to guide consumption towards sustainable choices, the current literature confirms that activating injunctive norms have influenced sustainable behaviour outside the context of food (e.g. Schultz et al., 2007; Goldstein et al., 2008; Schultz, 1999). Injunctive norms have been especially effective when preventing harmful behaviour (e.g. Reno et al., 1993; Cialdini et al., 2006; de Groot et al., 2013). When combined and aligned with descriptive norms, they have proved efficient in promoting particular pro-environmental behaviours (e.g., Schultz et al., 2007). As food can be linked to sustainability in various ways, it

incorporates a wide range of social norms. Thus, several sustainable social norms may relate to a single choice situation.

The first key finding of Article III is that despite the general ineffectiveness of injunctive norm-activating messages, they seem to have an impact on smaller subgroups. Nevertheless, the effect was very small. The second key finding is that individuals react differently to social norm activation. In this particular study, factors such as age, gender, education, and previous consumption patterns seemed to be related to the sensitivity to social norm activation between individuals. A third key finding of Article III was that the effectiveness of injunctive norm activation varied between the two injunctive norms, even if these were both related to sustainability. Although without statistically significant impact in the larger population, the results showed that when applied simultaneously, the effect of norms was most significant, with a mutually reinforcing interaction effect.

The findings of Article III contribute to the existing literature by applying a theoretical framework of activation of injunctive social norms to the novel and important context of sustainable food choices. The current literature does not yet confirm how these norms would function as guidance on sustainable food choices, although more research on the topic has been called for (McDonald et al., 2014). The previous knowledge is also extended by examining the new theoretical question of how the joint activation of multiple injunctive norms affects sustainable behaviour and opens a relevant line of exploration.

The articles II and III bring valuable insights also thanks to the field study they contain. Often the studies about social norms have been conducted in laboratories, where the complexity of the food choice situation has been simplified and may be biased (Robinson, 2015). In controlled research conditions the activation of social norms may be more efficient and the food choice motives, which are dominating in real life, may be completely absent. As the data of these two articles was collected in workplace restaurants from real clientele regarding choices taking place in these public settings in limited time, the results provide a lifelike assessment of the impact of social norms.

6.2 PRACTICAL IMPLICATIONS

In addition to the theoretical implications above, this study also has practical implications for organisations, management and policy-makers attempting to steer consumer choice. The effectiveness of social influence as a policy tool in the field of sustainability appears to be highly dependent on the nuances that have emerged around the subject of this dissertation. The three articles provide suggestions concerning the characteristics associated with consumption stereotype considerations; the usage of social norms as activated and inactivated drivers for food choices; as well as situational factors and issues dependent on individuals.

In earlier studies (e.g. White & Dahl, 2006; Gal & Wilkie, 2010; Brough et al., 2016) somewhat traditional stereotypical assumptions related to gender have been perceived as barriers, especially by men, in adopting sustainable food choice patterns. This was partly confirmed again in Article I in respect to less sustainable choices, although males showed gender-neutrality towards some more sustainable diet choice types. Stereotypical views which prevent men from choosing sustainably should be further broadened or broken (for example, by introducing masculine role models with sustainable diets), and changed into views which encourage men to choose sustainably. In respect to the socially appealing and unappealing traits, many of these stereotypical traits already work in favour of sustainable food choices and can be further emphasised. Steps to facilitate the adoption of sustainable alternatives in social situations may reduce manifestations of behaviour which is interpreted as inflexible and unappealing. Furthermore, barriers to making sustainable food choices could potentially be reduced by educating consumers on sustainable eating. This is to confirm that fewer people are misinformed and that perceptions about who is knowledgeable and who is misinformed rest on a sound basis.

In addition to the suggestion that sustainable alternatives should be easily available, the results of Article II propose that organoleptic and visual characteristics of sustainable food items should be retained at the forefront of product development. Moreover, based on the findings on both the significant impact of descriptive norms and the insignificant impact of injunctive norms, it is suggested that choices may be steered towards increased sustainability by a skilled mobilisation of descriptive norms. Importantly, in promoting sustainable food choices, the challenge is not only to design product alternatives with sustainable features, but also to design choice situations that support sustainable decision-making. Thus, the impact of individual situations cannot be underestimated.

The results of Article II state that in contrast to the descriptive norms, the strength of the injunctive norms was proven to be weak, especially when inactivated. The results of Article III strengthen this finding. Even when the norms are activated, the outcome may turn out to be different from those intended, or interventions may prove ineffective or very marginal in efficacy. Therefore, to avoid ineffectiveness, decision-makers should take this into account as well as the fact that achieving the intended outcome may require a thorough familiarisation with the circumstances when planning the use of social norms as an instrument. Consequently, one of the pre-conditions for activated social norms to have an impact is that the intended normative message is reached by those who are meant to receive it. If the target population is not reached, the impact cannot materialise. As explained in Article III, only about 50 % of the consumers reported that they saw the message sign and even fewer, less than 20 %, were able to recall its content. Even if the message is received, its impact may be weaker than other competing motives as it can be difficult to get the message through in a real-

life food choice situation. Furthermore, even if there is an impact, it may be limited to specific, but marginally small subgroups. Moreover, in the case of activating multiple norms simultaneously, their impact may vary in terms of strength and effect due to the way individuals respond to norm activation. It is crucial to find measures which are realisable and effective in challenging real-life situations. The medium should be decided based on the target population. Also, the social norm message should be suitable for that particular context. To avoid unwanted or redundant effects, one should consider carefully which social norms to activate. In the case of multiple norm activation, one ought to recognise which norms are likely to be activated and confirm that both the descriptive norms and the injunctive norms are aligned with the sustainability goals. Taking these implications into consideration offers numerous opportunities for influencing individuals, with the possibility of targeting smaller populations at a time for more effective results.

6.3 LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

It is necessary to consider the limitations of the findings of this dissertation when assessing them in terms of the wider field of study. Firstly, there are limitations that relate to the composition of the data sets and thus to the generalisability of the results. Both of the data sets were acquired in Helsinki, Finland and participation in the study was voluntary. The first data set consisted of interview data gathered from undergraduate and graduate students of the University of Helsinki. The sample was geographically focused on the metropolitan area of Helsinki, which may differ from other parts of the country. The fact that the sample consists of students is also a limitation. The students' opinions on dietary choices might be different from those of the general working population. Moreover, in respect to their environmental awareness, they are also customers of university canteens, and especially the canteens at the University of Helsinki have highlighted environmental aspects when considering and designing their lunch menus. As a result, the students' perceptions of, for example, environmentally friendly eating may be accentuated or considered as normal, or neutral in terms of gender stereotypes. However, as students were able to paint a detailed picture of various diet choices, potential future research in this domain could focus on how such diet types were perceived by other population samples within the same or different geographical areas.

The second data set for the articles II and III was collected in workplace lunch restaurants. As expected, the findings of the field research, which focused on workplace restaurants where the clientele is mostly of working age, are not directly generalisable to the general population. Although restaurants are a suitable environment for studying the impact of social influences on food choices, the results cannot be generalised to other restaurants or other food

choice situations as the sustainable option in the study as well as its alternative were predetermined. It is also possible that the results of the study may have been different if there had been another food in place of meat lasagne. Moreover, the survey carried out for articles II and III excluded vegetarians and vegans, although their motives and normative beliefs might justifiably be more environmentally related.

Secondly, the findings have raised several potential opportunities for future research in this domain. One interesting follow-on question in terms of consumer stereotypes would be the relative importance of the stereotypical characteristics, and more specifically, whether they override other characteristics and under what circumstances. Of course, now that the debate on sustainable food choices has become more commonplace and vocal, investigating how the perceptions of consumption stereotypes may change over time would be an insightful subject of research as well.

In regard to food choice motives, further research into the impact of activated social norms, acknowledging visceral factors, such as hunger, would be worth exploring. In addition, as the study in Article II was not designed to examine the direction of the relationship between the actual choice and the descriptive norm, providing the respondents with explicitly communicated actual descriptive norm (such as the percentage of people actually choosing a sustainable dish) instead of measuring the perceived descriptive norm would shed more light on how the different motives interact in determining food choice. Finally, a suggestion for a new field experiment study with social norm activation would include an examination of different types of combined norms. In the field experiment described in Article III, the social norms concerning the Baltic Sea protection and local food were activated. Moreover, it is possible that those who are more committed to environmental issues will also pay more attention to messages activating sustainable social norms. Thus, people with varying levels of susceptibility could be reached through different messages. This could be examined in more detail. As general awareness of climate change increases, new courses of action will become more widespread, leading to the emergence of new social norms concerning sustainable food choices.

6.4 CONCLUSIONS

The overall aim of this dissertation was to increase the understanding of the impact of social influences on consumers' sustainable food choices. Right from the beginning, the topic was deemed very important for its practical implications as food consumption has such large-scale sustainability impacts. The role of food as a vital part of the change in the production and consumption patterns towards greater sustainability is becoming increasingly important and continues to be highlighted as part of the recent and ongoing discussions around the unsustainability of the current economic systems

(IPCC, 2018), biodiversity and ecosystem services (IPBES, 2019). Moreover, the role of social influence as a research subject has also increased its popularity. These observations from the scientific community are guiding societies towards a wider structural and cross-sectoral change. During the years of conducting this study, the research field where this study is situated has changed and will continue to evolve in terms of the perception of social images and stereotypes, social norms, as well as how to communicate them.

Sustainable food choices may not always be simple ones for many reasons. Generally speaking, socially appealing and unappealing social images of consumption stereotypes reflect the challenges faced by the attempts of steering diets towards more sustainable options. Although the results of this study concerning the socially shared stereotypes emphasise that stereotypical social images associated with food tend to support sustainable eating, understanding the exceptions and how they impact on the overall social images is important. Moreover, people are more likely to look for new ways to express their identities through food. As the social images are a combination of characteristics, it is essential to be aware of the emphasis and effects of these characteristics. As social images may be powerful within people's minds even if they are not accurate, breaking those images and blending the traits may have relevance, especially when choices are conducted in public.

Environmentally friendly practices in food production are increasing at present. Likewise, environmentally friendly eating behaviour is becoming increasingly more common, and the perceptions of social norms tend to change. With regard to social norms from the consumer's point of view, the norms are often over-driven by other food choice motives. The strength of other motives aside, social norms may depend on a number of contextual factors. Conditions where sustainable behaviour becomes dominant strengthen the sustainability-promoting impact of not only the descriptive norm but also the injunctive norm. While there are many social norms concerning sustainable eating, the joint activation of multiple social norms may also strengthen the impact. Moreover, injunctive norms need to be communicated clearly and concretely. If communicating social norms becomes too diverse, it can also be expected that the importance and influence of those norms may change.

Overall, the findings of the study indicate that investigating the impact of social influence offers a multidimensional insight into sustainable food choice. Social influence appears as a challenging environment but has a lot of potential when it comes to steering consumption towards sustainability. To fully realise the potential of this, it is necessary to understand the nuances around socially shared stereotypes, the communication of descriptive and injunctive social norms, and the strength of contextual factors and other motives in various food choice situations, including the public nature of the decision-making. Although social influence utilises other people as the force of change, the focus is on how the individual is affected. As this study has shown, there is no simple way to influence all the people, however, the true effectiveness of the attempts

towards sustainability can be found in the details that may seem small and trivial at a first glance, but which, when used carefully, may produce a more powerful and sustained overall effect.

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